

**GUIDE FOR COMMUNITIES PARTICIPATING
IN THE NATIONAL FLOOD INSURANCE PROGRAM
IN ARKANSAS**

VOLUME 4

**FLOOD INSURANCE
MITIGATION
REFERENCE MATERIAL**
(Chapters 9 and 10, plus Appendixes)



Published by

**Arkansas Natural Resources Commission
101 East Capitol, Suite 350
Little Rock, AR 72201**

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March 2008

TO: LOCAL FLOODPLAIN ADMINISTRATOR
of Communities Participating in the National Flood Insurance Program

Flooding continues to be a major problem for communities in Arkansas. Through the National Flood Insurance Program (NFIP), many citizens can now insure their property against flood losses. At the same time, future losses can be reduced by proper management of flood-prone areas.

This guide is intended to assist local officials of communities, which are participating in the NFIP, in managing their floodplains. Further assistance may be obtained by contacting the Arkansas Natural Resources Commission.

We acknowledge the assistance of the Federal Emergency Management Agency (FEMA), through the Community Assistance Program - State Support Services Element, in the preparation of this guide. Through such programs the efforts of Federal, State and Local governments can be effective in reducing future flood losses.

A handwritten signature in black ink, appearing to read "J. Randy Young".

J.Randy Young, P.E., Executive Director

ORIENTATION

A. INTRODUCTION

This guide is contained in four (4) volumes. Chapters are numbered consecutively throughout the document. The Orientation and Table of Contents are repeated at the beginning of each volume.

This guidebook is intended to provide Floodplain Administrators and other local officials with tools in managing development in the floodplain as a participating community in the National Flood Insurance Program (NFIP). Any questions should be directed to the Floodplain Management Program of the Arkansas Natural Resources Commission (ANRC). Floodplain Administrators should read through this guide to familiarize themselves with its contents.

Each floodplain administrator should become familiar with the community's floodplain management regulations, usually contained in the form of an ordinance, code or some combination.

The evaluation of development permits is also very important. Special attention should be given to non-structural developments, such as placement of fill and alterations of stream channels, and to the "floodway" requirements. Some communities have separate "floodway" maps and Flood Insurance Study (FIS) booklets. Some have "floodways" included on the Flood Insurance Rate Maps (FIRMs). Generally, if the FIRM has "base flood elevations" on any part of the floodplain, the community has a "floodway" map.

Remember, that how the floodplain administrator conducts his or her business can have significant consequences for property owners and occupants of the floodplain. Whether it's savings on a flood insurance bill or protection from a flood, there will come a time when conscientious floodplain management will be rewarded.

The responsibility for reducing flood losses is shared by all units of government - local, state and federal - and the private sector.

Fulfilling this responsibility depends on having the knowledge and skills to plan and implement needed floodplain management measures. The fundamental floodplain management program that most others are built on is the National Flood Insurance Program (NFIP).

The NFIP provides the maps and regulatory basis for local floodplain management. It is also the primary source of insurance protection for flood-prone properties. Its success depends on the people responsible for administering its mapping, regulatory and insurance aspects.

This document can serve two purposes. First, it can be used as a study guide to enhance the knowledge and skills of local officials responsible for administering and enforcing local floodplain management regulations. It is also intended to broaden their understanding of floodplain management strategies that can be applied at the local level.

Second, the study guide can be used as a desk reference that you can refer to when specific issues arise as you implement your floodplain management ordinance. Guidance is included on how to handle many of these issues and information provided that will help you explain the requirements to citizens of your community. References are included on where to find more information or guidance on many issues. The FEMA documents that are referenced are available from the FEMA Distribution Center at 1-800-480-2520. The address is: Federal Emergency Management Agency, Attention: Publications, PO Box 2012, Jessup, MD 20794-2012. Most of these publications can also be can be downloaded from the FEMA website, <http://www.fema.gov>.

While any interested person may use this study guide and desk reference, it is written specifically for the local official who is responsible for administering his or her community's floodplain management regulations. Thus, references to "you," assume that you are a local official.

STUDY GUIDE OBJECTIVES

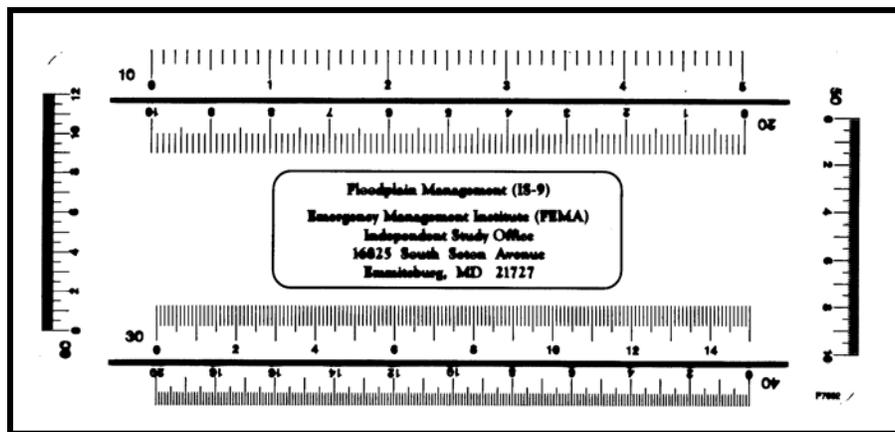
Upon completing this study guide, you should:

1. Be familiar with flood hazards and how human development interacts with the natural process of flooding.
2. Understand the purpose of the NFIP and your community's role in it.
3. Understand the basis for flood maps and data.
4. Be able to use floodplain studies and maps to support your floodplain management program.
5. Be able to explain the minimum regulatory requirements of the NFIP.
6. Be familiar with additional regulatory standards that your community could adopt.
7. Understand your responsibilities in administering your community's floodplain regulations for new construction.
8. Understand how to administer your community's floodplain regulations for repairs and improvements to existing buildings.

9. Be familiar with how flood insurance policies are written and how they relate to your community's regulations.
10. Be prepared to administer your floodplain regulations following a disaster.

These 10 objectives are the topics of the chapters in this study guide.

Engineers Scale. You should obtain a clear plastic engineer's scale or similar measuring device for use in several of the exercises in Volume 4, Appendix H, of this study guide and for day-to-day implementation of your ordinance. A scale helps convert measurements on a map to distance on the ground.



B. USING THE STUDY GUIDE

To administer a floodplain management program, you need to know about regulations and procedures under the National Flood Insurance Program. This study guide is designed to prepare you to serve as your community's floodplain management administrator. As you can tell by the number and size of these volumes, you need to acquire a daunting amount of information. Most of what you need is covered in these pages, as these documents are a comprehensive guide to the NFIP and your role as administrator. By design, this study guide will help you learn. Key words and phrases appear with underlines and they are listed in the glossary in Appendix D. Each chapter has frequent learning checks and a comprehensive review at the end. Be sure to do all of these – you learn best when you practice using the materials. The study guide does not have an index. However, each of the ten chapters covers a specific topic or area. At the beginning of each volume is a detailed Tables of Contents. You should be able to find where an issue is addressed in the study guide by scanning the Table of Contents. Special "Arkansas Inserts" supplement the main text.

WHERE TO GET HELP

For help in understanding any of the course content, contact your FEMA Regional Office or NFIP State Coordinator. These offices are listed in Appendices A and B.

C. ACKNOWLEDGMENTS

This study guide and desk reference is based on **FEMA Publication 480: National Flood Insurance Program (NFIP) Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials**. The FEMA document has been expanded by including information specific to Arkansas. Detailed discussions of coastal floodplains and other topics which do not affect Arkansas have also been omitted. Still, the increase in number of pages has led to a division of the single volume guide into four (4) volumes.

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CHAPTER 9

FLOOD INSURANCE AND FLOOD MANAGEMENT

A. FLOOD INSURANCE POLICIES

This section is devoted to flood insurance policies: what's covered, what's not covered, when a policy must be bought, and other rules. This is important information for the local permit administrator to know because some construction decisions affect what is eligible for insurance coverage.

If you have additional questions:

- ***Answers to Questions about the National Flood Insurance Program***, questions 21 – 66 covers the topics in this chapter.
- Local insurance agents should have additional references, including FEMA's ***Flood Insurance Manual***.

These publications can be found on FEMA's web site, www.fema.gov.

As noted in Chapter 2, 97% of the communities in the NFIP are in the Regular Phase. Only a few communities with minor flood problems or which have just recently joined the NFIP are still in the Emergency Phase. This section only discusses the Regular Phase provisions. The only major difference is that Emergency Phase policies have limited amounts of coverage available.

WHO'S INVOLVED

Flood insurance policies are obtained through local property insurance agents. The agents may sell a policy from one of the Write Your Own insurance companies or a "direct" policy through FEMA. Both approaches will result in the issuance of a "Standard Flood Insurance Policy" that meets all the requirements and rates set by FEMA.

If an insured property is flooded, the property owner contacts his or her insurance agent. The agent arranges for an adjuster to review the damage and work with the insured to settle a claim.

Property owners always work through their insurance agents – they do not need to deal with FEMA.

COVERAGE

Flood insurance coverage is provided for insurable buildings and their contents to property owners in NFIP communities.

Building coverage

Building coverage is for the structure. This includes all things that typically stay with the building when it changes ownership, including:

- Utility equipment, such as a furnace or water heater
- Carpet permanently installed over unfinished flooring
- Built-in appliances
- Wallpaper and paneling

Ten percent of a dwelling's building coverage may be applied to a detached garage. Residential detached garages used, or held in use, for residential business or farming are not covered under the dwelling policy. These detached garages and other appurtenant structures must be insured under a separate policy.

"Building" defined

A "building" is defined as a walled and roofed structure, including a manufactured home that is principally above ground and affixed to a permanent site. This definition has three parts:

- "Walled and roofed" means it has in place two or more exterior rigid walls and the roof fully secured so that the building will resist flotation, collapse and lateral movement.
- "Manufactured (mobile) home" is a building transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities.
- "Principally above ground" means a building that has at least 51 percent of its actual cash value, including machinery and equipment (but not land value), above ground.

A travel trailer, without wheels, built on a chassis and affixed to a permanent foundation that is regulated under the community's floodplain management and building ordinances or laws is also a building and can be insured.

This definition is similar to, but not quite the same as, the definition for "building" or "structure" used for floodplain management and defined in Chapter 5, Section E.

Buildings in the course of construction that have yet to be walled and roofed are eligible for coverage except when construction has been halted for more than 90 days and/or if the lowest floor used for rating purposes is below the BFE. Materials or supplies intended for use in such construction, alteration, or repair are not insurable unless they are contained within the enclosed building on the premises or adjacent to the premises.

Examples of things that are not considered insurable buildings include:

- Gas or liquid storage tanks,
- A structure with 50 percent or more of its value underground, such as an underground pumping station, well or septic tank,
- Tents,
- Tennis and swimming pool bubbles,
- Swimming pools,
- Fences, docks, driveways,
- Open pavilions for picnic tables and bleachers,
- Detached carports with open sides,
- Recreational vehicles,
- Sheds on skids that are moved to different construction sites,
- Licensed vehicles, campers and travel trailers (unless permanently attached to the site),
- A building declared in violation of a state or local law (see Chapter 7, Section E on Section 1316),
- Buildings over water or seaward of mean high tide which were built after October 1, 1982, and
- Landscaping, crops, and other items outside of a building.

Contents coverage

Contents coverage is for the removable items inside an insurable building. A renter can take out a policy with contents coverage, even if there is no structural coverage.

Certain contents are not insurable. These include:

- Animals and livestock,
- Licensed vehicles,
- Jewelry, artwork, furs and similar items valued at more than \$2,500,
- Money or valuable papers, and

- Personal property that is not secured to prevent flotation located in a building that is not fully enclosed (such as an open carport).

Basements

A basement is defined as any area of the building, including any sunken room or sunken portion of a room, having its floor below ground level (subgrade) on all sides. There is limited coverage for basements:

- Building coverage is not extended to wallpaper, carpeting and similar finishings.
- The only contents kept in a basement that are covered are air conditioning chapters (portable or window type), clothes washers and dryers, food freezers, other than walk in, and food in food freezers.

Despite these limitations on coverage, it is advisable for property owners with basements to obtain flood insurance. Hydrostatic pressure from flood waters can cause structural damage to the walls and floor of the basement that can be costly to repair. In some cases structural damage can occur to the elevated portion of the building as a result of the failure of basement walls or floors even though flood waters never reach the first floor of the building.

Enclosures

There is limited coverage in enclosures below the lowest floor of an elevated post-FIRM building (including a manufactured home) located in SFHAs:

- There is no contents coverage in these enclosures.
- The only structural coverage is for the required utility connections and the foundation and anchoring system required to support the building.

The permit official should make sure that property owners are aware that flood insurance coverage in these areas is limited. This lack of coverage may discourage property owners from modifying these enclosures later so that they become noncompliant.

Amount of coverage

Insurance rates for buildings and contents are shown on selected pages from the Flood Insurance Manual for October 1, 2008, at the end of this chapter. The May 1, 2008, date at the bottom of the rate pages means those pages were not changed with the October manual revision.

Waiting period

A 30-day waiting period follows the purchase of a flood insurance policy before it goes into effect. There are exceptions to the 30-day waiting period for policies purchased in connection with the making, increasing, extending, or renewing a loan or certain map changes.

The objective of this waiting period is to encourage people to keep a policy at all times. FEMA does not want folks to wait for the river to rise before they buy their coverage. Also, to be on a sound financial basis, the NFIP needs everyone at risk to pay their share of the premiums.

Many people have found out about the waiting period the hard way. Your community would be wise to publicize availability of flood insurance so residents can be protected when a flood comes.

The Mandatory Purchase Requirement

The Flood Disaster Protection Act of 1973 added a key requirement to the NFIP: if a community participates in the program, flood insurance is a prerequisite for receiving grants or loans for the acquisition or construction of buildings in a designated floodplain from a federal agency or through a federally-related loan program.

Where it applies

The mandatory purchase requirement applies to all forms of federal or federally related financial assistance for buildings located in Special Flood Hazard Areas (SFHAs). This requirement affects loans and grants for the purchase, construction, repair, or improvement of any publicly or privately owned building in the SFHA, including machinery, equipment, fixtures, and furnishings contained in such buildings.

Financial assistance programs affected include loans and grants from agencies such as the Department of Veterans Affairs, USDA Rural and Housing Services, Federal Housing Administration, Small Business Administration, and Federal Emergency Management Agency.

The requirement applies to secured mortgage loans from financial institutions, such as commercial lenders, savings and loan associations, savings banks, and credit unions that are regulated, supervised or insured by Federal agencies such as the Federal Deposit Insurance Corporation and the Office of Thrift Supervision.

The requirement comes into play if a loan is made, increased, renewed or extended – at any of those steps, the lender must check to see if the building is in an SFHA at that time. For example, a building in an X Zone when the original mortgage was taken out would be affected if the area is remapped in the SFHA and the loan is later refinanced.

The requirement also applies to all mortgage loans purchased by Fannie Mae or Freddie Mac in the secondary mortgage market.

How it works

Before a person can receive a loan or other financial assistance from one of the affected agencies or lenders, there must be a check to see if the building is in an SFHA on the Flood Insurance Rate Map (FIRM). It is the agency's or the lender's responsibility to check the FIRM to determine if the building is in an SFHA, although many communities provide assistance.

Usually, the lender will have the determination done by a third party flood hazard determination company that provides a guarantee that the determination is correct. The lender must document the determination and whether flood insurance is required on a Standard Flood Hazard Determination Form (FEMA Form 81-93). The lender will notify the borrower if flood insurance is required.

If the building is in an SFHA, the agency or lender is required by law to require the recipient to purchase a flood insurance policy on the building. The requirement is for building coverage equal to the value of building (not the land), the amount of the loan (or other financial assistance) or the maximum amount of flood insurance available, whichever is less.

Note: Many people who were required to get building coverage do not realize that their contents are not covered unless they voluntarily purchase contents coverage. A local public information program would help residents by informing them of this and other basic facts, such as the 30-day waiting period and the availability of insurance for properties outside the floodplain.

The mandatory purchase requirement does not affect loans or financial assistance for items that are not covered by a flood insurance policy, such as vehicles, business expenses, landscaping, and vacant lots.

It does not affect loans for buildings that are not in the floodplain, even though a portion of the lot may be floodprone. While not mandated by law, a lender may require a flood insurance policy as a condition of a loan for a property in any zone on a FIRM.

Flood Insurance for your Community

As a recipient of federal financial assistance, your community may have been required to purchase flood insurance under the mandatory purchase requirement. You should determine if there are any insurable publicly owned buildings in your floodplain. If so, see if they received federal aid in the past. Likely prospects include:

- A wastewater treatment plant (which are always located near a body of water), which received a grant from the Environmental Protection Agency.
- Public housing or neighborhood center funded with help from the Department of Housing and Urban Development or the Community Development Block Grant.
- Any facility that received disaster assistance after a flood or other disaster declaration.

Whether there was a requirement to buy insurance or not, you should advise your risk manager or other appropriate office about the buildings exposed to flooding. Many agencies find out too late that their "all risk" insurance policies don't cover flooding.

Over the last few years, Congress has taken steps to encourage public agencies and private property owners to purchase flood insurance instead of relying on disaster assistance for help after a flood. Disaster assistance for a public building will be reduced by the amount of insurance coverage a community should carry on the building (regardless whether the community is carrying a policy).

In effect, disaster assistance for public agencies now has a very large deductible equal to the insurance policy it should carry. Why wait for the disaster to be caught short? You should advise the appropriate people of the need to purchase flood insurance coverage on your community's buildings.

B. RATING BUILDINGS

The insurance agent calculates the premium for a flood insurance policy on a property. The premiums on new buildings are based on the risk of flooding and flood damage. If a building is built incorrectly, the owner may be faced with very high premiums or insufficient coverage. On the other hand, if a building is built properly, the owner will pay less than what it costs to insure a pre-FIRM building under the “subsidized” rates.

The two aspects of the NFIP – insurance and regulations – reinforce each other. How well local floodplain management regulations are enforced affects the flood insurance rates paid by the citizens of your community. Consequently, it is important for you to know how flood insurance rates are set for new and substantially improved buildings.

As noted earlier, 97% of the communities in the NFIP are in the Regular Phase. Only a few communities with minor flood problems are still in the Emergency Phase. This section only discusses the Regular Phase rates. Emergency Phase policies are rated similarly to pre-FIRM policies.

RATING PRE-FIRM BUILDINGS

Pre-FIRM buildings are those built before the effective date of your first Flood Insurance Rate Map (FIRM). This means they were built before detailed flood hazard data and flood elevations were provided to the community and usually before your community enacted comprehensive regulations on floodplain construction.

Pre-FIRM buildings are rated using “subsidized” rates that, for most pre-FIRM buildings are significantly less than actuarial rates that fully reflect their risk of flooding. They are designed to help people afford flood insurance even though their buildings were not built with flood protection in mind and were an incentive for communities to join the NFIP.

The “subsidy” in the subsidized rate is really premium income that is foregone by the NFIP and is not being funded by taxpayers. In the short term, it is funded through an insurance mechanism called cross-subsidization. Surpluses from premiums paid by Post-FIRM SFHA and B, C and X Zone policyholders are, in effect, being borrowed to help their Pre-FIRM counterparts obtain affordable flood insurance coverage. The NFIP also has statutory authority to borrow a specified amount of money from the U.S. Treasury and exercises this authority to even out good years and bad. However, this borrowing must be paid back with interest. If catastrophic flooding occurred over several years and the NFIP exceeded its statutory borrowing authority, the program may have to obtain an appropriation from Congress to pay back this “subsidy”.

The Pre-FIRM building rates are shown in Table 2 reproduced from the NFIP *Flood Insurance Manual*. They are based on the building type and FIRM zone and not on the building's elevation in relation to the BFE. If there is an Elevation Certificate for the building and it is in a Regular Program community, the building can be rated using Post-FIRM rates at the option of the policyholder. If the building has its lowest floor at or above the BFE, Post-FIRM rates on the building will generally be lower than Pre-FIRM rates.

If a Pre-FIRM building has been substantially damaged or substantially improved, it becomes Post-FIRM and is rated using Post-FIRM rates. Some Pre-FIRM buildings that have lateral additions that are substantial improvements may continue being rated as Pre-FIRM if certain conditions are satisfied (determining substantial damage and substantial improvement is explained in Chapter 8).

Rates are per \$100 coverage. The two numbers under each category (Building or Contents) reflect the rates for the basic and additional layers of coverage explained in Table 2. The FIRM zones designations are explained in **Figure 3-10**, Volume 2.

RATING NEW BUILDINGS

The flood insurance premium rates for Post-FIRM construction are actuarial, meaning that they are based on a building's risk of flooding. In those zones where base flood elevations (BFEs) have been established, Post-FIRM Rates are determined based on the elevation of the lowest floor (including basement) of the building in relation to the BFE. In zones where BFEs have not been established, the rates are based on the overall loss experience and expected damages for all buildings within that zone.

Several of the rate tables from the NFIP *Flood Insurance Manual* are reproduced on the following pages. The entire NFIP *Flood Insurance Manual* can be viewed on FEMA's website at www.fema.gov. You cannot rate a building using just these tables since there are other rules and factors that must be applied to the building besides the elevation of its lowest floor. However, they do illustrate the differences in rates for various building types, zones and building elevations.

Table 3A shows the Post-FIRM rates for buildings in Zones A99, B, C, X, and D and in Zones AO and AH zones. Since no BFEs are available, buildings in these zones are not rated based on elevation. Policyholders in Zones B, C, and X zones can also obtain a Preferred Risk Policies at lower rates provided that they have had a favorable loss experience.

Table 3B shows the rates for Post-FIRM buildings in Zones AE and A1-30. Note that the rates are significantly lower for buildings built to elevations one foot or more above BFE. Requiring freeboard in your ordinance (elevation to one foot or more above BFE) will lower insurance rates on buildings in your community. These lower rates will offset any additional costs of construction. Buildings with their lowest floors below the BFE are charged significantly higher flood insurance rates. In fact, rates for buildings 2 feet or more below BFE are not published in the *Flood Insurance Manual* since these buildings must be individually rated due to their high risk of flooding.

Table 3E shows the Post-FIRM rates for elevated buildings in Zones VE and V 1-30 that have no obstructions (such as enclosures) below the elevated floor. These rates are higher than rates in Zones AE and A1-30 because of the greater damages that can be caused by wave impacts. Table 3F shows the same rates for buildings that have enclosures below their elevated floors that are less than 300 square feet. The rates for buildings with enclosures are higher than those without enclosures due to the increased loads placed on the building's foundation when waves impact on the enclosure. Buildings with enclosures 300 square feet or greater have an even higher risk and must be individually rated by the insurance company or FEMA.

Submit for rate

Certain properties at high flood risk, because of peculiarities in their exposure to flooding, do not lend themselves to preprogrammed rates. Rates for these properties are not included in the *Flood Insurance Manual*. These risks require an in-depth underwriting analysis and must be submitted to the NFIP or WYO Insurance Company for an individual (specific) rate. Examples include buildings with their lowest floors two feet or more below BFE, buildings with below grade crawlspaces, certain buildings with enclosures 2 feet or more below BFE, some buildings in unnumbered A zones, and similar risks.

Since a submit-for-rate policy often is an indicator of the property owner's noncompliance with a community's regulations, the community's failure to enforce its regulations, or the result of a variance action, these cases are forwarded to the appropriate FEMA Regional Office for investigation.

Elevation certificates

Elevation Certificates are required to rate most Post-FIRM Buildings. The **Elevation Certificate** provides the data the insurance agent or company needs to determine the lowest floor of the building and calculate the flood insurance premium using the appropriate rates from the preceding pages. The Elevation Certificate is discussed in Chapter 7, Section G.

Floodproofing

A floodproofed nonresidential building is rated based on the elevation of its lowest floor, unless it is floodproofed to one foot above the BFE. Then, one foot is subtracted from the flood protection level. Thus, a building must be floodproofed to one foot above the BFE in order to get the same rates as a building elevated to the BFE.

If a building is only floodproofed to the BFE or lower, this floodproofing credit cannot be used and it will be rated based on the floor elevation. If the lowest floor is two or more feet below the BFE, it will be a submit to rate.

Buildings that are floodproofed need floodproofing certificates, as explained in Chapter 7, Section G.

RATING UNNUMBERED A ZONES

Unnumbered A Zones are floodplains that are mapped on the FIRM using approximate methodologies that do not have BFEs. Unnumbered A Zones are sometimes referred to as approximate A Zones. The approximate studies used to designate these areas are discussed in Chapter 3, Section E. A Post-FIRM building in an unnumbered A Zone cannot be rated using tables like Table 3B.

A Post-FIRM single-family home in an unnumbered A Zone will be subject to a rate of \$4.06/1.42 for building coverage and \$3.36/1.00 for contents coverage. This rate is much higher than the rates in Tables 2 and 3B. This can be a real disincentive for people to buy flood insurance on Post-FIRM buildings in unnumbered A Zones.

There are two ways to obtain lower rates in unnumbered A Zones. In either case, an elevation certificate is needed.

If the community provides a locally developed BFE and the building is elevated to or above that BFE, the rates are comparable to those for buildings in AE Zones. Communities are encouraged to do this, as explained in Chapter 5, Section B.

If there is no base flood elevation from any source, rates can be set based on the height of the building above its highest adjacent grade. Rates are reduced for buildings 1 foot, 2 feet and 5 or more feet above grade (the higher the building, the lower the rate). For buildings built at or below grade, the submit for rate approach is used.

PREMIUMS

A policy holder's total payment is calculated by:

Multiplying the amount of building coverage desired times the rate (done once for the basic coverage and again for the additional limits),

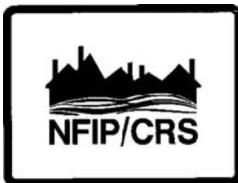
Multiplying the amount of contents coverage times the rate desired (done once for the basic coverage and again for the additional limits),

Applying the deductible factor,

Adding the premium for Increased Cost of Construction coverage (which varies from \$4 to \$75, depending on the type of building and FIRM zone. See Chapter 8, Section B on ICC coverage),

Adding the Federal policy fee (currently \$35 to help pay for administrative costs, such as floodplain mapping).

The rates can vary based on the community's floodplain management program. If the community has not properly enforced its floodplain management ordinance, it could be put on probation. Under probation, all policies have an additional \$50 surcharge. If a community does not take remedial or corrective measures while on probation, it can be suspended.



Conversely, a community that has an exemplary program that includes floodplain management activities above and beyond the minimum NFIP criteria may apply for a Community Rating System (CRS) classification. Residents in CRS communities can receive up to 45% insurance discounts. The CRS is explained in more detail in the next section.

C. THE COMMUNITY RATING SYSTEM



The Community Rating System (CRS) is one of the best programs around for encouraging and recognizing broadbased local flood hazard mitigation programs.

The CRS provides a reduction in flood insurance premium rates of up to 45 percent for communities that implement activities above and beyond the minimum requirements of the NFIP. The CRS provides credits for a variety of community flood protection activities.

To receive a CRS flood insurance premium reduction, a community can apply to its FEMA Regional Office or the Insurance Services Office, Inc. (ISO) which manages the program for FEMA. This involves application worksheets and presentation of appropriate documentation to demonstrate that the community has undertaken activities that go beyond NFIP minimum requirements. The ISO/CRS Specialist can assist in preparing the application and reviews the application for FEMA to determine the community's classification and flood insurance discount. An ISO/CRS Specialist will visit the community and verify that the activities are being implemented as described in the application.

The ISO/CRS Specialist is kept abreast of any changes in the community's program and conducts periodic visits to verify continued implementation.

BENEFITS

The CRS offers some non-financial benefits. First, the community's flood program would receive recognition from a national evaluation program.

Second, technical assistance in designing and implementing some activities is available at no charge from ISO.

Third, the CRS keeps track of the community's floodplain management program. If future governing boards consider eliminating a flood-related program or reducing the regulatory requirements for new developments, it could affect the community's CRS status. This may give them second thoughts about reducing the community's flood protection efforts.

A similar system used in fire insurance rating has had a strong impact on the level of support local governments give their fire protection programs. In other words, the CRS encourages communities to keep their flood programs going during times of drought and diminished interest.

CRS ACTIVITIES

The *CRS Coordinator's Manual* describes the 18 floodplain management activities credited by the Community Rating System and the documentation required to receive credit for each activity. The credits and formulae used to calculate credits are also included.

The *CRS Application* provides a simpler summary of the activities and the initial steps needed to apply for credit.

These activities are divided into four categories, or series:

- 300 Public information
- 400 Mapping and regulations
- 500 Flood damage reduction
- 600 Flood preparedness

The activities' credit points can be increased if they are part of a comprehensive floodplain management or flood hazard mitigation plan. Special credits are provided for activities that affect special hazards, such as coastal erosion and alluvial fan flooding, that aren't reflected in the NFIP mapping or regulatory standards.

The activities do not all have to be implemented at local expense. Many communities can qualify for "uniform minimum credit" whereby a state or regional agency can apply for a CRS activity that it is implementing on behalf of its communities.

Communities can receive credit for retrofitting projects funded by the owners, regulatory programs administered by the state or a regional district, or similar projects or programs implemented by another agency or organization. What counts to the CRS is what happens in the community, not who does it.

Public information activities

This series credits programs that advise people about the flood hazard, flood insurance and ways to reduce flood damage. These activities also provide data needed by insurance agents for accurate flood insurance rating:

- 310 (Elevation Certificates) Maintain FEMA elevation certificates for new construction in the floodplain. Keeping certificates after the date of CRS application is required of all CRS communities.
- 320 (Map Information) Respond to inquiries about what FIRM zone a property is in and publicize this service.
- 330 (Outreach Projects) Send information about the flood hazard, flood insurance and flood protection measures to residents.

- 340 (Hazard Disclosure) Advise potential purchasers of floodprone property about the flood hazard or require a notice of the flood hazard.
- 350 (Flood Protection Library) The public library maintains references on flood insurance and flood protection.
- 360 (Flood Protection Assistance) Give inquiring property owners technical advice on how to protect their buildings from flooding and publicize this service.

Mapping and regulation activities

This series credits programs that provide increased protection to new development. The credit points for the activities in this series are increased for growing communities:

- 410 (Additional Flood Data) Develop new flood elevations, floodway delineations, wave heights or other regulatory flood hazard data for an area that was not mapped in detail by the flood insurance study; or have the flood insurance study based on a higher state or local standard.
- 420 (Open Space Preservation) Guarantee that currently vacant floodplain lands will be kept free from development; additional credit is given for areas still in, or restored to, their natural state.
- 430 (Higher Regulatory Standards) Require freeboard; require engineered foundations; require compensatory storage; zone the floodplain for minimum lot sizes of one acre or larger; have regulations to protect critical facilities, or have other standards for new construction that exceed the minimum NFIP requirements.
- 440 (Flood Data Maintenance) Keep flood and property data on computer records; use better base maps; or maintain elevation reference marks.
- 450 (Stormwater Management) Regulate new development throughout the watershed to ensure that post-development runoff is no worse than pre-development runoff and/or protects or improves water quality.

Flood damage reduction activities

This series credits programs for areas in which existing development is at risk. There is no CRS credit for new structural flood control measures because greater reductions in flood insurance rates are provided through the FIRM revision process.

- 510 (Floodplain Management Planning) Prepare, adopt and implement a comprehensive plan that addresses the community's flood problem, and evaluate and revise the plan annually.
- 520 (Acquisition and Relocation) Acquire and/or relocate floodprone buildings so that they are out of the floodplain.
- 530 (Retrofitting) Protect floodprone buildings through elevation, on-site barriers, or floodproofing.

- 540 (Drainage System Maintenance) Conduct periodic inspections of all channels and retention basins, and remove debris as needed. \

Flood preparedness activities

This series is oriented toward preparing for and responding to a flood due to natural causes, a levee failure or a dam breach. The community's emergency manager usually coordinates these activities:

- 610 (Flood Warning Program) Provide early flood warnings to the public and have a detailed flood response plan keyed to flood crest predictions.
- 620 (Levee Safety) Maintain levees that are not reflected on the FIRM as providing base flood protection.
- 630 (Dam Safety) All communities in a state with an approved dam safety program receive credit.

Publications

Even if you are not in the CRS, its publication series can be helpful. It includes the references on ordinance language and planning mentioned in other sections of this course. CRS publications are free. They can also be downloaded from the web site for the CRS Resource Center by clicking on the following link: <http://training.fema.gov/EMI/Web/CRS>

A CRS publications order form is on the next page. The key document for nonparticipating communities is the *CRS Application*. CRS and non-CRS communities are welcome to order any of the publications that will assist their floodplain management programs.



COMMUNITY RATING SYSTEM PUBLICATIONS

The following publications can be obtained free by folding and mailing this form (to the address on the back) or faxing it to (317) 848-3578. If you want more than one copy, call (317) 848-2898. All of the "General and Application" and "Specific Activities" publications are available for downloading from FEMA's website, <http://www.fema.gov>, or on an IBM-compatible compact disk.

_____ Check here if you would prefer a paper copy of individual documents instead of the CD.

General and Application

- _____ *CRS Coordinator's Manual*
- _____ *CRS Activity Worksheets*
- _____ *CRS Application*
- _____ *The National Flood Insurance Program's Community Rating System (color brochures)*
- _____ *CRS Record Keeping Guidance*

Specific Activities

- _____ *CRS Credit for Drainage System Maintenance*
- _____ *CRS Credit for Flood Warning Programs*
- _____ *CRS Credit for Outreach Projects*
- _____ *CRS Credit for Higher Regulatory Standards*
- _____ *CRS Credit for Stormwater Management*
- _____ *Example Plans*

Software

- _____ "Computerized Calculations for the Community Rating System" (IBM-compatible compact disk)
- _____ "Computerized Format for FEMA Elevation Certificates" (IBM-compatible compact disk)

Special Hazards

- _____ *CRS Credit for Management of Areas Subject to Uncertain Flow Path Hazards*
- _____ *CRS Credit for Management of Areas Adjacent to Closed Basin Lake Hazards*
- _____ *CRS Credit for Management of Ice Jam Hazards*
- _____ *CRS Credit for Management of Floodprone Areas Subject to Land Subsidence Hazards*
- _____ *CRS Credit for Protecting Coastal Dunes and Beaches*
- _____ *CRS Credit for Management of Mudflow Hazards*
- _____ *CRS Credit for Management of Coastal Erosion Hazards*
- _____ *CRS Credit for Management of Tsunami Hazards*

Please send these publications to (please specify a street address, not a post office box):

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Community Name: _____

HOW FLOOR ELEVATION AFFECTS INSURANCE RATES

Flood insurance consists of separate policies for building and contents. During the Emergency Phase of the NFIP, coverage is limited to \$35,000 on single family dwellings and \$100,000 on non-residential buildings. In the Regular Program, coverage limits are increased, and the coverage is divided into basic limits and additional limits. Basic limits are rated significantly higher.

➤ **Rate Tables that follow are from the Flood Insurance Manual, October, 2008.**

Emergency Program Rates

Elevation of structures does not affect flood insurance rates in the Emergency Program. As of October 1, 2008, the annual flood insurance rate on a residential building was \$0.76 per \$100 of coverage. However, once a community enters the Regular Program, a structure may be rerated at the option of the property owner. If the structure was elevated, it may qualify for a lower insurance rate using Post-FIRM rates discussed later.

REGULAR PROGRAM RATES

Pre-FIRM

Regular Program flood insurance rates are divided into Pre-FIRM and Post-FIRM categories. **Pre-FIRM** rates are essentially Emergency Program rates, but with additional coverage at a reduced rate. There is no rating based on elevation. The advantage of the Pre-FIRM rate is that it allows existing structures which are sited below the BFE to have reasonably low insurance rates.

Post-FIRM

Once the FIRM is published, all new and substantially improved construction must be **Post-FIRM** rated. The owner of a Pre-FIRM structure may wish to have his property Post-FIRM-rated or elevation-rated if the property owner can obtain a lower flood insurance rate. It is a good idea for a property owner of a Pre-FIRM structure to consult his insurance agent regarding the potential benefits of Post-FIRM or elevation rating.

Post-FIRM rates are based on the elevation of the lowest floor or first floor of the structure. As the following tables indicate, Post-FIRM rates are determined by one of the following:

1. Elevation of the lowest floor above or below the BFE
2. Elevation of the lowest floor above or below an estimated BFE, or
3. Elevation of the lowest floor above or below the highest adjacent grade.

RATING

This section contains information, including rate tables, required to accurately rate a flood insurance policy. Information and rates for the Preferred Risk Policy (PRP) and Residential Condominium Building Association Policy (RCBAP) are found in their respective sections.

The detailed drawings, and accompanying text and tables, in the Lowest Floor Guide section are to be used as a guide for identifying the lowest floor for rating buildings. This guide will assist in developing the proper rate for the building.

Examples of some rating situations are shown on pages RATE 49 through RATE 63.

A premium table for single family Pre-FIRM buildings located in Special Flood Hazard Areas (SFHAs) is located on page RATE 11. These premiums were calculated using Rate Table 2. This premium table is included in this manual to help the agent more easily quote premiums for buildings that do not require elevation certification.

I. AMOUNT OF INSURANCE AVAILABLE

| | EMERGENCY PROGRAM | REGULAR PROGRAM | | |
|--------------------------|-------------------|------------------------|-----------------------------|------------------------|
| | | Basic Insurance Limits | Additional Insurance Limits | Total Insurance Limits |
| BUILDING COVERAGE | | | | |
| Single Family Dwelling | \$ 35,000 * | \$ 50,000 | \$200,000 | \$250,000 |
| 2-4 Family Dwelling | \$ 35,000 * | \$ 50,000 | \$200,000 | \$250,000 |
| Other Residential | \$100,000** | \$150,000 | \$100,000 | \$250,000 |
| Non-Residential | \$100,000** | \$150,000 | \$350,000 | \$500,000 |
| CONTENTS COVERAGE | | | | |
| Residential | \$ 10,000 | \$ 20,000 | \$ 80,000 | \$100,000 |
| Non-Residential | \$100,000 | \$130,000 | \$370,000 | \$500,000 |

* In Alaska, Guam, Hawaii, and U.S. Virgin Islands, the amount available is \$50,000.

** In Alaska, Guam, Hawaii, and U.S. Virgin Islands, the amount available is \$150,000.

NOTE: For RCBAP, refer to CONDO Section for basic insurance limits and maximum coverage available.

II. RATE TABLES

Rate tables are provided for the Emergency Program and for the Regular Program according to Pre-FIRM, Post-FIRM, and zone classifications. Tables 1-5 show annual rates per

\$100 of coverage. Table 6 provides precalculated Pre-FIRM premiums for various coverage limits. See Table 7 for Federal Policy Fee and Probation Surcharge.

TABLE 1. EMERGENCY PROGRAM RATES
ANNUAL RATES PER \$100 OF COVERAGE
(Basic/Additional)

| | Building | Contents |
|-----------------|----------|----------|
| Residential | .76 | .96 |
| Non-Residential | .83 | 1.62 |

TABLE 2. REGULAR PROGRAM -- PRE-FIRM CONSTRUCTION RATES^{1, 2}
ANNUAL RATES PER \$100 OF COVERAGE
(Basic/Additional)

FIRM ZONES A, AE, A1-A30, AO, AH, D

| OCCUPANCY | | Single Family | | 2-4 Family | | Other Residential | | Non-Residential | |
|-------------------|---|---------------|-----------|------------|-----------|-------------------|-----------|-----------------|-------------|
| | | Building | Contents | Building | Contents | Building | Contents | Building | Contents |
| BUILDING TYPE | No Basement/Enclosure | .76 / .54 | .96 / 97 | .76 / .54 | | .76 / 1.12 | | .83 / 1.07 | |
| | With Basement | .81 / .79 | .96 / .81 | .81 / .79 | | .81 / .93 | | .88 / 1.05 | |
| | With Enclosure | .81 / .96 | .96 / .97 | .81 / .96 | | .81 / 1.18 | | .88 / 1.33 | |
| | Manufactured (Mobile) Home ³ | .76 / .54 | .96 / .97 | | | | | .83 / 1.07 | |
| CONTENTS LOCATION | Basement & Above | | | | .96 / .81 | | .96 / .81 | | 1.62 / 1.81 |
| | Enclosure & Above | | | | .96 / .97 | | .96 / .97 | | 1.62 / 2.17 |
| | Lowest Floor Only - Above Ground Level | | | | .96 / .97 | | .96 / .97 | | 1.62 / .95 |
| | Lowest Floor Above Ground Level and Higher Floors | | | | .96 / .67 | | .96 / .67 | | 1.62 / .81 |
| | Above Ground Level - More than One Full Floor | | | | .35 / .12 | | .35 / .12 | | .24 / .12 |
| | Manufactured (Mobile) Home ³ | | | | | | | | 1.62 / .95 |

FIRM ZONES V, VE, V1-V30

| OCCUPANCY | | Single Family | | 2-4 Family | | Other Residential | | Non-Residential | |
|-------------------|---|---------------|-------------|-------------|-------------|-------------------|-------------|-----------------|-------------|
| | | Building | Contents | Building | Contents | Building | Contents | Building | Contents |
| BUILDING TYPE | No Basement/Enclosure | .99 / 1.35 | 1.23 / 2.32 | .99 / 1.35 | | .99 / 2.50 | | 1.10 / 2.59 | |
| | With Basement | 1.06 / 2.02 | 1.23 / 1.95 | 1.06 / 2.02 | | 1.06 / 3.73 | | 1.16 / 3.86 | |
| | With Enclosure | 1.06 / 2.38 | 1.23 / 2.31 | 1.06 / 2.38 | | 1.06 / 4.17 | | 1.16 / 4.31 | |
| | Manufactured (Mobile) Home ³ | .99 / 6.11 | 1.23 / 2.31 | | | | | 1.10 / 10.49 | |
| CONTENTS LOCATION | Basement & Above | | | | 1.23 / 1.95 | | 1.23 / 1.95 | | 2.14 / 4.56 |
| | Enclosure & Above | | | | 1.23 / 2.31 | | 1.23 / 2.31 | | 2.14 / 4.92 |
| | Lowest Floor Only - Above Ground Level | | | | 1.23 / 2.31 | | 1.23 / 2.31 | | 2.14 / 4.13 |
| | Lowest Floor Above Ground Level and Higher Floors | | | | 1.23 / 2.03 | | 1.23 / 2.03 | | 2.14 / 3.56 |
| | Above Ground Level - More than One Full Floor | | | | .47 / .29 | | .47 / .29 | | .45 / .39 |
| | Manufactured (Mobile) Home ³ | | | | | | | | 2.14 / 9.80 |

FIRM ZONES A99, B, C, X

| OCCUPANCY | | Single Family | | 2-4 Family | | Other Residential | | Non-Residential | |
|-------------------|---|---------------|------------|------------|------------|-------------------|------------|-----------------|------------|
| | | Building | Contents | Building | Contents | Building | Contents | Building | Contents |
| BUILDING TYPE | No Basement/Enclosure | .78 / .21 | 1.20 / .37 | .78 / .21 | | .74 / .21 | | .74 / .21 | |
| | With Basement | .89 / .30 | 1.36 / .43 | .89 / .30 | | .95 / .30 | | .95 / .30 | |
| | With Enclosure | .89 / .34 | 1.36 / .49 | .89 / .34 | | .95 / .34 | | .95 / .34 | |
| | Manufactured (Mobile) Home ³ | .78 / .38 | 1.20 / .37 | | | | | .95 / .39 | |
| CONTENTS LOCATION | Basement & Above | | | | 1.53 / .56 | | 1.53 / .56 | | 1.58 / .61 |
| | Enclosure & Above | | | | 1.53 / .65 | | 1.53 / .65 | | 1.58 / .73 |
| | Lowest Floor Only - Above Ground Level | | | | 1.20 / .59 | | 1.20 / .59 | | .97 / .43 |
| | Lowest Floor Above Ground Level and Higher Floors | | | | 1.20 / .37 | | 1.20 / .37 | | .97 / .31 |
| | Above Ground Level - More than One Full Floor | | | | .35 / .12 | | .35 / .12 | | .22 / .12 |
| | Manufactured (Mobile) Home ³ | | | | | | | | .85 / .53 |

¹ Start of construction or substantial improvement on or before 12/31/74, or before the effective date of the initial Flood Insurance Rate Map (FIRM). If FIRM Zone is unknown, use rates for Zones A, AE, A1-A30, AO, AH, D.

² Pre-FIRM buildings with subgrade crawl spaces that are below the Base Flood Elevation (BFE) may use optional Post-FIRM elevation rating. Follow the procedures from the Specific Rating Guidelines for policy processing.

³ The definition of Manufactured (Mobile) Home includes travel trailers. See page APP 3.

TABLE 3A. REGULAR PROGRAM -- POST-FIRM CONSTRUCTION RATES
ANNUAL RATES PER \$100 OF COVERAGE
(Basic/Additional)

FIRM ZONES A99, B, C, X

| OCCUPANCY | | Single Family | | 2-4 Family | | Other Residential | | Non-Residential | |
|--------------------------|---|---------------|------------|------------|------------|-------------------|------------|-----------------|------------|
| | | Building | Contents | Building | Contents | Building | Contents | Building | Contents |
| BUILDING TYPE | No Basement/Enclosure | .78 / .21 | 1.20 / .37 | .78 / .21 | | .74 / .21 | | .74 / .21 | |
| | With Basement | .89 / .30 | 1.36 / .43 | .89 / .30 | | .95 / .30 | | .95 / .30 | |
| | With Enclosure | .89 / .34 | 1.36 / .49 | .89 / .34 | | .95 / .34 | | .95 / .34 | |
| | Manufactured (Mobile) Home ¹ | .78 / .38 | 1.20 / .37 | | | | | .95 / .39 | |
| CONTENTS LOCATION | Basement & Above | | | | 1.53 / .56 | | 1.53 / .56 | | 1.58 / .61 |
| | Enclosure & Above | | | | 1.53 / .65 | | 1.53 / .65 | | 1.58 / .73 |
| | Lowest Floor Only - Above Ground Level | | | | 1.20 / .59 | | 1.20 / .59 | | .97 / .43 |
| | Lowest Floor Above Ground Level and Higher Floors | | | | 1.20 / .37 | | 1.20 / .37 | | .97 / .31 |
| | Above Ground Level - More than One Full Floor | | | | .35 / .12 | | .35 / .12 | | .22 / .12 |
| | Manufactured (Mobile) Home ¹ | | | | | | | | .85 / .53 |

FIRM ZONE D

| OCCUPANCY | | Single Family | | 2-4 Family | | Other Residential | | Non-Residential | |
|--------------------------|---|---------------|------------|------------|------------|-------------------|------------|-----------------|------------|
| | | Building | Contents | Building | Contents | Building | Contents | Building | Contents |
| BUILDING TYPE | No Basement/Enclosure | 1.11 / .38 | 1.11 / .69 | 1.11 / .38 | | 1.20 / .69 | | 1.20 / .69 | |
| | With Basement | *** | *** | *** | | *** | | *** | |
| | With Enclosure | *** | *** | *** | | *** | | *** | |
| | Manufactured (Mobile) Home ¹ | 1.45 / .75 | 1.31 / .80 | | | | | 2.49 / .93 | |
| CONTENTS LOCATION | Basement & Above | | | | *** | | *** | | *** |
| | Enclosure & Above | | | | *** | | *** | | *** |
| | Lowest Floor Only - Above Ground Level | | | | 1.11 / .69 | | 1.11 / .69 | | 1.95 / .62 |
| | Lowest Floor Above Ground Level and Higher Floors | | | | 1.11 / .47 | | 1.11 / .47 | | 1.95 / .59 |
| | Above Ground Level - More than One Full Floor | | | | .35 / .12 | | .35 / .12 | | .24 / .12 |
| | Manufactured (Mobile) Home ¹ | | | | | | | | 1.95 / .62 |

FIRM ZONES AO, AH ("No Basement" Buildings Only)²

| OCCUPANCY | Building | | Contents | |
|---|------------|---------------------|-------------|-----------------|
| | 1-4 Family | Other Res & Non-Res | Residential | Non-Residential |
| With Certification of Compliance ³ | .28 / .08 | .23 / .08 | .37 / .13 | .23 / .13 |
| Without Certification of Compliance or Elevation Certificate ⁴ | .93 / .21 | 1.01 / .36 | 1.17 / .24 | 1.97 / .31 |

¹ The definition of Manufactured (Mobile) Home includes travel trailers. See page APP 3.

² Zones AO, AH Buildings With Basement/Enclosure: Submit for Rating

³ "With Certification of Compliance" rates are to be used when the Elevation Certificate shows that the lowest floor is equal to or greater than the community's elevation requirement.

⁴ "Without Certification of Compliance" rates are to be used only on Post-FIRM structures without an Elevation Certificate or when the Elevation Certificate shows that the lowest floor elevation of a Post-FIRM structure is less than the community's elevation requirement.

*** SUBMIT FOR RATING

TABLE 3B. REGULAR PROGRAM -- POST-FIRM CONSTRUCTION RATES
ANNUAL RATES PER \$100 OF COVERAGE
(Basic/Additional)

FIRM ZONES AE, A1-A30 -- BUILDING RATES

| Elevation of Lowest Floor Above or Below BFE ¹ | One Floor, No Basement/Encl | | More than One Floor, No Basement/Encl | | More than One Floor, With Basement/Encl | | Manufactured (Mobile) Home ² | |
|---|-----------------------------|-------------------------------------|---------------------------------------|-------------------------------------|---|-------------------------------------|---|-----------------|
| | 1-4 Family | Other Residential & Non-Residential | 1-4 Family | Other Residential & Non-Residential | 1-4 Family | Other Residential & Non-Residential | Single Family | Non-Residential |
| +4 | .24 / .08 | .20 / .08 | .24 / .08 | .20 / .08 | .24 / .08 | .20 / .08 | .24 / .08 | .20 / .08 |
| +3 | .24 / .08 | .20 / .08 | .24 / .08 | .20 / .08 | .24 / .08 | .20 / .08 | .25 / .08 | .22 / .08 |
| +2 | .39 / .08 | .26 / .08 | .25 / .08 | .20 / .08 | .25 / .08 | .20 / .08 | .43 / .08 | .34 / .08 |
| +1 | .74 / .08 | .47 / .10 | .48 / .08 | .30 / .08 | .32 / .08 | .26 / .08 | .88 / .09 | .72 / .08 |
| 0 | 1.44 / .11 | 1.33 / .20 | 1.05 / .10 | .81 / .15 | .75 / .09 | .61 / .16 | 2.25 / .11 | 1.83 / .09 |
| -1 ³ | 3.80 / 1.39 | 5.39 / 1.35 | 3.34 / 1.21 | 3.65 / .62 | 1.90 / .67 | 1.75 / .70 | *** | *** |
| -2 | *** | *** | *** | *** | *** | *** | *** | *** |

FIRM ZONES AE, A1-A30 -- CONTENTS RATES

| Elevation of Lowest Floor Above or Below BFE ¹ | Lowest Floor Only -- Above Ground Level (No Basement/Encl.) | | Lowest Floor Above Ground Level & Higher Floors (No Basement/Encl.) | | More than One Floor With Basement/Enclosure | | Manufactured (Mobile) Home ² | |
|---|---|-----------------|---|-----------------|---|-----------------|---|-----------------|
| | Residential | Non-Residential | Residential | Non-Residential | Residential | Non-Residential | Single Family | Non-Residential |
| +4 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 |
| +3 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 |
| +2 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .38 / .12 | .31 / .14 |
| +1 | .52 / .12 | .32 / .18 | .38 / .12 | .22 / .12 | .38 / .12 | .22 / .12 | .59 / .12 | .49 / .19 |
| 0 | 1.24 / .12 | .78 / .39 | .69 / .12 | .53 / .24 | .41 / .12 | .32 / .12 | 1.27 / .12 | 1.15 / .58 |
| -1 ³ | 3.74 / .75 | 2.41 / 1.10 | 2.11 / .58 | 1.61 / .70 | .60 / .14 | 1.06 / .14 | *** | *** |
| -2 | *** | *** | *** | *** | *** | *** | *** | *** |

FIRM ZONES AE, A1-A30 -- CONTENTS RATES

| Elevation of Lowest Floor Above or Below BFE ¹ | Above Ground Level More than One Full Floor | | | |
|---|---|------------|-------------------|-----------------|
| | Single Family | 2-4 Family | Other Residential | Non-Residential |
| +4 | | .35 / .12 | .35 / .12 | .22 / .12 |
| +3 | | .35 / .12 | .35 / .12 | .22 / .12 |
| +2 | | .35 / .12 | .35 / .12 | .22 / .12 |
| +1 | | .35 / .12 | .35 / .12 | .22 / .12 |
| 0 | | .35 / .12 | .35 / .12 | .22 / .12 |
| -1 | | .35 / .12 | .35 / .12 | .22 / .12 |
| -2 | | .35 / .12 | .37 / .12 | .24 / .12 |

¹ If Lowest Floor is -1 because of attached garage, submit application for special consideration. Rate may be lower.

² The definition of Manufactured (Mobile) Home includes travel trailers. See page APP 3.

³ Use Submit-for-Rate guidelines if the enclosure below the lowest elevated floor of an elevated building or if the crawl space (under-floor space) that has its interior floor within 2 feet below grade on all sides, which is used for rating, is 1 or more feet below BFE.

*** **SUBMIT FOR RATING**

**TABLE 3C. REGULAR PROGRAM -- POST-FIRM CONSTRUCTION RATES
ANNUAL RATES PER \$100 OF COVERAGE
(Basic/Additional)**

UNNUMBERED ZONE A -- WITHOUT BASEMENT/ENCLOSURE¹

| Elevation Difference to nearest foot | BUILDING RATES | | CONTENTS RATES | | TYPE OF ELEVATION CERTIFICATE |
|---------------------------------------|----------------|-------------------------|--------------------------|------------------------------|--|
| | Occupancy | | Occupancy | | |
| | 1-4 Family | Other & Non-Residential | Residential ² | Non-Residential ² | |
| +5 or more | .36 / .10 | .48 / .15 | .62 / .12 | .65 / .12 | NO ESTIMATED BASE FLOOD ELEVATION ³ |
| +2 to +4 | 1.09 / .13 | 1.00 / .20 | .87 / .17 | .98 / .23 | |
| +1 | 2.09 / .64 | 2.25 / .75 | 1.54 / .57 | 1.46 / .72 | |
| 0 or below | *** | *** | *** | *** | |
| +2 or more | .41 / .08 | .34 / .09 | .51 / .12 | .49 / .12 | WITH THE ESTIMATED BASE FLOOD ELEVATION ⁴ |
| 0 to +1 | 1.06 / .12 | .91 / .18 | .85 / .16 | .84 / .21 | |
| -1 | 3.48 / 1.30 | 4.41 / 1.02 | 2.71 / .70 | 2.20 / 1.02 | |
| -2 or below | *** | *** | *** | *** | |
| No Elevation Certificate ⁵ | 4.06 / 1.42 | 5.51 / 1.70 | 3.36 / 1.00 | 3.24 / 1.35 | No Elevation Certificate |

¹ Zone A building with basement (including crawl space below grade on all sides) or enclosure -- Submit for Rating.

² For elevation rated risks other than Single Family, when contents are located one floor or more above lowest floor used for rating -- use .35 / .12.

³ Elevation difference is the measured distance between the highest adjacent grade next to the building and the lowest floor of the building.

⁴ Elevation difference is the measured distance between the estimated BFE provided by the community or registered professional engineer, surveyor, or architect and the lowest floor of the building.

⁵ For building without basement or enclosure, Elevation Certificate is optional.

***** SUBMIT FOR RATING**

TABLE 3D. REGULAR PROGRAM -- POST-FIRM CONSTRUCTION RATES
ANNUAL RATES PER \$100 OF COVERAGE
(Basic/Additional)

FIRM ZONES '75-81, V1-V30, VE -- BUILDING RATES¹

| Elevation of Lowest Floor Above or Below BFE | One Floor, No Basement/Encl | | More than One Floor, No Basement/Encl | | More than One Floor, With Basement/Encl | | Manufactured (Mobile) Home ² | |
|--|-----------------------------|-------------------------------------|---------------------------------------|-------------------------------------|---|-------------------------------------|---|-----------------|
| | 1-4 Family | Other Residential & Non-Residential | 1-4 Family | Other Residential & Non-Residential | 1-4 Family | Other Residential & Non-Residential | Single Family | Non-Residential |
| 0 ³ | 2.53 / .46 | 3.07 / 1.19 | 2.05 / .46 | 2.22 / 1.11 | 1.78 / .46 | 1.99 / .90 | 3.80 / .38 | 5.43 / .34 |
| -1 ⁴ | 5.41 / 2.77 | 8.07 / 4.45 | 4.95 / 2.77 | 6.95 / 3.38 | 3.51 / 2.51 | 3.68 / 3.43 | *** | *** |
| -2 | *** | *** | *** | *** | *** | *** | *** | *** |

FIRM ZONES '75-81, V1-V30, VE -- CONTENTS RATES

| Elevation of Lowest Floor Above or Below BFE | Lowest Floor Only -- Above Ground Level (No Basement/Encl.) | | Lowest Floor Above Ground Level & Higher Floors (No Basement/Encl.) | | More than One Floor With Basement/Enclosure | | Manufactured (Mobile) Home ² | |
|--|---|-----------------|---|-----------------|---|-----------------|---|-----------------|
| | Residential | Non-Residential | Residential | Non-Residential | Residential | Non-Residential | Single Family | Non-Residential |
| 0 ³ | 3.93 / .55 | 3.47 / 2.54 | 2.55 / .61 | 2.42 / 1.52 | 1.44 / .55 | 1.44 / .55 | 3.78 / .61 | 3.94 / 3.25 |
| -1 ⁴ | 8.62 / 4.19 | 8.46 / 7.37 | 5.08 / 3.25 | 5.80 / 4.60 | 1.70 / .55 | 5.17 / .55 | *** | *** |
| -2 | *** | *** | *** | *** | *** | *** | *** | *** |

FIRM ZONES '75-81, V1-V30, VE -- CONTENTS RATES

| Elevation of Lowest Floor Above or Below BFE | Above Ground Level More than One Full Floor | | | |
|--|---|------------|-------------------|-----------------|
| | Single Family | 2-4 Family | Other Residential | Non-Residential |
| 0 ³ | | .55 / .25 | .55 / .25 | .42 / .25 |
| -1 ⁴ | | .55 / .25 | .55 / .25 | .42 / .25 |
| -2 | | .55 / .25 | .55 / .25 | .46 / .25 |

¹ Policies for 1975 through 1981 Post-FIRM and Pre-FIRM buildings in Zones VE and V1-V30 will be allowed to use the Post-'81 V Zone rate table if the rates are more favorable to the insured. See instructions on page RATE 23 for V Zone Optional Rating.

² The definition of Manufactured (Mobile) Home includes travel trailers. See page APP 3.

³ These rates are to be used if the lowest floor of the building is at or above BFE.

⁴ Use Submit-for-Rate guidelines if the enclosure below the lowest elevated floor of an elevated building, which is used for rating, is 1 or more feet below BFE.

*** SUBMIT FOR RATING

FIRM ZONES '75-'81, UNNUMBERED V ZONE

| |
|-------------------|
| SUBMIT FOR RATING |
|-------------------|

**TABLE 3E. REGULAR PROGRAM -- POST-FIRM CONSTRUCTION RATES
ANNUAL RATES PER \$100 OF COVERAGE**

1981 POST-FIRM V1-V30, VE ZONE RATES¹

| Elevation of the lowest floor above or below BFE adjusted for wave height ² | Elevated Buildings Free of Obstruction ³ | | | | |
|--|---|-----------------|---|--|---|
| | Contents | | Building | | |
| | Residential | Non-Residential | Replacement Cost Ratio .75 or More ⁴ | Replacement Cost Ratio .50 to .74 ⁴ | Replacement Cost Ratio Under .50 ⁴ |
| +4 or more | .38 | .38 | .62 | .83 | 1.26 |
| +3 | .38 | .38 | .75 | 1.01 | 1.52 |
| +2 | .55 | .59 | .97 | 1.30 | 1.95 |
| +1 | .96 | 1.03 | 1.41 | 1.88 | 2.63 |
| 0 | 1.47 | 1.58 | 1.81 | 2.42 | 3.40 |
| -1 | 2.13 | 2.19 | 2.40 | 3.16 | 4.11 |
| -2 | 2.96 | 3.12 | 3.15 | 4.13 | 5.27 |
| -3 | 4.06 | 4.31 | 4.06 | 5.43 | 6.88 |
| -4 or below | *** | *** | *** | *** | *** |

¹Policies for 1975 through 1981 Post-FIRM and Pre-FIRM buildings in Zones VE and V1-V30 will be allowed to use the Post-'81 V Zone rate table if the rates are more favorable to the insured. See instructions on page RATE 23 for V Zone Optional Rating.

²Wave height adjustment is not required in those cases where the Flood Insurance Rate Map indicates that the map includes wave height.

³Free 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.

Any of these systems must be designed and installed to collapse under stress 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 or equipment below the lowest elevated floor must be at or above the BFE.

⁴These percentages represent building replacement cost ratios, which are determined by dividing the amount of building coverage being purchased by the replacement cost. See pages RATE 20-21 for more details.

*** **SUBMIT FOR RATING**

**1981 POST-FIRM V1-V30, VE ZONE
Non-Elevated Buildings**

SUBMIT FOR RATING

1981 POST-FIRM UNNUMBERED V ZONE

SUBMIT FOR RATING

**TABLE 3F. REGULAR PROGRAM -- POST-FIRM CONSTRUCTION RATES
ANNUAL RATES PER \$100 OF COVERAGE**

1981 POST-FIRM V1-V30, VE ZONE RATES^{1,2}

| Elevation of the lowest floor above or below BFE adjusted for wave height ³ | Elevated Buildings With Obstruction ⁴ | | | | |
|--|--|-----------------|---|--|---|
| | Contents | | Building | | |
| | Residential | Non-Residential | Replacement Cost Ratio .75 or More ⁵ | Replacement Cost Ratio .50 to .74 ⁵ | Replacement Cost Ratio Under .50 ⁵ |
| +4 or more | .50 | .50 | 1.38 | 1.84 | 2.74 |
| +3 | .51 | .51 | 1.54 | 2.03 | 3.09 |
| +2 | .66 | .66 | 1.80 | 2.35 | 3.59 |
| +1 | 1.11 | 1.18 | 2.09 | 2.80 | 4.05 |
| 0 | 1.59 | 1.67 | 2.46 | 3.37 | 4.57 |
| -1 ⁶ | 2.19 | 2.32 | 2.93 | 3.89 | 5.23 |
| -2 ⁶ | 3.05 | 3.25 | 3.64 | 4.79 | 6.22 |
| -3 ⁶ | 4.16 | 4.42 | 4.69 | 6.10 | 7.85 |
| -4 or below ⁶ | *** | *** | *** | *** | *** |

¹ Policies for 1975 through 1981 Post-FIRM and Pre-FIRM buildings in Zones VE and V1-V30 will be allowed to use the Post-'81 V Zone rate table if the rates are more favorable to the insured. See instructions on page RATE 23 for V Zone Optional Rating.

² Rates provided are only for elevated buildings, except those elevated on solid perimeter foundation walls. For buildings elevated on solid perimeter foundation walls, and for non-elevated buildings, use the *Specific Rating Guidelines* document.

³ Wave height adjustment is not required in those cases where the Flood Insurance Rate Map indicates that the map includes wave height.

⁴ With Obstruction—The space below has an area of less than 300 square feet with breakaway solid walls or contains equipment below the BFE. If the space below has an area of 300 square feet or more, or if any portion of the space below the elevated floor is enclosed with non-breakaway walls, submit for rating. If the enclosure is at or above the BFE, use the "Free of Obstruction" rate table on the preceding page. The elevation of the bottom enclosure floor is the lowest floor for rating (LFE).

⁵ These percentages represent building replacement cost ratios, which are determined by dividing the amount of building coverage being purchased by the replacement cost. See pages RATE 20-21 for more details.

⁶ For buildings with obstruction, use Submit-for-Rate guidelines if the enclosure below the lowest elevated floor of an elevated building, which is used for rating, is 1 or more feet below BFE.

*** **SUBMIT FOR RATING**

1981 POST-FIRM UNNUMBERED V ZONE

| |
|-------------------|
| SUBMIT FOR RATING |
|-------------------|

COMPARISON OF FLOOD INSURANCE COSTS

It is important to remember that community officials, and the Local Floodplain Administrator in particular, can have a significant influence on the flood insurance cost for their citizens. Flood insurance costs can also make a difference in the ability to sell property and the price it returns.

The following examples are intended to both inform community officials regarding how flood insurance costs are determined. Floodplain Administrators may be able to make developers more conscious of the savings in flood insurance costs they can achieve by elevating structures to or beyond minimum floodplain management standards.

FLOOD INSURANCE EXAMPLES

Example 1

Determine the cost of flood insurance for a single family residence (no basement) under the **Emergency Program**. The house is valued at \$100,000, and contents at \$30,000.

Solution:

Flood insurance for a single family residence under the Emergency Program is capped at \$35,000 for dwelling and \$10,000 for contents. At \$0.76 per \$100 for building and \$0.96 per \$100 for contents, maximum coverage would cost \$362.00 per year. The house would be insured for \$35,000; contents would be insured for \$10,000.

Example 2

Suppose the community in which the above house was located was converted to the **Regular Program** by the adoption of a FIRM which replaced the FHBM. Since the house was present before the FIRM, it is Pre-FIRM.

This house has four options for determining flood insurance rates:

1. **Regular Program – Pre-FIRM Construction Rates** may be used without using the lowest floor elevation.

In this case, the flood insurance rates for the Emergency Program would be used for the basic limits (\$50,000 on building and \$15,000 on contents). For additional limits, building coverage would cost \$0.54 per \$100 and contents would cost \$0.97.

The calculations would be:

| | Basic | | Additional |
|----------------------|----------------------------|---|----------------------------|
| Building | \$380.00 (\$0.76 X 500) | | \$270.00 (\$0.54 X 500) |
| Contents | \$144.00 (\$0.96 X 150) | | \$145.50 (\$0.97 X 150) |
| TOTAL PREMIUM | \$524.00 | + | \$415.50 = \$939.50 |

Flood insurance rates may be lowered if the lowest floor is sufficiently elevated either above the BFE or above the highest adjacent grade to warrant a lower rate.

2. First, assume the same pre-FIRM house is located in a Zone AE or A1-30 on the new FIRM. Base flood elevations (BFEs) are shown on the FIRM and in the accompanying Flood Insurance Study (FIS) booklet. Assume a survey shows the lowest floor of the house is two (2) feet above the BFE.

Apply **Regular Program – Post-FIRM Constructions Rates**

The calculations are:

| | Basic | | Additional |
|----------------------|----------------------------|---|----------------------------|
| Building | \$195.00 (\$0.39 X 500) | | \$ 40.00 (\$0.08 X 500) |
| Contents | \$ 57.00 (\$0.38 X 150) | | \$ 18.00 (\$0.12 X 150) |
| TOTAL PREMIUM | \$252.00 | + | \$ 58.00 = \$310.00 |
| ***** | | | |

If a property owner is fortunate to have his house elevated well above the BFE, significant savings in flood insurance can be realized.

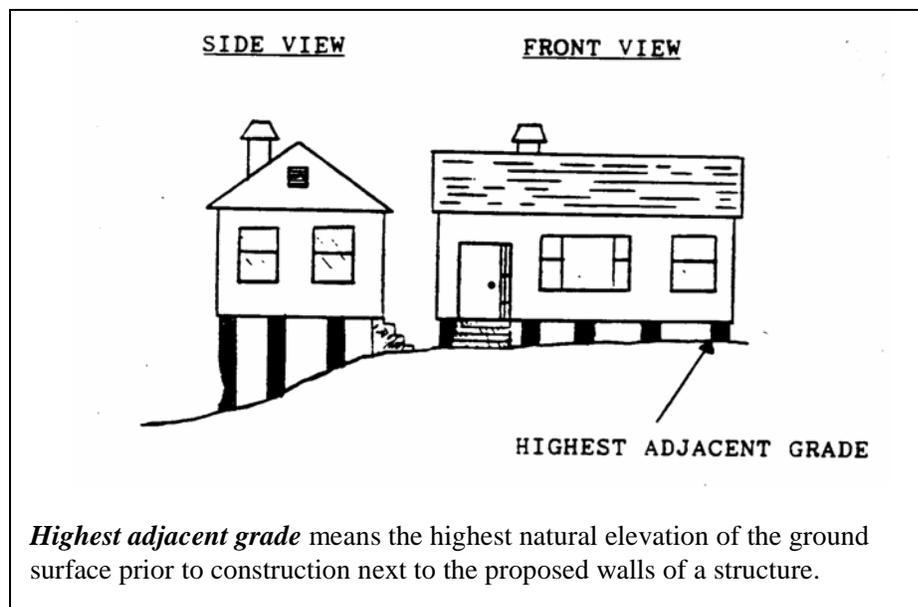
3. Now, consider the same house is located in the FIRM in “Zone A.” This is referred to as an “**Unnumbered A Zone.**” Suppose the property owner contacts a registered professional engineer, licensed surveyor or architect to **obtain an estimate of the BFE.** The Local **Floodplain Administer** may also furnish and estimate of the BFE.

Assume the lowest floor of the house is more than two (2) feet above the “estimated BFE.” The calculations for the flood insurance are as follows:

| | Basic | | Additional |
|----------------------|----------------------------|---|----------------------------|
| Building | \$205.00 (\$0.41 X 500) | | \$ 40.00 (\$0.08 X 500) |
| Contents | \$ 76.50 (\$0.51 X 150) | | \$ 18.00 (\$0.12 X 150) |
| TOTAL PREMIUM | \$281.50 | + | \$ 58.00 = \$339.50 |

The NFIP does not give as much credit for an “estimated BFE” as for a BFE which is the product of a fully engineered FIS. Nevertheless, the insurance savings are substantial.

- Falling short of an estimated BFE, the structure may realize large savings in flood insurance costs by simply elevating the structure. Consider the same house which is elevated between 2 and 4 feet above the **highest adjacent grade**.



The flood insurance cost is as follows:

| | Basic | | Additional |
|----------------------|----------------------------|---|----------------------------|
| Building | \$545.00 (\$1.09 X 500) | | \$ 65.00 (\$0.13 X 500) |
| Contents | \$130.50 (\$0.87 X 150) | | \$ 25.50 (\$0.17 X 150) |
| TOTAL PREMIUM | \$675.50 | + | \$ 90.50 = \$766.00 |

By elevating the lowest floor 5 feet or more above the **highest adjacent grade**, the Total Premium can be reduced to **\$310.00**.

The above examples illustrate how the cost of flood insurance can vary depending upon the flood zone, elevation, the phase of the NFIP, the date of construction, and the method of calculation. The cost could be substantially higher.

Flood insurance for a post-FIRM residence with \$100,000 coverage on the building and \$30,000 on contents, but with no elevation (slab-on-grade), is would be \$3,394.00

For example, suppose a builder constructed a house with the lowest floor **only one (1) foot below the BFE**. If the community is in the Regular Program, the structure would be Post-FIRM. Flood insurance for the same house, with \$100,000 building coverage and \$30,000 contents coverage would be \$3,277.50. If the lowest floor was more than one (1) foot below the BFE, the policy would have to be submitted for special – much higher – rating. **NOTE:** A house constructed with the lowest floor below the BFE in this situation would either be in violation of the community Flood Damage Prevention Ordinance or be constructed with a variance.

In these examples, the annual cost of flood insurance ranged from \$310.00 to \$3,394.00.

Multiply the flood insurance costs by 30 years and the differences are dramatic.

Since some rates change on an annual basis and there are additional fees, contact a licensed insurance agent for current rates and calculations.

CHAPTER 10

DISASTER OPERATIONS AND HAZARD MITIGATION

A. DISASTER OPERATIONS

After a disaster you can expect everyone to want you to respond quickly and efficiently, without regard to other priorities. You will have to take on emergency post-disaster responsibilities, often at the expense of not performing your normal duties.

In addition, you may, yourself, have suffered damage or loss. So, while you are at work helping others, you may not be getting the help you need yourself. Add to this the need to be available at least 12 hours a day, with few trained helpers.

There may be pressure from the public and elected officials to waive normal procedures and regulations in order to help people return to normal as fast as possible. This is sometimes done in spite of the fact that “back to normal” means people and buildings exposed to the type of flooding that may have caused the disaster in the first place.

In short, your residents and businesses are primarily concerned with getting back to normal. Your stress level is high, patience can be low, the environment is unfamiliar, and there is never enough time or money.

To help you prepare for this scenario, it is strongly recommended that your permit office prepare procedures that will ensure full and fair enforcement of your regulations during this time of stress, confusion and controversy.

EMERGENCY OPERATIONS

Remember, the emergency manager is responsible for disaster and emergency response activities, such as evacuation, rescue, sandbagging and coordination with the county, state and federal emergency management agencies. Once the disaster proves to be big enough, the emergency manager will open up the Emergency Operations Center (EOC).

You may have a role during the emergency. The permit office usually is expected to have a representative in the EOC during the disaster. While you work through this chapter, you should meet with the emergency manager to review what he or she expects you to do before, during and after the disaster.

At some time you will move from the emergency phase to the recovery phase. That is where this section picks up. You also should review with the emergency manager what your office needs to be doing to help your community recover, and at what point you and your staff are free to pursue the activities covered in this section.

BUILDING CONDITION SURVEY

A **building condition survey** is conducted to help the permit office manage time and resources most efficiently. The survey determines:

- If any building is so dangerous that it should not be reentered without a careful inspection.
- Which buildings will need a building permit before they can be repaired or reoccupied.

When possible, the building condition survey is done in conjunction with the emergency manager's initial damage assessment. If the area affected is relatively small, the survey may be skipped and the permit office can immediately begin inspecting damaged buildings.

High water marks

High water marks are very valuable records. They will help residents relate the last flood to the regulatory protection level. For example, if the flood was estimated to be two feet below the base flood, people can be told that if they were substantially damaged, they will have to elevate their homes at least two feet above the high water marks

High water marks are also important for recording the extent of the flood and adding to the hydrologic record. Someone, usually the community's engineer, should be responsible for obtaining readings from stream gauges and other high water marks as they are reported. Using these high water marks, the engineer should prepare a flood boundary map and estimate a flood recurrence interval.

Work maps

You should have work maps of the floodplain that show buildings, addresses and elevation contour lines. They should be sized for use during the survey. Made in advance of a disaster, they should be on letter or legal size paper for easy use in a vehicle.

Before the survey, you should review the work maps for the affected area(s) and, using the high water mark data, determine which areas are worst hit. This can be done by plotting known flood boundaries or matching high water marks to the elevation contour lines.

Any area where the flood crest was two feet or more above the buildings' adjacent grade should be outlined on the map and designated as the first priority for the building condition survey.

Conduct

The building condition survey is conducted from outside all buildings, usually from a vehicle. Depending on the severity and duration of flooding, the survey may be conducted concurrently with the emergency manager's initial damage assessment.

On your work maps, code each building with an "A," "B" or "C" for the three categories of building condition:

A - Apparently safe: No exterior signs of structural damage. People can be allowed back in, but they will need building permits for repairs.

B - Building obviously substantially damaged: The flood swept the building away, it has collapsed or it is missing one or more walls. The building cannot be reoccupied without major structural work.

C - Could be substantially damaged: The building may be substantially damaged, but such damage is not obvious. Any building with more than two feet of water over its first floor falls in this category.

When the field work is done, summarize the survey findings and plot them on a master mitigation map. Use color coding, so areas coded B and C - those that are or may be substantially damaged - will stand out.

Notice to owners

Upon completing the survey, hand-deliver a letter to each property surveyed, including those assessed as apparently safe. Each letter should include the building's address and, where known, the owner's name. A sample letter is in **Figure 10-1**.

Keep copies in the permit office and start a file on each property designated as "B - Building obviously substantially damaged" or "C - Could be substantially damaged."

With the letter include a copy of the FEMA/Red Cross book, **Repairing Your Flooded Home**. You can get supplies of them from FEMA or the Red Cross.

If too few copies are available, you may reproduce your own and even include your community's name on the cover. FEMA and the Red Cross encourage this, as it will make the book more pertinent to local readers.

Dear [Name]

The permit office conducted a windshield survey of flooded buildings in your neighborhood. A review of your building from the outside indicates that the structure was affected by the recent flood. Here are some things you should know:

1. Repairs to your building require a permit from the City's permit office. Before you remove, alter, or replace any of the following items, you MUST obtain a building permit: the roof, walls, siding, wallboard, plaster, insulation, paneling, cabinets, flooring, electrical system, plumbing, heating, or air conditioning.

2. The permit office will conduct a complimentary inspection of the damage to your building. This inspection will help you identify what needs to be repaired. It will also identify if a permit is needed and if your building could be substantially damaged. There is no cost for this inspection but it must be taken before you begin your repairs or reconstruction. We will contact you when we plan to do the inspection. If you have a preferred time, please call us to arrange an appointment.

3. You may proceed with clean up activities and temporary emergency repairs without a permit. These include:

- Removing and disposing of damaged contents, carpeting, wallboard, insulation, etc.
- Hosing, scrubbing, or cleaning floors, walls, ductwork, etc.
- Covering holes in roofs or walls and covering windows to prevent the weather from inflicting further damage.
- Removing sagging ceilings, shoring up broken foundations, and other actions to make the building safe to enter.

4. Some day in the future, your area will flood again. There are things you can do during repair and reconstruction to reduce damage from the next flood. Many of these are discussed in the attached book, *Repairing Your Flooded Home*. We'll be glad to talk to you about protecting your property from future flooding. If we receive a disaster declaration, there may be some financial assistance to help pay for making your property safer than it was before. In the meantime, read Step 8 in *Repairing Your Flooded Home* for some ideas.

5. In order to screen out possible opportunists from taking advantage of the current situation, any contracted work must be done by a firm licensed to work in the City. Furthermore, residents are cautioned and warned *not* to sign blank contracts, agree to have work performed without first seeing the contractor's registration card, or allow work or alterations not authorized by the City permit office.

For further information, please contact the permit office at _____.

Sincerely,

[Name], Director
Permit Office

Attachment: Repairing Your Flooded Home

Figure 10-1: Sample letter to flood damaged property owner.
(Reword for other types of disaster.)

PERMIT REQUIREMENTS

As soon as possible after the flood, you should contact your state NFIP coordinator and FEMA Regional Office to review reconstruction regulatory requirements and to see if there are any new guidance documents.

Permit required

A permit is needed for each building that will be repaired by removing, altering or replacing the roof, walls, siding, wallboard, plaster, insulation, paneling, cabinets, flooring, electrical system, plumbing, heating or air conditioning. These repair/reconstruction projects must meet your building code and flood protection ordinance.

The requirement for a permit cannot be waived, although your governing board may opt to waive permit fees. The board may not amend or ignore the NFIP substantial damage requirement.

Clean up and emergency repairs

You may allow cleanup and temporary emergency repairs to proceed without a permit. These include:

- Removing and disposing of damaged contents, carpeting, wallboard, insulation, etc.
- Hosing, scrubbing or cleaning floors, walls, ductwork, etc.
- Covering holes in roofs or walls and covering windows to prevent weather from inflicting further damage.
- Making the building safe to enter by removing sagging ceilings, shoring up broken foundations, and other actions.

You may want to identify which buildings may need emergency work and review with the owner the benefits of having professional contractors do some of it.

Structural alterations - such as removing floors or studs, or replacing a furnace - are not allowed without a permit.

Owners of potentially substantially damaged buildings should be advised against making major repairs unless the building presents a safety hazard, because their buildings may be purchased, modified and/or demolished later.

ENFORCEMENT

You took your first step in enforcing the repair permit requirement when you delivered the notices to property owners after the building condition survey and started a file on each property.

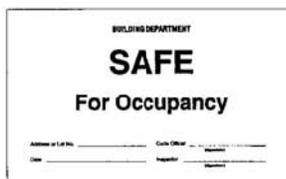
Initial inspection

As soon as possible after the notice is delivered, your office should inspect each flooded property to review needed repairs and determine if a permit is needed.

Use a checklist to make the inspection quick and consistent. A sample checklist is shown in **Figure 10-2**. Give a copy of the completed inspection to the property owner, along with safety, health and repair information.

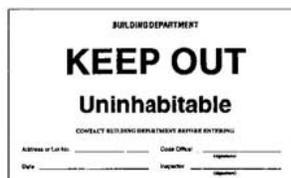
Posting

Upon completion of the inspection, you should post the appropriate sign on the front of the building so it is clearly visible from the street. Appropriate colored signs can be obtained in volume from the model code organizations. The ones shown here are from the **Building Officials and Code Administrators (BOCA)**.



If the building needs repairs that do not require a permit, post “Safe for Occupancy” and “Approved to Connect” (utilities) signs.

If a permit to make repairs is needed, post the “Habitable - Repairs Necessary” sign.



If it is not safe to clean up or work on the building without major structural repairs, post a “Keep Out - Uninhabitable” sign.

Only a representative of the permit office may remove or replace a sign after permits have been issued and repairs are made. The “safe for occupancy” signs may be removed by the owners in accordance with instructions issued by the community (for example, the permit office may want all signs posted until all inspections have been completed).

Property address: _____ Date: _____

Owner: _____ Phone: _____

Check the appropriate column. Column 1 items note that the damage is minor, column 2 items can be expensive to repair, and column 3 items are indicators of substantial damage. Do not count clean up costs or damage to contents (including plug-in appliances) and other items not part of the building's structure (detached structures, fences, sidewalks, swimming pools, etc.).

| 1 | 2 | 3 | General condition |
|-----|-----|-----|---|
| ___ | | | Building appears sound and safe to enter, needs minor work to make habitable |
| | ___ | | Apparently safe to enter, needs extensive cleaning/repairs |
| | | ___ | Foundation, floor, wall or ceiling damage such that building not safe to enter |
| | | | Depth of water |
| ___ | | | In crawlspace, <2" in unfinished basement, not in building |
| ___ | | | In unfinished basement, only affected contents and utilities |
| | ___ | | < 3' in finished basement or over first floor |
| | | ___ | ≥ 3' over first floor or in finished basement |
| | | | Foundation |
| | | | Type of foundation: ___ Slab ___ Basement/split level ___ Crawlspace |
| ___ | | | No signs of cracks or settling. |
| | ___ | | Cracks in basement or crawlspace walls |
| | | ___ | Buckling of slab or basement floor, broken crawlspace or basement wall |
| | | | Exterior |
| | | | Type of exterior walls: ___ Masonry ___ Wood/aluminum/vinyl siding |
| ___ | | | No signs of cracks or swelling, doors/windows stick but work |
| | ___ | | Some swelling or warping of walls, doors/windows may need to be replaced |
| | ___ | | Deck, porch, balcony damaged |
| | | ___ | Shifting of wall on foundation, wall broken |
| | | | Floors |
| ___ | | | Concrete/tile/bare wooden floors: no signs of damage |
| ___ | | | Tile/vinyl/linoleum coming loose, can be cleaned and reglued |
| | ___ | | Carpeting/vinyl/linoleum soaked, needs to be replaced |
| | | ___ | Wooden floor or subfloor warped, broken, or needs replacement |
| | | | Interior |
| ___ | | | Water did not reach any wallboard, paneling or insulation, doors stick but work |
| | ___ | | First four feet of wallboard, paneling or insulation must be replaced |
| | ___ | | All wallboard, paneling or insulation in the lowest floor must be replaced |
| | ___ | | Doors/molding/built-in bookcases swollen, warped, need to be replaced |
| | | ___ | Studs/walls broken, shifted |
| | | ___ | Ceiling sagging/collapsing |

Figure 10-2a. Sample checklist for initial inspection of a flooded building

| 1 | 2 | 3 | |
|--|-----|-----|---|
| | | | Heating & central air conditioning |
| | | | Type of system: ___ Forced air ___ Electric baseboard ___ Other: _____ |
| ___ | | | Water did not reach any electrical parts, gas jets, or ductwork |
| | ___ | | Ductwork needs to be disassembled and cleaned or replaced |
| | ___ | | Gas jets and/or electrical parts need to be cleaned or replaced |
| | ___ | | Propane/fuel tank needs to be reconnected and/or anchored |
| | | | Electrical |
| ___ | | | Water did not reach any outlets, switches, meters, or fuse or breaker boxes |
| | ___ | | Outlets, switches, breakers, lights or other fixtures need to be replaced |
| | ___ | | Meter or service box need to be repaired or replaced by a professional |
| | | | Plumbing |
| ___ | | | Drains and sewers need to be cleared |
| ___ | | | Sump pump needs to be repaired or replaced |
| | ___ | | Water heater needs to be replaced [need a permit or licensed plumber?] |
| | ___ | | Water softener needs to be replaced [need a permit or licensed plumber?] |
| | | | Kitchen and bath |
| ___ | | | Kitchen and bath(s) only need to be cleaned up |
| ___ | | | Built-in appliances, ovens, etc. need cleaning by a professional |
| | ___ | | Built-in appliances, ovens, etc. need to be replaced |
| | ___ | | Cabinets/counters warped or otherwise need to be replaced |
| | ___ | | Plumbing fixtures cracked, broken or need to be replaced |
| ___ | ___ | ___ | Number of checks in each column |
| | | | Completed by: _____ |
| <p>If all checks are in column 1, no building permit is needed. If there are any checks in columns 2 or 3, a building permit must be applied for and a repair/reconstruction estimate (prepared and signed by a licensed contractor) must be submitted.</p> <p>Except where professional cleaning is needed, any items checked in columns 1 or 2 can be performed by the owner.</p> <p>A licensed contractor may charge for the repair/reconstruction estimate, especially if the owner intends to do the work.</p> <p>Any item checked in column 3 and any alteration to the electrical or plumbing systems must be performed by a licensed contractor.</p> <p>The owner should read <i>Repairing Your Flooded Home</i>, page 15-29 for clean up and repair guidance and pages 39-41 for mitigation suggestions to incorporate into the repairs.</p> <p>For further information, please contact the Permit Office at _____.</p> | | | |

Figure 10-2b. Sample checklist for initial inspection of a flooded building

Follow up

Here are some things to help with enforcement:

- As you develop procedures, check with your utility companies and appropriate community utility departments. Advise them of your enforcement procedures.
- If not in place, establish a policy that utilities may not turn service back on unless there is an “Approved to Connect” sign posted on the building. This will help greatly in getting people to comply with the regulations after a disaster and prevent accidents.
- Instruct police and other departments about the permit requirements and ask them to report to you any construction projects under way without posted permit signs.
- Within a week of issuing the notices to the owners, visit the notified properties to ensure that the owners are abiding by the requirements.
- Keep a master list or map to track your survey, inspection and permit application findings.

Flooded buildings

Flooded buildings are harder to inspect than those damaged by other means. Much of the damage is hidden behind walls or under floors, so the owner may not recognize the long term effects of water, moisture and mold.

You should require that the wallboard/plaster and insulation be removed from a flooded building. Once the owner says the framing members are dry, conduct an inspection. Check the cleanliness and moisture content before allowing the walls to be recovered. If the studs are too wet, tell the owner to allow them to dry more before they are covered over.

The best way to measure the level of moisture in wood is with a moisture meter. You can get a moisture meter through woodworking specialty companies. It needs to have a probe that can be stuck into the wood.

If the wood's moisture content exceeds normal levels for your area of the country (usually 10% - 15%), it is too wet to be covered by paint or wallboard. Reinspect it later after it is allowed to dry some more. If the owner is anxious to rebuild, make sure he or she has a copy of *Repairing Your Flooded Home*. Step 4 of that book reviews how to speed up the drying process.

Contractor quality control

After a disaster, not-so-honest or unqualified contractors offer to help disaster victims, sometimes offering cut rates or special deals. Your community may want to control this by requiring that certain construction and reconstruction work be done by qualified and licensed people.

If you do license contractors, advise property owners of this requirement through the news media. You can also provide handouts on dealing with contractors and what to do in case of a dispute (for some good language, see Pages 41-43 in *Repairing Your Flooded Home*).

If you receive a sufficient number of complaints, you should relieve a contractor of his or her license to do business. You also can report bad contractors to state licensing agencies and/or the consumer protection division of the state attorney general's office.

Your work does not have to be a series of confrontations with contractors. They can be your best ally when telling a property owner why things have to be done a certain way. They also can help encourage property owners to retrofit and take additional steps to protect themselves from the next flood.

You may want to conduct workshops for contractors on flood repairs, mitigation measures, funding opportunities, etc.

ADMINISTRATION

Permit forms

If a permit is required, the property owner should be given the forms needed and told what repairs, if any, can proceed before the permit is issued. Keep these forms in the property's file:

- Notice to the owner (**Figure 10-1**).
- Initial inspection checklist (**Figure 10-2**).
- Permit application.
- Repair/reconstruction estimate.
- Substantial damage worksheets.
- Inspection records.
- FEMA Elevation or Floodproofing Certificate, if the building is required to be elevated or floodproofed.
- Certificate of occupancy.

Public information

Your community should tell residents about the regulatory requirements and the need to carefully clean and rebuild. You should issue news releases and/or distribute materials to advise property owners about:

- Activities that need a permit.
- Activities that do not need a permit (The language in Figure 10-1 could form the basis for a news release.)
- The substantial damage rule.
- The benefits of Increased Cost of Compliance flood insurance coverage (see Chapter 8, Section B).
- The need for licensed contractors, if required in your community.
- The information provided in steps 2, 3 and 4 in *Repairing Your Flooded Home*, such as taking pictures for insurance and disaster assistance claims before throwing things away, how to drain a basement without breaking the walls, and health and safety precautions.
- The need to include property protection measures as part of repairing homes or businesses. People need to recognize that “returning to normal” means returning to a building that is subject to another flood.

Technical assistance

Many technical issues can arise during post-disaster permit operations, but you have many sources of assistance:

- Call your state NFIP coordinator and FEMA Regional Office first. If there was a disaster declaration, they may be able to provide technical assistance staff or workshops to clarify things.
- Check with your state building code agency and the model building code organizations for publications and example forms for post-disaster operations.
- Ask your local or state health department for site-specific guidance on how to ensure that a building is fit for reoccupancy, well water is drinkable, etc.

Most states' Cooperative Extension Services have post-disaster materials and can provide advice on technical matters. They are usually located with your land grant university's agriculture school.

Some communities require that a contractor certify that a building has been properly cleaned. This should be allowed only if the contractor is qualified to do so.

Two organizations certify repair contractors. They can tell you who in your area are certified and what qualifications they have.

International Institute for Cleaning and Restoration Certification (IICRC)

2715 E. Mill Plain Blvd.
Vancouver, WA 98661
Phone: 360/693-5675

Association of Specialists in Cleaning and Restoration (ASCR)

10830 Annapolis Junction Road
Suite 312
Annapolis Junction, MD 20701
Phone: 301/604-4411

Staff assistance

If the disaster affected many properties, you likely will need more people to perform survey and inspection work. Staff assistance can come from:

- A mutual aid agreement with neighboring communities. There may already be some agreements with neighbors on sharing staff from other offices. If you don't have any, work with your emergency manager on procedures and agreement language.
- Other communities willing to offer help; check with your state NFIP coordinator.
- The building officials association, which may know of members available to help.

If there was a disaster declaration, check with your emergency manager. You may be able to get temporary hires, with part of the cost reimbursed through disaster assistance.

Disaster assistance may also reimburse your community for inspectors to conduct habitability inspections and to determine if buildings are substantially damaged.

B. HAZARD MITIGATION

While this course has focused on regulations directed toward new construction in the floodplain, many communities are more concerned about existing flood problems. This section tackles the bigger issue - reducing flood losses and making sure other activities don't make things worse.

Many communities deal with flooding with only one or two activities. Every community in the NFIP regulates new development to make sure things do not get worse. Many communities tackle their local drainage problems with storm sewer or drainage construction projects. Communities in high hazard areas usually have flood warning and evacuation programs.

However, many communities do not realize how many other flood protection activities they could implement. Nor do they know of all the other federal, state, local and private agencies or organizations that can help them with a flood problem.

While flooding cannot always be stopped - and in many cases, should not be prevented - flood hazards can be reduced. As their definitions attest, the words "hazard mitigation" mean taking measures that minimize or reduce the impacts of flooding on human development.

MITIGATION MEASURES

For the purposes of this course, ***flood hazard mitigation*** is defined as all actions that can be taken to reduce property damage and the threat to life and public health from flooding."

"All" is the critical word. Each community should consider *all* possible measures for mitigating flood hazards, and each community should seek support from as many programs and agencies as possible.

Each mitigation measure is appropriate in different situations. Structural flood control projects can be the most efficient way to protect an existing critical facility or a concentration of damage-prone buildings. But in developing areas, regulations and acquisition make more sense, as they are inexpensive ways to prevent creation of flood problems.

"All actions" is an all-encompassing definition. To make "all actions" more manageable, flood hazard mitigation measures can be categorized under six basic strategies.

Prevention

Preventive measures are designed to keep the problem from occurring or getting worse. They ensure that future development does not increase flood damage. Preventive measures are usually administered by building, zoning, planning and/or code enforcement offices. They include:

- Planning and zoning.
- Open space preservation.
- Floodplain development regulations.
- Stormwater management.
- Drainage system maintenance.
- Dune and beach maintenance.

Property protection

Property protection measures are used to modify buildings subject to flood damage rather than to keep floodwaters away. Your community may find these to be inexpensive measures because often they are implemented by or cost-shared with property owners.

Many of the measures do not affect a building's appearance or use, making them particularly appropriate for historical sites and landmarks. These measures include:

- Acquisition.
- Relocation.
- Building elevation.
- Floodproofing.
- Sewer backup protection.
- Insurance.

Natural resource protection

Water quality and natural habitats may be improved, and flood losses reduced, by preserving or restoring natural areas or the natural functions of floodplain and watershed areas.

These activities usually are implemented by environmental or code enforcement agencies. In addition to these measures, zoning or preserving open space also can protect natural resources.

- Wetland protection
- Erosion and sediment control
- “Best management practices” for stormwater runoff

Emergency services

Emergency services measures protect people during and after a flood. Most counties and many cities have emergency management offices to coordinate warning, response and recovery during a disaster. Emergency services measures include:

- Flood warning.
- Flood response.
- Critical facilities protection.
- Health and safety maintenance.

Structural projects

Structural flood control projects are used to prevent floodwaters from reaching properties. These measures are “structural” because they involve construction of man-made structures to control water flows. There are six common types of projects:

- Reservoirs.
- Levees/floodwalls/seawalls.
- Channel modifications.
- Enlarging culverts or bridge openings.
- Diversions.
- Storm sewers.
- Beach nourishment.

Structural projects can be very expensive. Their other shortcomings include:

- Disturbing the land and disrupting natural water flows, often destroying habitats.
- Requiring regular maintenance, which if neglected can have disastrous consequences.
- Being built to a flood protection level that larger floods can exceed, causing extensive damage.
- Creating a false sense of security, as people protected by a project often believe that no flood will ever reach them.

Public information

Public information activities advise property owners, potential property owners and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of floodplains.

Usually implemented by a public information office, they can include:

- Map information.
- Outreach projects.
- Real estate disclosure.
- Library.
- Technical assistance.
- Environmental education.

MITIGATION PLANNING

Different departments in a community may implement activities that are not coordinated or that may even conflict with one another. Some examples:

- The street P habitat.

Benefits of planning

Floodplain residents and property owners are not always aware of things that are being done to protect them from flooding, nor are they aware of things they can do to protect themselves, or how they can contribute to community efforts. Developing a flood hazard mitigation plan is one of the best ways to correct these shortcomings.

The objective of planning is to produce a program of activities that will best tackle the community's flood problem and meet other community needs. A well-prepared plan will:

- Ensure that all possible activities are reviewed and implemented so that the most appropriate and efficient solutions are used to address the local flood problem.
- Link floodplain management policies to specific activities.
- Ensure that activities are coordinated with each other and with other community goals, objectives and activities, preventing conflicts and reducing the costs of implementing individual activities.
- Educate residents about the flood hazard, flood loss reduction measures, and the natural and beneficial functions of floodplains.

- Build public and political support for projects that prevent new flood problems, reduce flood losses and protect the natural and beneficial functions of floodplains.
- Fulfill planning requirements for state or federal assistance programs.
- Facilitate implementation of floodplain management activities through an action plan that has specific tasks, staff assignments and deadlines.

A well-prepared plan will guide your community's flood, stormwater and related activities so that they are implemented more economically and in ways more attuned to the needs and objectives of your community and its residents.

A well-prepared plan also will reduce flood losses and improve protection of the floodplain's natural and beneficial functions, to the benefit of both your community and the NFIP.

The planning process

The planning process includes getting input from everyone who has relevant information, everyone who is affected by flooding and everyone who will participate in implementing the plan. It works for all types of plans, such as those for land use plans, capital improvement, neighborhood redevelopment and hazard mitigation.

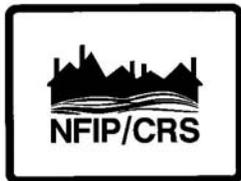
A hazard mitigation plan can take many forms, using a variety of formats and organizational styles. The format and organization of a plan is not what is important.

Dwight D. Eisenhower said, "Plans are worthless. Planning is essential." This simple phrase says it all: The paper document is not as important as the *process* of planning. Because each community is different, each floodplain management plan will be different. However, the process they follow should be similar.

FEMA recommends a 10-step planning process, summarized in **Figure 10-3**. This process provides a framework with which local officials, residents, engineers, technical experts and others can work out the details and reach agreement on what should be done to mitigate the flood hazard.

1. Organize to prepare the plan.
2. Involve the public.
3. Coordinate with other agencies.
4. Assess the hazard.
5. Assess the problem.
6. Set goals.
7. Review possible activities.
8. Draft an action plan.
9. Adopt the plan.
10. Implement, evaluate and revise.

Figure 10-3. The 10-step mitigation planning process



The 10-step planning process is credited under the Community Rating System, Activity 510 Floodplain Management Planning, in the *CRS Coordinator's Manual* and the *CRS Application*. It is explained in more detail in *Example Plans*. Plans developed according to this process are a prerequisite for funding under other FEMA programs (see Section C in this chapter).

DISASTER MITIGATION ACT OF 2000 PLANNING REQUIREMENTS

The **Disaster Mitigation Act of 2000** modified the **Robert T. Stafford Disaster Relief and Emergency Management Act** to establish new mitigation planning requirements. The Act continues the requirement for a State Hazard Mitigation Plan as a condition of disaster assistance and provides for States to receive increased **Hazard Mitigation Program Grant (HMGP)** funding if they have in effect a FEMA-approved Enhanced State Mitigation Plan. More importantly for communities, the Act establishes new local mitigation planning requirements. After November 1, 2004 communities must have a FEMA-approved mitigation plan in place in they want to receive HMGP funding or funding for projects under the new **Pre-Disaster Mitigation Program**. See the FEMA website or contact you State Emergency Management Agency or FEMA Regional Office for further information on this requirement.

MULTI-OBJECTIVE MANAGEMENT

Because water does not respect property lines or city limits, solutions to your community's flood problem will involve not just people who suffered damage most recently, but also the neighborhood, your community and even the rest of the watershed.

A single-minded approach will not lead to a solution to a flood problem. Other interests are out there, and if everyone focuses only on his or her own concerns, everyone will simply compete - and no one wins.

On the other hand, there is a proven approach to reduce flood losses and simultaneously address other community concerns. Called multi-objective management or M-O-M, it succeeds because using it builds alliances among interest groups.

M-O-M uses existing financial and other resources to look at the whole watershed affecting the flooding problem. In the end, your community will have coordinated flood loss reduction with reaching some of its other goals and needs. By using M-O-M, solutions to flooding will be more effective, more sensitive to the environment, have broader support, be part of a more comprehensive program and accomplish more than one objective.

M-O-M guidelines

There is nothing magical about multi-objective management. The idea is to bring together everyone with a concern or problem that has the potential to affect or be affected by the flood problem. It requires communication among groups, and it capitalizes on the help government agencies and private organizations offer.

Multi-objective management has six guidelines:

- 1. Keep the effort locally based.** Solutions must be acceptable to residents, their neighbors and others in the area. They must fit in with other local concerns and goals.
- 2. Understand the flood problem and its relation to the watershed.** The problem is not isolated; neither is it limited to one stream or one neighborhood. If people think in terms of the whole watershed, they will come up with more possible solutions - and the solutions will not cause problems for someone else.
- 3. Think broadly about possible solutions to reduce the flood problem.** There are more ways to do things than conventional wisdom may suggest. Don't get locked into wanting a floodwall or other single-purpose project without first checking out alternatives.
- 4. Identify the other community concerns and goals that could have a bearing on the flood problem.** People who are interested in those other concerns should meet and brainstorm possible solutions that can reach more than one of their objectives.
- 5. Obtain expert advice and assistance from government agencies and private organizations.** Planners should find out what financial assistance and advice are available. They should not put all their eggs in one basket and wait for that big "cure-all" project that may never be funded; there are literally hundreds of programs out there.
- 6. Build a partnership among the private and public groups and individuals that can be enlisted to work on the objectives.** More minds and hands mean that better ideas will result, people will be more likely to follow through, and more people will be available to do the work.

Using the systematic 10-step process will help greatly in developing a mitigation plan that coordinates and includes the other community objectives and interests. Preparing a written plan helps keep people get organized, clarifies solutions and formalizes everyone's participation.

Benefits

If you have a flood problem, you may ask, "Why bother with this M-O-M stuff? Why not just stop the flooding?"

This is not as easy as it sounds, especially if you are on a large river.

Structures to "stop" or control floods can be expensive to build and maintain; take a long time to plan, fund, and build; and can cost more than the value of the property they would protect. They may adversely affect other properties, the environment and other people's plans for the area. As shown by the Great Flood of 1993, they don't always work, especially if a flood is larger than anticipated.

If you have only one objective - "stop the flooding" - you may spend a lot of time and money on your one problem, in the process creating problems for other people. You will be competing with other communities that want funds for expensive structural projects. You will even be competing with others in your community who have different goals in mind.

The M-O-M approach helps you take charge of your future by looking at all the things your community needs and seeing how they can be combined with possible ways to reduce flood losses. Your eggs are not all in one basket, you are less dependent on outside agencies, and you have more sources of funding and technical advice.

With M-O-M, you join forces with other people who are just as devoted to their goals - be they parks and recreation, economic development, tourism or environmental education. You can all reach your objectives in a cheaper, faster and less disruptive manner by using M-O-M, and get more permanent, less expensive flood loss reduction than by trying to control the natural forces that cause floods.

One reason M-O-M gets such good results is that by using it, you treat the river's floodplain and its watershed as a resource. The floodplain need not be just a place with a flood hazard; it is also an area that is important to your community and to plant and animal life.

The M-O-M process makes sure that flood projects don't undermine other community objectives and the need to protect the natural environment.

For more information on M-O-M, see [Using Multi-Objective Management to Reduce Flood Losses in Your Watershed](#).

Kampsville, Illinois

Kampsville, Illinois, is a town of 400 residents on the Illinois River. Its residents could have continued to endure flooding, wait for a flood control project that would not be built, or look for alternative ways to reduce flood losses. They chose the third option, and it paid off during the 1993 flood.

After Kampsville was flooded in 1979 and again in 1982, residents and local officials decided to do something. They knew they would not stop the Illinois River from flooding, and that to build a large enough levee would require removing many of the buildings they wanted to protect. So they began a systematic planning process to review alternative ways to reduce flood losses.

One of the first things they did was ask for help. The Illinois Department of Natural Resources provided staff support, and during a series of planning meetings, other agencies were invited to explain their ideas and tell how they could help.

It became apparent that the best solution was to purchase and relocate the worst-hit buildings. Because this would leave the town with a large open area, folks started talking about what they would do with it.

They also were concerned that they would lose some businesses when the floodprone properties were bought out. During this process, they realized that they had to think about more than just flooding; they had to consider the future of their town and its economic base. They expanded their planning process to encompass other goals, including redeveloping the acquired area, designing a park and building a base for tourism.

Taking the plan to various funding sources, Kampsville eventually received more than \$1 million to buy 50 properties and convert flooded and dilapidated buildings to open space. The money was used also to elevate some buildings that were not flooded very deeply, to floodproof the water treatment plant and to relocate the fire station. A new ferry landing and all-weather access into town were also built.

Pursuing its other objectives, the village started sponsoring recreation activities, including an annual celebration that brings in hundreds of people. They now view the riverfront as a resource, not a problem area.

In all, financial assistance was provided by three state agencies, two federal agencies and the town's largest employer. Although it took almost 10 years to plan, fund and complete, Kampsville's approach paid off during the 1993 Midwest flood. The town suffered some damage because floodwaters exceeded the base flood elevation, but Kampsville did not make the news because its damage was relatively minor compared to that of its neighbors.

Figure 10-4. A M-O-M example

C. MITIGATION ASSISTANCE PROGRAMS

A variety of federal, state, local and private sources offer assistance in mitigation activities. Help is limited only by your community's imagination.

This section reviews the more common programs.

Technical Assistance

Help with mitigation planning may be available from a local, regional or state planning agency or a private organization. For example, the National Park Service's Rivers, Trails and Conservation Assistance Program provides staff support for local planning under certain conditions. If they can't help with the whole thing, they may be able to help with some tricky parts, like providing a facilitator for an all-day community input workshop.

Another source of assistance is a private consultant. Planning and engineering firms usually have personnel skilled in the various flood loss reduction measures and the planning process.

These flood-related agencies and organizations may help in providing technical assistance or in implementing mitigation activities that benefit your community:

- The soil and water conservation district.
- Agencies of the U.S. Department of Agriculture that work with watershed property owners, such as the Natural Resources Conservation and Cooperative Extension services.
- Watershed, stormwater management or flood control districts.
- Regional or metropolitan water, sewer or sanitary districts.
- The state or county emergency management or civil defense agency.
- The state natural resources or water resources agency.
- Local watershed councils or associations.
- The district office of the U.S. Army Corps of Engineers.

More references and contacts in floodplain management agencies and programs can be obtained through your state NFIP coordinator (see Appendix B), the Association of State Floodplain Managers ((608) 274-0123) and the Floodplain Management Resource Center ((303) 492-6818).

An excellent source of information is the *M.O.M. Resource Directory* prepared jointly by FEMA and the National Park Service. A computer program that lists more than 300 government and private programs, the Windows-based software is easy to install and use.

It is available free from:

Rivers, Trails and Conservation Assistance

National Park Service

P.O. Box 25287 IMFA-RM-S

Denver, CO 80225-0287

Phone: (303) 969-2781

Fax: 303-987-6676

Assistance on wetlands issues can be obtained by calling the USEPA Wetlands Information Hotline at (800) 832-7828.

PROPERTY OWNERS

Many times, a community does not have to look beyond the beneficiaries of hazard mitigation to find help for a mitigation activity.

For an activity that directly affects a property, such as a retrofitting project, the owner should be asked to chip in. One example is using the owner's insurance claim to help pay for a project related to repairing a damaged building. The Increased Cost of Compliance coverage in the flood insurance policy was specifically created for mitigation purposes. It is discussed in more detail in Chapter 8, Section B.

Owners who recognize that they have a real flood problem are willing to pay a large part of the cost. In one project in Denham Springs, Louisiana, homeowners paid up to \$40,000 as the 50/50 match to elevate their homes above flood levels. In the Chicago area, some communities found that a rebate for as little as 20 percent or 25 percent of the total project cost can be a real motivator to get property owners to implement retrofitting projects. Over 400 projects have been implemented with the owners paying the bulk of the cost.

For more information on these and other local funding sources, see the Corps of Engineers' ***Local Flood Proofing Programs***.

FLOOD MITIGATION ASSISTANCE PROGRAM

The **National Flood Insurance Reform Act of 1994** authorized FEMA to provide grants to states and communities for planning assistance and for mitigation projects that reduce the risk of flood damage to structures covered by flood insurance. The overall goal of the **Flood Mitigation Assistance (FMA)** program is to fund cost-effective measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes and other insurable structures.

FMA will pay 75 percent of the cost of these measures under its planning grants, project grants and technical assistance grants. Each state receives annual funding for planning and project grants. States distribute the planning grants at their discretion, in accordance with each grant's limitations. All funding applications must go through the state to be accepted by FEMA.

Technical assistance grants are given to state agencies that provide assistance to communities, so only the other two funding sources are covered here.

Planning grants

The purpose of a planning grant is to develop or update a **Flood Mitigation Plan**. To be eligible for an FMA project grant, an eligible applicant must develop, and have approved by the FEMA regional director, a Flood Mitigation Plan which "will articulate a comprehensive strategy for implementing technically feasible flood mitigation activities for the area affected by the plan."

The regulations note that "existing plans, such as those credited through the Community Rating System ... may meet the requirements of FMA with few or no modifications."

At a minimum, plans must include these elements, all of which are part of the 10-step hazard mitigation planning process that was discussed in the previous section:

- A description of the planning process and public involvement, which may include workshops, public meetings or public hearings.
- A description of the existing flood hazard and identification of the flood risk, including estimates of the number and type of structures at risk, repetitive loss properties and the extent of flood depth and damage potential.
- The applicant's floodplain management goals for the area covered by the plan.
- Identification and evaluation of cost-effective and technically feasible mitigation actions that were considered.
- Presentation of the strategy for reducing flood risks and continued compliance with the NFIP, and procedures for ensuring implementation, reviewing progress and recommending revisions to the plan.

- Documentation of formal plan adoption by the legal entity submitting the plan.

Project grants

The following types of projects are eligible for funding through FMA, providing they meet all other eligibility criteria:

- Acquisition of insured structures and underlying real property in fee simple and easements restricting real property to open space uses.
- Relocation of insured structures from acquired or restricted real property to nonhazard-prone sites.
- Demolition and removal of insured structures from acquired or restricted real property.
- Elevation of insured residential structures in accordance with NFIP standards.
- Elevation or dry floodproofing of insured nonresidential structures in accordance with NFIP standards.
- Other activities that bring an insured structure into compliance with the NFIP's floodplain management requirements.
- Minor physical flood mitigation projects that reduce localized flooding problems and do not duplicate the flood prevention activities of other Federal agencies.
- Beach nourishment activities.

To be eligible a project grant, a project must be:

- In conformance with the Flood Mitigation Plan. The type of project being proposed must be identified in the plan.
- Cost-effective, not costing more than the anticipated value of the reduction in both direct damages and subsequent negative impacts to the area if future floods were to occur. Both costs and benefits are computed using net-present value.
- In conformance with federal regulations on floodplain management, protection of wetlands, seismic safety and applicable environmental laws and regulations.
- Technically feasible.
- In conformance with the minimum standards of the NFIP.
- Located physically in a participating NFIP community that is not on probation or must benefit such community directly by reducing future flood damage.

PRE-DISASTER MITIGATION PROGRAM

The **Pre-Disaster Mitigation (PDM) Program** was authorized by Section 203 of the Robert T. Stafford Disaster Assistance and Emergency Relief Act. Beginning in Fiscal Year 2003 Congress appropriated funds for the Pre-Disaster Mitigation Program to fund mitigation plans and projects by States and communities. Currently the program is funded at approximately \$150 million per year. PDM funds are made available to States and communities through a national competition. There is a 75% Federal cost-share. Although funding is available for mitigation plans and projects that address all hazards, it is expected that a significant portion of the funding will be for projects that reduce flood damages. The latest information on how to apply for these funds and on the criteria that will be used to rank projects can be found on FEMA's website at <http://fema.gov/fima/pdm>.

DISASTER ASSISTANCE

If your community is hit by a disaster and the area subsequently receives a presidential disaster declaration, a variety of programs can provide mitigation assistance. Most of them are authorized by the **Robert T. Stafford Disaster Relief and Emergency Act**, known as the **Stafford Act**.

First, a disaster field office will be established under the guidance of a state coordinating officer and a federal coordinating officer. They will be supported by mitigation staff, directed by a deputy federal coordinating officer for mitigation and a state hazard mitigation officer.

Two types of help will be provided: technical assistance and financial assistance. The federal-state team will distribute up-to-date materials about these programs; this section provides a brief overview of them. Note that they may be slightly different when implemented in your area in the future.

Technical assistance

The disaster assistance staff should be able to spend time with your community's mitigation planners. They can review mitigation measures, techniques and funding sources.

One of their prime concerns will be proper regulation during reconstruction (see Section A of this chapter). They can help analyze damage to identify areas prime for acquisition and clearance and help develop mitigation plans.

The disaster team may also provide technical assistance to property owners. Information on repairing and retrofitting is given through public meetings, handouts and news releases. Sometimes mitigation tables are set up in disaster service centers, or separate Reconstruction Information Centers are opened. They house architects, engineers and other specialists who can work closely with owners to help design appropriate flood protection measures.

Financial assistance

FEMA will widely publicize the assistance programs that are made available after a disaster declaration. Three main types of assistance are available, each of which can fund mitigation measures:

1. Public/Infrastructure Assistance, formerly known as the **Public Assistance Program**, it can provide 75 percent of the cost of repairing or restoring facilities owned by public agencies and certain private nonprofit organizations. If an applicant prefers to relocate a facility out of the floodplain rather than replace it, FEMA will still provide funds, but at a reduced share.

FEMA takes the first step in obtaining Public/Infrastructure Assistance funding by completing a Damage Survey Report (DSR) for each facility. The community should have a representative on each DSR team to provide local input into the repair or replacement design for damaged facilities.

The local DSR representative should be aware that this program provides an opportunity to incorporate hazard mitigation features while replacing some damaged property. FEMA can provide funding above and beyond the cost of repairing or replacing a public facility, if it can be demonstrated that the proposed mitigation measure is technically feasible, cost-effective and required by a state or local regulation.

Mitigation Example: A flood washes out a culvert that used to back up every time there was a 2-inch rain. FEMA and the state will estimate the cost to repair or replace it as it was. If someone points out that (1) a larger culvert can save more money than it costs by reducing flood damage to other properties and (2) floodplain regulations prohibit obstructions in the floodway, then FEMA may share the expense of replacing the lost culvert with a larger one.

Similarly, funds from this program can be used to protect or relocate damaged water and sewer lines, floodproof pumping stations or replace bridges with clear spans.

Insurance note: Public/Infrastructure Assistance grants for public buildings are subject to a “deductible.” Under the Stafford Act, Federal disaster assistance for a flooded public building will be reduced by the amount of flood insurance coverage the community should have on that building.

It does not matter whether the building is insured; FEMA will still only provide assistance for damage that exceeded the level of available insurance.

Example: The maximum amount of flood insurance available for a non-residential building is \$500,000. Floodville's \$2 million city hall is flooded and receives \$600,000 in damage. If the city hall is in an SFHA, the disaster assistance program will assume it's insured for \$500,000. Federal aid to repair or rebuild the city hall will be 75% of \$100,000 (\$600,000 - \$500,000).

Floodville will receive \$75,000 in disaster assistance for a building that suffered \$600,000 in damage. If the city hall was not insured, Floodville's taxpayers are going to have to come up with the balance. If it was insured, the city will have \$575,000 (\$500,000 in insurance claim and \$75,000 from disaster assistance) toward repairs and reconstruction.

Flood insurance is also a good idea because not every flood warrants a Federal disaster declaration. The moral of the story is to make sure that all publicly owned buildings subject to flooding have flood insurance.

2. Human services programs provide resources to assist residents and business owners, such as temporary housing, unemployment aid, food stamps, grants and loans. Many of these were formerly called the Individual Assistance Program.

Temporary housing can be particularly helpful in providing homes for people waiting to find out if their homes can be reoccupied or if they will be acquired and cleared.

The **Individual and Family Grants (IFG)** program is designed to help disaster victims pay for "unmet needs," such as those that are not funded by other programs. It is a grant to individuals, usually people who cannot qualify for a loan or cannot get a loan to cover all of their expenses.

Sometimes IFG can be used to fund minor property protection projects, such as elevating a furnace, water heater, washer or electrical service box above the flood level. These grants can be especially useful in areas with lower income or fixed income families that are subject to shallow or basement flooding.

3. Hazard mitigation programs provide financial resources to help reduce susceptibility to damage from a future disaster. Section 404 of the Stafford Act makes money available to assist eligible applicants after a Presidential disaster declaration. **Section 404's Hazard Mitigation Grant Program** will pay up to 75 percent of the cost of such mitigation projects.

To be eligible, the projects should be consistent with the recommendations of the state's mitigation plans and strategies. Projects must be shown to be cost-effective, and they may mitigate hazards other than the one that caused the disaster.

Eligible projects include acquisition of floodprone properties and reversion to open space, elevation of floodprone buildings and minor drainage improvements.

Traditionally, the program has most often been used to acquire floodplain properties. In some communities, the property owners volunteered to help pay the local share of the cost.

Even if your community did not receive a disaster declaration, you may be able to receive a Hazard Mitigation Grant. In 1997, FEMA ruled that the funds could be spent on appropriate projects throughout a state that received a disaster declaration.

4. Small Business Administration Disaster Loan Program, provides loans to disaster victims that meet the ability to repay, income qualifications. In addition to borrowing enough funds to repair damages, the **SBA Disaster Loan Program** will provide additional loan amounts in order for the repairs to comply with local codes. Also, SBA will allow an additional 15% for incorporating mitigation measures during the repair process.

APPENDIX A: FEMA REGIONAL OFFICES

Region I

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)
FEMA Region I
99 High Street
6th Floor
Boston, MA 02110
(617) 223-9540

Region II

(New Jersey, New York, Puerto Rico, Virgin Islands)
FEMA Region II
26 Federal Plaza, Suite 1307
New York, NY 10278-0001
Phone: (212) 680-3600
FAX: (212) 680-3681

Region III

(Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia)
FEMA Region III
615 Chestnut Street
Philadelphia, PA 19106
Phone: (215) 931-5608

Region IV

(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)
FEMA Region IV
3003 Chamblee-Tucker Road
Atlanta, GA 30341
Phone: (770) 220-5200

Region V

(Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)
FEMA Region V
536 South Clark Street
Chicago, IL 60605
Phone: (312) 408-5500

Region VI

(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)
FEMA Region VI
Federal Regional Center
800 North Loop 288
Denton, TX 76209
Phone: (940) 898-5399

Region VII

(Iowa, Kansas, Missouri, Nebraska)
FEMA Region VII
2323 Grand Boulevard, Suite 900
Kansas City, MO 64108
Phone: (816) 283-7061

Region VIII

(Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)
FEMA Region VIII
Building 710, Box 25267
Denver, CO 80225-0267
Phone: (303) 235-4800
FAX: (303) 235-4976

Region IX

(Arizona, California, Hawaii, Nevada)
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607
Phone: (510) 627-7100

Region X

(Alaska, Idaho, Oregon, Washington)
FEMA Region X
130 228th Street, SW
Bothell, WA 98021
Phone: (425) 487-4600

APPENDIX B:

STATE CONTACTS

For an up to date list of State Hazard Mitigation Officers and NFIP Coordinators see FEMA's web site at <http://www.fema.gov>.

| STATE HAZARD MITIGATION OFFICERS | NFIP COORDINATORS |
|--|--|
| <p>Alabama: Debbie Peery AL Emergency Management Agency 5898 County Road 41 P.O. Drawer 2160 Clanton, AL 35046 Phone: 205-280-2476</p> | <p>Alabama: Charles Sanders, CFM ADECA/OWR/NFID P.O. Box 5690, Montgomery, AL 30103-5690 Phone: 334-353-1966 Fax: 334-242-0776 chuck@adeca.state.al.us</p> |
| <p>Alaska: Gary Brown Alaska Emergency Services P.O. Box 5750 Fort Richardson, AK 99505 Phone: 907-428-7036</p> | <p>Alaska: Christy Miller, CFM Dept. of Community and Economic Development 550 West 7th Avenue, Suite 1770 Anchorage, AK 99501-3510 Phone: 907-269-4567 Fax: 907-269-4563 christy_miller@dced.state.ak.us</p> |
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| <p>Colorado: Marilyn Gally Colorado Office of Emergency Management 15075 South Golden Road Golden, CO 80401-3979 Phone:303-273-1775</p> | <p>Colorado: Kevin Houch, P.E. Colorado Water Conservation Board State Centennial Building, Room 721 1313 Sherman Street Denver, CO 80203 Phone: 303-866-3441 Fax: 303-866-4474 Kevin.houch@state.co.us</p> |
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APPENDIX C:

REFERENCES

Most of the documents listed here are available for free. Order FEMA publications by calling 800/480-2520 or faxing your order to 301/497-6378.

U.S. Army Corps of Engineers publications can be ordered from:

U.S. Army Corps of Engineers ATTN: CECW-PF 20 Massachusetts Avenue, NW Washington, DC 20314

Community Rating System publications can be ordered using the order form at the end of Unit 9.

Other publications can be ordered as noted.

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Reducing Losses in High Risk Flood Hazard Areas: A Guidebook for Local Officials. Association of State Floodplain Managers. FEMA 116. 1987

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Use of Flood Insurance Study (FIS) Data as Available Data. Federal Emergency Management Agency. Floodplain Management Bulletin 1-98. 1998

User's Guide to Technical Bulletins. Federal Emergency Management Agency. FIA-TB-0. 1993

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APPENDIX D:

GLOSSARY

These technical terms are described in more detail in the unit and section noted. In some cases definitions used in NFIP regulations have been shortened or simplified. See the NFIP regulations in Appendix E for the complete definitions.

A Zone: See Zone A.

Accrete: To build up a shoreline by depositing sand, either by nature or human actions. Unit 1, Section A.

Actual cash value: The replacement cost for a building, minus a depreciation percentage based on age and condition. Unit 8, Section A.

Alluvial fan: An area at the base of a valley where the slope flattens out, allowing the floodwater to decrease in speed and spread out, dropping sediment and rock over a fan-shaped area. Unit 1, Section A.

Amendment: A change to a FEMA floodplain map that removes an area that was inadvertently included in the Special Flood Hazard Area. Unit 4, Section D.

Approximate studies: Flood hazard mapping done using *approximate* study methods that show the *approximate* outline of the base floodplain. An approximate study does not produce a base flood elevation. Unit 3, Section A.

B Zone: See Zone B.

Base flood depth: A measurement of the base flood in feet above ground, used for shallow flooding. Unit 3, Section D.

Base flood: The flood having a 1% chance of being equaled or exceeded in any given year. Also referred to as the 100-year flood. The base flood is used by the NFIP as the basis for mapping, insurance rating, and regulating new construction. Unit 3, Section A.

Basement: Any area of the building having its floor subgrade (below ground level) on all sides. Unit 5, Section E.

Base floodplain: The area of water and land inundated by the base flood. Unit 3, Section A.

Basin: See watershed.

Bathymetry: The measurement of depths of water in the ocean or lakes. Unit 3, Section C.

Bench marks: Monuments on the ground that show the elevation of the spot above sea level. Unit 3, Section B.

Building: A walled and roofed structure including a gas or liquid storage tank that is principally above ground as well as a manufactured home. In this study guide, the term is the same as the term “structure” in the federal regulations (44 CFR 59.1). Unit 5, Section E.

Building condition survey: A windshield survey conducted to obtain a preliminary evaluation of the extent and severity of damage to buildings after a disaster. Unit 10, Section A.

C Zone: See Zone C.

CAP: Community Assistance Program

Catchment area: See watershed.

Cfs: Cubic feet per second, the unit by which discharges are measured (a cubic foot of water is about 7.5 gallons). Unit 3, Section B.

Channel: Defined landforms that carry water. Unit 1, Section A.

CLOMA: Conditional Letter of Map Amendment.

CLOMR: Conditional Letter of Map Revision.

Closed basin lake: A lake that has either no outlet or a relatively small one, where rainfall or groundwater can cause the lake’s level to rise faster than it can drain. Unit 1, Section A.

Coastal high hazard area: That part of the coastal floodplain extending from offshore to the inland limit of the primary coastal dune along an open coast and any other area subject to high velocity wave action from storms and seismic sources. Wave heights during the base flood will generally be three feet or more in height above the stillwater elevation. Unit 3, Section C.

CBRA: The Coastal Barrier Resources Act which identified undeveloped portions of coastal barriers. Unit 9, Section D and Unit 3, Section F.

Community Assistance Program: A FEMA program that funds state activities that help communities in the NFIP. Unit 2, Section C.

Community Rating System: A program that provides a flood insurance premium rate reduction based on a community’s floodplain management activities. Unit 10, Section D.

Community: A city, county, township, Indian tribe or authorized tribal organization, Alaska Native village or authorized native organization, or other local government with the statutory authority to adopt and enforce floodplain regulations and participate in the National Flood Insurance Program. Unit 2, Section C.

Conditional Letter of Map Amendment: A statement from FEMA that if a project is constructed as planned, a Letter of Map Amendment can be issued later. Unit 4, Section D.

Conditional Letter of Map Revision: A statement from FEMA that if a project is constructed as planned, a Letter of Map Revision can be issued later. Unit 4, Section D.

Contour map: A topographic map that shows points with the same elevation as connected by a contour line. Unit 3, Section B.

Contour: A line of equal elevation on a topographic (contour) map.

Conveyance shadow: An area upstream or downstream of an existing obstruction to flood flows. Unit 5, Section B.

Cross section: Surveyed information that describes the stream and the floodplain at a particular point along the stream. Unit 3, Section B.

CRS: Community Rating System

Dam breach inundation area: The area flooded by a dam failure. Unit 6, Section D.

Damage Survey Report: A form completed by disaster assistance staff to determine the repair and reconstruction needs of public and private nonprofit facilities. Unit 10, Section C.

Datum: A common vertical elevation reference point, usually in relation to sea level. Unit 3, Section B.

Detailed studies: Flood hazard mapping studies that are done use hydrologic and hydraulic methods that produce base flood elevations, floodways, and other pertinent flood data. Unit 3, Section A.

Development: Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment and materials. Unit 5, Section C.

Discharge: The amount of water that passes a point in a given period of time. Rate of discharge is usually measured in cubic feet per second (cfs). Unit 3, Section B.

DSR: Damage survey report.

Elevation reference marks: See bench marks.

Emergency Operations Center: A facility that houses communications equipment that is used to coordinate the response to a disaster or emergency. Unit 10, Section A.

Eminent domain: Governmental power to acquire a property without the owner's consent. Unit 6, Section A.

Enabling legislation: State laws that authorize communities to perform governmental activities, such as enacting and enforcing regulations. Unit 7, Section A.

Encroachment review: An analysis to determine if a project will increase flood heights or cause increased flooding downstream. Unit 5, Section D.

EOC: Emergency Operations Center

EO 11988: Executive Order 11988 Floodplain Management. A directive by the President that sets procedures Federal agencies must follow before they take or fund an action in the floodplain. Unit 6, Section E.

FBFM: Flood Boundary Floodway Map. An official map of a community, on which the Federal Emergency Management Agency has delineated the regulatory floodway. Recent Flood Insurance Studies show the floodway on the FIRM and do not include an FBFM. Unit 3, Section F.

FEMA: Federal Emergency Management Agency. Most of the National Flood Insurance Program field work and community coordination are done by the 10 FEMA Regional Offices, which are listed in Appendix A.

FHBM: Flood Hazard Boundary Map. An official map of a community published by FEMA that delineates the approximate boundary of the floodplain. An FHBM is generally the initial map provided the community and is eventually superseded by a FIRM. Unit 3, Section F.

FIA: Federal Insurance Administration. FIA was the part of the Federal Emergency Management Agency that administered the National Flood Insurance Program. This is now the responsibility of FEMA's Mitigation Division.

FIRM: Flood Insurance Rate Map. An official map of a community, on which the Federal Emergency Management Agency has delineated both the Special Flood Hazard Areas and the risk premium zones applicable to the community. Unit 3, Section F.

Flash flood: A flood in hilly and mountainous areas that may come scant minutes after a heavy rain. One can also occur in urban areas where pavements and drainage improvements speed runoff to a stream. Unit 1, Section A.

Flood: A general and temporary condition of partial or complete inundation of normally dry land areas. Unit 2, Section B.

Flood fringe: The portion of the floodplain lying outside of the floodway. Unit 3, Section B

Flood hazard mitigation: All actions that can be taken to reduce property damage and the threat to life and public health from flooding. Unit 10, Section B.

Flood Insurance Study: A report published by FEMA for a community issued along with the community's Flood Insurance Rate Map (FIRM). The study contains such background data as the base flood discharges and water surface elevations that were used to prepare the FIRM.

Flood Mitigation Assistance: A grant program that supports plans and projects for mitigating losses to insured buildings funded by the National Flood Insurance Program. Unit 10, Section C.

Flood of record: The highest known flood level for the area, as recorded in historical documents. Unit 5, Section B.

Floodplain: Any land area susceptible to being inundated by flood waters from any source. Unit 1, Section A.

Floodproofing: Protective measures added to or incorporated in a building that is not elevated above the base flood elevation to prevent or minimize flood damage. "Dry floodproofing" measures are designed to keep water from entering a building. "Wet floodproofing" measures minimize damage to a structure and its contents from water that is allowed into a building.

Floodway: The channel of a river or other watercourse and that portion of the adjacent floodplain that must remain open to permit passage of the base flood without cumulatively increasing the water surface elevation more than a designated height (usually one foot). Unit 3, Section B.

FMA: Flood Mitigation Assistance.

Freeboard: A margin of safety added to the base flood elevation to account for waves, debris, miscalculations, or lack of data. Unit 6, Section C.

Functionally dependent use: A use which cannot perform its intended purpose unless it is carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo, and ship building and ship repair facilities.. Unit 7, Section F.

Geographic information system: Computer based map systems that allow the user to keep a map updated easily and to correlate geographic information with other data, such as tax records on properties. Unit 3, Section F.

GIS: Geographic information system

Hazard Mitigation Grant Program: A FEMA disaster assistance grant that funds mitigation projects. Unit 10, Section C.

HEC-2: A computer model used to conduct a hydraulic study, which produces flood elevations, velocities and floodplain widths. Unit 3, Section B.

HEC-RAS: A computer model used to conduct a hydraulic study, which produces flood elevations, velocities and floodplain widths. Unit 3, Section B.

Home rule: A community authorized to do anything that is not prohibited by statute. Unit 7, Section A.

Human intervention: Actions that must be taken by one or more persons before floodwaters arrive in order for a building to be floodproofed. Unit 5, Section E.

Hydrodynamic force: The force of moving water, including the impact of debris and high velocities. Unit 1, Section B.

Hydrologic cycle: The natural cycle that circulates water throughout the environment to maintain an overall balance between water in the air, on the surface and in the ground. Unit 1, Section A.

Hydrology: The science dealing with the waters of the earth. A flood discharge is developed by a hydrologic study.

Hydrostatic pressure: The pressure put on a structure by the weight of standing water. The deeper the water, the more it weighs and the greater the hydrostatic pressure. Unit 1, Section B.

ICC: Increased Cost of Compliance

Ice floe: Large chunks of ice that can cause a great deal of damage when a frozen river or lake begins to melt and break up. Unit 1, Section A.

Ice jam: Flooding that occurs when warm weather and rain break up frozen rivers and the broken ice floats downriver until it is blocked by an obstruction, creating an ice dam that blocks the channel and causes flooding upstream. Unit 1, Section A.

IFG: Individual and Family Grants

Increased Cost of Compliance: An additional claim payment made to a flood insurance policy holder to help cover the cost of bringing a substantially damaged or repetitively damaged building into compliance with the community's floodplain management ordinance. Unit 9, Section B.

Individual and Family Grants: A disaster assistance grant that helps people with their unmet needs (i.e., needs not helped by other disaster assistance programs. Unit 10, Section C.

Inverse condemnation: See "taking." Unit 6, Section A.

ISO: The Insurance Services Office, Inc., an insurance organization that provides support to FEMA on implementation of the Community Rating System. Unit 9, Section C.

Lateral pressure: The amount of pressure imposed sideways by standing water. Deeper water exerts more lateral pressure than shallower water. Unit 1, Section B.

Letter of Map Amendment (LOMA): An official revision to a FEMA map done by describing the property affected. LOMAs are generally issued when properties have been inadvertently included in the floodplain. Unit 4, Section D.

Letter of Map Change (LOMC): A Letter of Map Amendment or a Letter of Map Revision. Unit 4, Section D.

Letter of Map Revision (LOMR): An official revision to a FEMA map done by describing the property affected. Unit 4, Section D.

Limited Map Maintenance Project: A small-scale restudy of a Flood Insurance Study. Unit 4, Section D.

LOMA: Letter of Map Amendment

LOMR: Letter of Map Revision

Lowest Floor: The lowest floor of the lowest enclosed area (including basement) of a building. Unit 5, Section E

Manufactured home: A building that is transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. It includes mobile homes and "double wides." Unit 5, Section E.

Market value: The price a willing buyer and seller agree upon. Unit 8, Section A.

Meander: A curve in a river. Unit 1, Section A.

Mitigation Division: The FEMA office that sets national policy for the NFIP and administers the mapping program. Unit 2, Section B.

M-O-M: Multi-objective management.

Movable bed streams: A type of flooding that features uncertain flow paths. Unit 1, Section A.

Mudslide (i.e., mudflow): A condition where there is a river, flow or inundation of liquid mud down a hillside. Unit 1, Section A.

Mudflow: See mudslide.

Multi-objective management: An approach to planning and funding local programs that involves a variety of local interests and concerns. Unit 10, Section B.

NEPA: The National Environmental Policy Act, a Federal law that requires agencies to evaluate the environmental impact of a proposed project. Unit 6, Section E.

NGVD: National Geodetic Vertical Datum of 1929, the national datum used by the National Flood Insurance Program. NGVD is based on mean sea level. It was known formerly as the "Mean Sea Level Datum of 1929 (MSL)." Unit 3, Section B.

No-rise Certification: A certification by an engineer that a project will not cause a set increase in flood heights. Unit 7, Section G.

Non-structural flood protection measures: Administrative tools for controlling flooding and flood damage, including regulations on development, building codes, property acquisition and structure relocation, and modification of existing buildings. Unit 1, Section B.

Ordinance: The generic term for a law passed by a local government. Unit 7, Section A.

Overbank flooding: Flooding that occurs when downstream channels receive more rain or snowmelt from their watershed than normal, or a channel is blocked by an ice jam or debris. Excess water overloads the channels and flows out onto the floodplain. Unit 1, Section A.

Planned unit development: A regulatory approach that allows a developer to design the entire area while individual requirements may be relaxed to allow for open space, mixed land uses, and other variances to traditional zoning rules. Unit 6, Section C.

Ponding: Runoff that collects in depressions and cannot drain out, creating a temporary pond. Unit 1, Section A.

Post-FIRM building: For insurance rating purposes, a post-FIRM building was constructed or substantially improved after December 31, 1974, or after the effective date of the initial Flood Insurance Rate Map of a community, whichever is later. For a community that participated in the NFIP when its initial FIRM was issued, post-FIRM buildings are the same as new construction and must meet the National Flood Insurance Program's minimum floodplain management standards.

Pre-FIRM building: For insurance rating purposes, a pre-FIRM building was constructed or substantially improved on or before December 31, 1974, or before the effective date of the initial Flood Insurance Rate Map of the community, whichever is later. Most pre-FIRM buildings were constructed without taking the flood hazard into account.

Probability: A statistical term having to do with the size of a flood and the odds of that size of flood occurring in any year. Unit 3, Section A.

Profile: A graph that shows elevations of various flood events. Unit 3, Section B.

Public/Infrastructure Assistance: A disaster assistance grant that helps public agencies and nonprofit organizations finance repairs and reconstruction of public infrastructure. Unit 10, Section C.

PUD: Planned unit development.

Q3 Flood Data Product: A graphical representation of certain features of a FIRM in digital format. Unit 3, Section F.

Recreational vehicle: A vehicle designed to be self propelled or permanently towable by a light duty truck that is designed for use as temporary living quarters for recreational, camping, travel, or seasonal use. Unit 5, Section E.

Reconstruction: Building a new structure on the old foundation or slab of a structure that was destroyed, damaged, purposefully demolished or razed. The term also applies when an existing structure is moved to a new site. Unit 8, Section B.

Regular Program: Also called the Regular Phase. The phase of community participation in the National Flood Insurance Program that begins on the date of the Flood Insurance Rate Map or when the community adopts an ordinance that meets the minimum requirements of the NFIP and adopts the technical data provided with the FIRM, whichever is later. Nearly all communities participating in the NFIP are in the Regular Program.

Rehabilitation: An improvement made to an existing structure which does not affect its external dimensions. Unit 8, Section A.

Restudy: A new Flood Insurance Study for all or part of a community that has already had a Flood Insurance Study. Unit 4, Section D.

Retrofitting: Retrofitting techniques include floodproofing, elevation, construction of small levees, and other modifications made to an existing building or its yard to protect it from flood damage.

Revision: A change to a floodplain map based on new data submitted to FEMA. Unit 4, Section D.

Riverine: Of or produced by a river. Riverine floodplains have readily identifiable channels. Floodway maps can only be prepared for riverine floodplains. Unit 1, Section A.

Roughness: A measure related to ground surface conditions that reflects changes in floodwater velocity due to ground friction. Unit 3, Section B.

Runoff: Rainfall and snowmelt that reaches a stream. Unit 3, Section B.

SFHA: Special Flood Hazard Area

Sheet flow: Floodwater that spreads out over a large area that does not have defined channels at a somewhat uniform depth. Unit 1, Section A.

Special Flood Hazard Area: the base floodplain displayed on FEMA maps. It includes the A and V zones. Unit 3, Section A.

Stafford Act: The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 as amended which authorizes FEMA's current disaster assistance programs and the Hazard Mitigation Grant Program. The Disaster Mitigation Act of 2000 made extensive changes to the Stafford Act. Unit 10, Section C.

Stationing: Determining the distance along a stream. Unit 3, Section B and Unit 4, Section B.

Statutory authority: The powers granted to a local government by state law. Unit 7, Section A.

Stillwater flood elevations show the elevations of various coastal floods, not counting waves. Unit 3, Section C.

Storm surge: Water that is pushed toward shore by persistent high wind and changes in air pressure. Storm surges can result from hurricanes and other coastal storms. Unit 1, Section A.

Stormwater management: Efforts to reduce the impact of increased runoff that results from new development. Unit 6, Section C.

Stormwater detention, Storing stormwater runoff for release at a restricted rate after the storm subsides. Unit 6, Section C.

Stormwater retention: Storing stormwater runoff for later use in irrigation or groundwater recharge, or to reduce pollution. Unit 6, Section C.

Structural flood control: Measures that control floodwaters by construction of barriers or storage areas or by modifying or redirecting channels. Unit 1, Section C.

Submit to rate: a process used when an insurance agent cannot complete the rate calculation for a flood insurance policy. The application is sent to the WYO Company or FEMA to be individually rated. Unit 9, Section B.

Substantial damage: 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. Unit 8, Section B.

Substantial improvement: 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. The definition of “substantial improvement” includes buildings that have incurred “substantial damage” regardless of the actual repair work performed. Unit 8, Section A.

Taking: Obtaining private property with or without compensating the owner. The term also includes reducing the value of private property to such an extent that the owner is deprived of all economic interest. Unit 6, Section A.

Thalweg: The bottom of a river channel. Unit 1, Section A.

Topographic map: See contour map.

Transect: a survey of topographic conditions used in coastal flood studies. Unit 3, Section C.

Tsunami: A large wave caused by an underwater earthquake or volcano which can raise water levels as much as 15 feet. Unit 1, Section A.

V Zone: See "Zone V."

Variance: A grant of relief by a community from the terms of a land use, zoning or building code regulation. Unit 7, Section F.

Velocity: The speed of moving water, a force that is measured in feet per second. Unit 1, Section A.

Watershed,: An area that drains into a lake, stream or other body of water. Unit 1, Section A.

Wave runup occurs when waves hit the shore and water is moving with such force that it keeps traveling inland. Unit 3, Section C.

Wet floodproof: Protecting a building from flood damage by using flood-resistant materials below the flood level and elevating things subject to flood damage above the flood level. Unit 5, Section E.

Write Your Own: An insurance company that has agreed to sell flood insurance policies on behalf of the NFIP. Unit 9, Section A.

WYO: Write Your Own.

X Zone: See "Zone X."

Zone A: The Special Flood Hazard Area (except coastal V Zones) shown on a community's Flood Insurance Rate Map. Unit 3, Section F. There are five types of A Zones:

A: SFHA where no base flood elevation is provided.

A1-30: Numbered A Zones (e.g., A7 or A14), SFHA where the FIRM shows a base flood elevation in relation to NGVD.

AE: SFHA where base flood elevations are provided. AE Zone delineations are now used on new FIRMs instead of A# Zones.

AO: SFHA with sheet flow, ponding, or shallow flooding. Base flood depths (feet above grade) are provided.

AH: Shallow flooding SFHA. Base flood elevations in relation to NGVD are provided.

Zone B: Area of moderate flood hazard, usually depicted on Flood Insurance Rate Maps as between the limits of the base and 500-year floods. B Zones are also used to designate base floodplains of little hazard, such as those with average depths of less than 1 foot. Unit 3, Section F.

Zone C: Area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year flood level. B and C Zones may have flooding that does not meet the criteria to be mapped as a Special Flood Hazard Area, especially ponding and local drainage problems. Unit 3, Section F.

Zone D: Area of undetermined but possible flood hazard. Unit 3, Section F.

Zone V: The Special Flood Hazard Area subject to coastal high hazard flooding. There are three types of V Zones: V, V1-30, and VE, and they correspond to the A Zone designations. Unit 3, Section F.

Zone X: Newer Flood Insurance Rate Maps show Zones B and C (see above) as Zone X. Unit 3, Section F.

APPENDIX E: NFIP REGULATIONS

This Appendix contains the text of the Code of Federal Regulations (CFR) for the National Flood Insurance Program: 44 CFR Parts 59, 60, 65, and 70.

TITLE 44--EMERGENCY MANAGEMENT AND ASSISTANCE

CHAPTER I--FEDERAL EMERGENCY MANAGEMENT AGENCY, DEPARTMENT OF HOMELAND SECURITY

PART 59--GENERAL PROVISIONS – Table of Contents

Subpart A-General

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59.21 Purpose of subpart.

59.22 Prerequisites for the sale of flood insurance.

59.23 Priorities for the sale of flood insurance under the regular program.

59.24 Suspension of community eligibility.

Authority: 42 U.S.C. 4001 et seq.; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127 of Mar. 31, 1979, 44 FR 19367, 3 CFR, 1979 Comp., p. 376.

Subpart A--General

§ 59.1 Definitions.

As used in this subchapter—

“Act” means the statutes authorizing the National Flood Insurance Program that are incorporated in 42 U.S.C. 4001-4128.

“Actuarial rates”--see “risk premium rates”.

“Administrator” means the Federal Insurance Administrator.

“Agency” means the Federal Emergency Management Agency, Washington DC.

“Alluvial fan flooding” means flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and, unpredictable flow paths. “Apex” means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

“Applicant” means a community which indicates a desire to participate in the Program.

“Appurtenant structure” means a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

“Area of future-conditions flood hazard” means the land area that would be inundated by the 1percent-annual-chance (100-year) flood based on future-conditions hydrology.

“Area of shallow flooding” means a designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

“Area of special flood-related erosion hazard” is the land within a community which is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the Flood Hazard Boundary Map (FHBM). After the detailed evaluation of the special flood-related erosion hazard area in preparation for publication of the FIRM, Zone E may be further refined.

“Area of special flood hazard” is the land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the flood insurance rate map, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, or V1-30, VE, or V. For purposes of these regulations, the term “special flood hazard area” is synonymous in meaning with the phrase “area of special flood hazard”.

“Area of special mudslide (i.e., mudflow) hazard” is the land within a community most likely to be subject to severe mudslides (i.e., mudflows). The area may be designated as Zone M on the FHBM. After the detailed evaluation of the special mudslide (i.e., mudflow) hazard area in preparation for publication of the FIRM, Zone M may be further refined.

“Base flood” means the flood having a one percent chance of being equalled or exceeded in any given year.

“Basement” means any area of the building having its floor subgrade (below ground level) on all sides.

“Breakaway wall” means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

“Building” - see structure.

“Chargeable rates” mean the rates established by the Administrator pursuant to section 1308 of the Act for first layer limits of flood insurance on existing structures.

“Chief Executive Officer of the community (CEO)” means the official of the community who is charged with the authority to implement and administer laws, ordinances and regulations for that community.

“Coastal high hazard area” means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

“Community” means any State or area or political subdivision thereof, or any Indian tribe or authorized tribal organization, or Alaska

Native village or authorized native organization, which has authority to adopt and enforce flood plain management regulations for the areas within its jurisdiction.

“Contents coverage” is the insurance on personal property within an enclosed structure, including the cost of debris removal, and the reasonable cost of removal of contents to minimize damage. Personal property may be household goods usual or incidental to residential occupancy, or merchandise, furniture, fixtures, machinery, equipment and supplies usual to other than residential occupancies.

“Criteria” means the comprehensive criteria for land management and use for flood-prone areas developed under 42 U.S.C. 4102 for the purposes set forth in part 60 of this subchapter.

“Critical feature” means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

“Curvilinear Line” means the border on either a FHBM or FIRM that delineates the special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazard areas and consists of a curved or contour line that follows the topography.

“Deductible” means the fixed amount or percentage of any loss covered by insurance which is borne by the insured prior to the insurer's liability.

“Developed area” means an area of a community that is:

(a) A primarily urbanized, built-up area that is a minimum of 20 contiguous acres, has basic urban infrastructure, including roads, utilities, communications, and public facilities, to sustain industrial, residential, and commercial activities, and

(1) Within which 75 percent or more of the parcels, tracts, or lots contain commercial, industrial, or residential structures or uses; or

(2) Is a single parcel, tract, or lot in which 75 percent of the area contains existing commercial or industrial structures or uses; or

(3) Is a subdivision developed at a density of at least two residential structures per acre within which 75 percent or more of the lots contain existing residential structures at the time the designation is adopted.

(b) Undeveloped parcels, tracts, or lots, the combination of which is less than 20 acres and

contiguous on at least 3 sides to areas meeting the criteria of paragraph (a) at the time the designation is adopted.

(c) A subdivision that is a minimum of 20 contiguous acres that has obtained all necessary government approvals, provided that the actual "start of construction" of structures has occurred on at least 10 percent of the lots or remaining lots of a subdivision or 10 percent of the maximum building coverage or remaining building coverage allowed for a single lot subdivision at the time the designation is adopted and construction of structures is underway. Residential subdivisions must meet the density criteria in paragraph (a)(3).

"Development" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials..

"Director" means the Director of the Federal Emergency Management Agency.

"Eligible community or participating community" means a community for which the Administrator has authorized the sale of flood insurance under the National Flood Insurance Program.

"Elevated building" means, for insurance purposes, a nonbasement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

"Emergency Flood Insurance Program or emergency program" means the Program as implemented on an emergency basis in accordance with section 1336 of the Act. It is intended as a program to provide a first layer amount of insurance on all insurable structures before the effective date of the initial FIRM.

"Erosion" means the process of the gradual wearing away of land masses. This peril is not per se covered under the Program.

"Exception" means a waiver from the provisions of part 60 of this subchapter directed to a community which relieves it from the requirements of a rule, regulation, order or other determination made or issued pursuant to the Act.

"Existing construction" means for the purposes of determining rates, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date.

"Existing construction" may also be referred to as "existing structures."

"Existing manufactured home park or subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

"Existing structures" - see existing construction.

"Expansion to an existing manufactured home park or subdivision" means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufacturing homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

"Federal agency" means any department, agency, corporation, or other entity or instrumentality of the executive branch of the Federal Government, and includes the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation.

"Federal instrumentality responsible for the supervision, approval, regulation, or insuring of banks, savings and loan associations, or similar institutions" means the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Comptroller of the Currency, the Federal Home Loan Bank Board, the Federal Savings and Loan Insurance Corporation, and the National Credit Union Administration.

"Financial assistance" means any form of loan, grant, guaranty, insurance, payment, rebate, subsidy, disaster assistance loan or grant, or any other form of direct or indirect Federal assistance, other than general or special revenue sharing or formula grants made to States.

"Financial assistance for acquisition or construction purposes" means any form of financial assistance which is intended in whole or in part for the acquisition, construction, reconstruction, repair, or improvement of any publicly or privately owned building or mobile home, and for any machinery, equipment, fixtures, and furnishings contained or to be contained therein, and shall include the purchase or subsidization of mortgages or mortgage loans but shall exclude assistance pursuant to the Disaster Relief Act of 1974 other than assistance under such Act in connection with a flood. It includes only financial assistance insurable under the Standard Flood Insurance Policy.

“First-layer coverage” is the maximum amount of structural and contents insurance coverage available under the Emergency Program.

“Flood” or “Flooding” means:

(a) A general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters.

(2) The unusual and rapid accumulation or runoff of surface waters from any source.

(3) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

(b) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a)(1) of this definition.

“Flood elevation determination” means a determination by the Administrator of the water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year.

“Flood elevation study” means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

“Flood Hazard Boundary Map (FHBM)” means an official map of a community, issued by the Administrator, where the boundaries of the flood, mudslide (i.e., mudflow) related erosion areas having special hazards have been designated as Zones A, M, and/or E.

“Flood insurance” means the insurance coverage provided under the Program.

“Flood Insurance Rate Map (FIRM)” means an official map of a community, on which the Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community.

“Flood Insurance Study” - see flood elevation study.

“Flood plain or flood-prone area” means any land

area susceptible to being inundated by water from any source (see definition of “flooding”).

“Flood plain management” means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and flood plain management regulations.

“Flood plain management regulations” means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a flood plain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

“Flood protection system” means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area within a community subject to a “special flood hazard” and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

“Flood proofing” means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

“Flood-related erosion” means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

“Flood-related erosion area or flood-related erosion prone area” means a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

“Flood-related erosion area management” means the operation of an overall program of corrective and

preventive measures for reducing flood-related erosion damage, including but not limited to emergency preparedness plans, flood-related erosion control works, and flood plain management regulations.

“Floodway” - see regulatory floodway.

“Floodway encroachment lines” mean the lines marking the limits of floodways on Federal, State and local flood plain maps.

“Freeboard” means a factor of safety usually expressed in feet above a flood level for purposes of flood plain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

“Functionally dependent use” means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

“Future-conditions flood hazard area, or future-conditions floodplain”--see Area of future-conditions flood hazard.

“Future-conditions hydrology” means the flood discharges associated with projected land-use conditions based on a community's zoning maps and/or comprehensive land-use plans and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications within a stream or other waterway, such as bridge and culvert construction, fill, and excavation.

“General Counsel” means the General Counsel of the Federal Emergency Management Agency.

“Highest adjacent grade” means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

“Historic Structure” means any structure that is:

(a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

(b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the

historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

(c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or

(d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

(1) By an approved state program as determined by the Secretary of the Interior or

(2) Directly by the Secretary of the Interior in states without approved programs.

“Independent scientific body” means a non-Federal technical or scientific organization involved in the study of land use planning, flood plain management, hydrology, geology, geography, or any other related field of study concerned with flooding.

“Insurance adjustment organization” means any organization or person engaged in the business of adjusting loss claims arising under the Standard Flood Insurance Policy.

“Insurance company or insurer” means any person or organization authorized to engage in the insurance business under the laws of any State.

“Levee” means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

“Levee System” means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

“Lowest Floor” means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Sec. 60.3.

“Mangrove stand” means an assemblage of mangrove trees which are mostly low trees noted for a copious development of interlacing adventitious roots above the ground and which contain one or more of the following species: Black mangrove (*Avicennia Nitida*); red mangrove (*Rhizophora Mangle*); white

mangrove (*Languncularia Racemosa*); and buttonwood (*Conocarpus Erecta*).

“Manufactured home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle”.

“Manufactured home park or subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

“Map” means the Flood Hazard Boundary Map (FHBM) or the Flood Insurance Rate Map (FIRM) for a community issued by the Agency.

“Mean sea level” means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

“Mudslide (i.e., mudflow) describes a condition where there is a river, flow or inundation of liquid mud down a hillside usually as a result of a dual condition of loss of brush cover, and the subsequent accumulation of water on the ground preceded by a period of unusually heavy or sustained rain. A mudslide (i.e., mudflow) may occur as a distinct phenomenon while a landslide is in progress, and will be recognized as such by the Administrator only if the mudflow, and not the landslide, is the proximate cause of damage that occurs.

“Mudslide (i.e., mudflow) area management” means the operation of an overall program of corrective and preventive measures for reducing mudslide (i.e., mudflow) damage, including but not limited to emergency preparedness plans, mudslide control works, and flood plain management regulations.

“Mudslide (i.e., mudflow) prone area” means an area with land surfaces and slopes of unconsolidated material where the history, geology and climate indicate a potential for mudflow.

“New construction” means, for the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

“New manufactured home park or subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community. “100-year flood” - see base flood.

“Participating community”, also known as an eligible community, means a community in which the Administrator has authorized the sale of flood insurance.

“Person” includes any individual or group of individuals, corporation, partnership, association, or any other entity, including State and local governments and agencies.

“Policy” means the Standard Flood Insurance Policy.

“Premium” means the total premium payable by the insured for the coverage or coverages provided under the policy. The calculation of the premium may be based upon either chargeable rates or risk premium rates, or a combination of both.

“Primary frontal dune” means a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

“Principally above ground” means that at least 51 percent of the actual cash value of the structure, less land value, is above ground.

“Program” means the National Flood Insurance Program authorized by 42 U.S.C. 4001 through 4128.

“Program deficiency” means a defect in a community's flood plain management regulations or administrative procedures that impairs effective implementation of those flood plain management regulations or of the standards in Sec. 60.3, 60.4, 60.5, or 60.6.

“Project cost” means the total financial cost of a flood protection system (including design, land acquisition, construction, fees, overhead, and profits), unless the Federal Insurance Administrator determines a given “cost” not to be a part of such project cost.

“Recreational vehicle” means a vehicle which is:

- (a) Built on a single chassis;
- (b) 400 square feet or less when measured at the

largest horizontal projection;

(c) Designed to be self-propelled or permanently towable by a light duty truck; and

(d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

“Reference feature” is the receding edge of a bluff or eroding frontal dune, or if such a feature is not present, the normal high-water line or the seaward line of permanent vegetation if a high-water line cannot be identified.

“Regular Program” means the Program authorized by the Act under which risk premium rates are required for the first half of available coverage (also known as “first layer” coverage) for all new construction and substantial improvements started on or after the effective date of the FIRM, or after December 31, 1974, for FIRM's effective on or before that date. All buildings, the construction of which started before the effective date of the FIRM, or before January 1, 1975, for FIRMs effective before that date, are eligible for first layer coverage at either subsidized rates or risk premium rates, whichever are lower. Regardless of date of construction, risk premium rates are always required for the second layer coverage and such coverage is offered only after the Administrator has completed a risk study for the community.

“Regulatory floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

“Remedy a violation” means to bring the structure or other development into compliance with State or local flood plain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

“Risk premium rates” mean those rates established by the Administrator pursuant to individual community studies and investigations which are undertaken to provide flood insurance in accordance with section 1307 of the Act and the accepted actuarial principles. “Risk premium rates” include provisions for operating costs and allowances.

“Riverine” means relating to, formed by, or

resembling a river (including tributaries), stream, brook, etc.

“Sand dunes” mean naturally occurring accumulations of sand in ridges or mounds landward of the beach.

“Scientifically incorrect”. The methodology(ies) and/or assumptions which have been utilized are inappropriate for the physical processes being evaluated or are otherwise erroneous.

“Second layer coverage” means an additional limit of coverage equal to the amounts made available under the Emergency Program, and made available under the Regular Program.

“Servicing company” means a corporation, partnership, association, or any other organized entity which contracts with the Federal Insurance Administration to service insurance policies under the National Flood Insurance Program for a particular area.

“Sheet flow area”- see area of shallow flooding.

“60-year setback” means a distance equal to 60 times the average annual long term recession rate at a site, measured from the reference feature.

“Special flood hazard area”-- see “area of special flood hazard”.

“Special hazard area” means an area having special flood, mudslide (i.e., mudflow), or flood-related erosion hazards, and shown on an FHBM or FIRM as Zone A, AO, A1-30, AE, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, A99, AH, VO, V1-30, VE, V, M, or E.

“Standard Flood Insurance Policy” means the flood insurance policy issued by the Federal Insurance Administrator, or an insurer pursuant to an arrangement with the Administrator pursuant to Federal statutes and regulations.

“Start of Construction” (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97348)), includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling;

nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

“State” means any State, the District of Columbia, the territories and possessions of the United States, the Commonwealth of Puerto Rico, and the Trust Territory of the Pacific Islands.

State coordinating agency means the agency of the state government, or other office designated by the Governor of the state or by state statute at the request of the Administrator to assist in the implementation of the National Flood Insurance Program in that state.

“Storm cellar” means a space below grade used to accommodate occupants of the structure and emergency supplies as a means of temporary shelter against severe tornado or similar wind storm activity.

“Structure” means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. Structure, for insurance purposes, means:

(1) A building with two or more outside rigid walls and a fully secured roof, that is affixed to a permanent site;

(2) A manufactured home (“a manufactured home,” also known as a mobile home, is a structure: built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation); or

(3) A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.

For the latter purpose, “structure” does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in paragraph (3) of this definition, or a gas or liquid storage tank.

“Subsidized rates” mean the rates established by the Administrator involving in the aggregate a subsidization by the Federal Government.

“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 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 “substantial damage”, regardless of the actual repair work performed. The term does not, however, include either:

(1) 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 or

(2) Any alteration of a “historic structure”, provided that the alteration will not preclude the structure's continued designation as a “historic structure”.

“30-year setback” means a distance equal to 30 times the average annual long term recession rate at a site, measured from the reference feature.

“Technically incorrect”. The methodology(ies) utilized has been erroneously applied due to mathematical or measurement error, changed physical conditions, or insufficient quantity or quality of input data.

“V Zone” - see “coastal high hazard area.”

“Variance” means a grant of relief by a community from the terms of a flood plain management regulation.

“Violation” means the failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Sec. 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

“Water surface elevation” means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, (or other datum, where

specified) of floods of various magnitudes and frequencies in the flood plains of coastal or riverine areas.

“Zone of imminent collapse” means an area subject to erosion adjacent to the shoreline of an ocean, bay, or lake and within a distance equal to 10 feet plus 5 times the average annual long-term erosion rate for the site, measured from the reference feature.

[41 FR 46968, Oct. 26, 1976]

Editorial Note: For Federal Register citations affecting Sec. 59.1, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO access.

§ 59.2 Description of program.

(a) The National Flood Insurance Act of 1968 was enacted by title XIII of the Housing and Urban Development Act of 1968 (Pub. L. 90448, August 1, 1968) to provide previously unavailable flood insurance protection to property owners in flood-prone areas. Mudslide (as defined in Sec. 59.1) protection was added to the Program by the Housing and Urban Development Act of 1969 (Pub. L. 91-152, December 24, 1969). Flood-related erosion (as defined in Sec. 59.1) protection was added to the Program by the Flood Disaster Protection Act of 1973 (Pub. L. 93-234, December 31, 1973). The Flood Disaster Protection Act of 1973 requires the purchase of flood insurance on and after March 2, 1974, as a condition of receiving any form of Federal or federally-related financial assistance for acquisition or construction purposes with respect to insurable buildings and mobile homes within an identified special flood, mudslide (i.e., mudflow), or flood-related erosion hazard area that is located within any community participating in the Program. The Act also requires that on and after July 1, 1975, or one year after a community has been formally notified by the Administrator of its identification as community containing one or more special flood, mudslide (i.e., mudflow), or flood-related erosion hazard areas, no such Federal financial assistance, shall be provided within such an area unless the community in which the area is located is then participating in the Program, subject to certain exceptions. See FIA published Guidelines at Sec. 59.4(c).

(b) To qualify for the sale of federally-subsidized flood insurance a community must adopt and submit to the Administrator as part of its application, flood plain management regulations, satisfying at a minimum the criteria set forth at part 60 of this subchapter, designed to reduce or avoid future flood, mudslide (i.e., mudflow) or flood-related erosion damages. These regulations must include effective enforcement provisions.

(c) Minimum requirements for adequate flood plain management regulations are set forth in Sec. 60.3 for flood-prone areas, in Sec. 60.4 for mudslide (i.e., mudflow) areas and in Sec. 60.5 for flood-related erosion areas. Those applicable requirements and standards are based on the amount of technical information available to the community.

[41 FR 46968, Oct. 26, 1976, as amended at 43 FR 7140, Feb. 17, 1978. Redesignated at 44 FR 31177, May 31, 1979, and amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 59.3 Emergency program.

The 1968 Act required a risk study to be undertaken for each community before it could become eligible for the sale of flood insurance. Since this requirement resulted in a delay in providing insurance, the Congress, in section 408 of the Housing and Urban Development Act of 1969 (Pub. L. 91-152, December 24, 1969), established an Emergency Flood Insurance Program as a new section 1336 of the National Flood Insurance Act (42 U.S.C. 4056) to permit the early sale of insurance in flood-prone communities. The emergency program does not affect the requirement that a community must adopt adequate flood plain management regulations pursuant to part 60 of this subchapter but permits insurance to be sold before a study is conducted to determine risk premium rates for the community. The program still requires upon the effective date of a FIRM the charging of risk premium rates for all new construction and substantial improvements and for higher limits of coverage for existing structures.

[43 FR 7140, Feb. 17, 1978. Redesignated at 44 FR 31177, May 31, 1979, and amended at 48 FR 44543, Sept. 29, 1983]

§ 59.4 References.

(a) The following are statutory references for the National Flood Insurance Program, under which these regulations are issued:

(1) National Flood Insurance Act of 1968 (title XIII of the Housing and Urban Development Act of 1968), Pub. L. 90-448, approved August 1, 1968, 42 U.S.C. 4001 et seq.

(2) Housing and Urban Development Act of 1969 (Pub. L. 91-152, approved December 24, 1969).

(3) Flood Disaster Protection Act of 1973 (87 Stat. 980), Public Law 93-234, approved December 31, 1973.

(4) Section 816 of the Housing and Community Development Act of 1974 (87 Stat. 975), Public Law 93-383, approved August 22, 1974.

(5) Public Law 5-128 (effective October 12, 1977).

(6) The above statutes are included in 42 U.S.C. 4001 et seq.

(b) The following are references relevant to the National Flood Insurance Program:

(1) Executive Order 11988 (Floodplain Management, dated May 24, 1977 (42 FR 26951, May 25, 1977)).

(2) The Flood Control Act of 1960 (Pub. L. 86645).

(3) Title II, section 314 of title III and section 406 of title IV of the Disaster Relief Act of 1974 (Pub. L. 93-288).

(4) Coastal Zone Management Act (Pub. L. 92583), as amended Public Law 94-370.

(5) Water Resources Planning Act (Pub. L. 8990), as amended Public Law 94-112 (October 16, 1975).

(6) Title I, National Environmental Policy Act (Pub. L. 91-190).

(7) Land and Water Conservation Fund Act (Pub. L. 89-578), and subsequent amendments thereto.

(8) Water Resources Council, Principals and Standards for Planning, Water and Related Land Resources (38 FR 24778-24869, September 10, 1973).

(9) Executive Order 11593 (Protection and Enhancement of the Cultural Environment), dated May 13, 1971 (36 FR 8921, May 15, 1971).

(10) 89th Cong., 2nd Session, H.D. 465.

(11) Required land use element for comprehensive planning assistance under section 701 of the Housing Act of 1954, as amended by the Housing and Community Development Act of 1974 (24 CFR 600.72).

(12) Executive Order 11990 (Protection of Wetlands, dated May 24, 1977 (42 FR 26951, May 25, 1977)).

(13) Water Resources Council (Guidance for Floodplain Management) (42 FR 52590, September 30, 1977).

(14) Unified National Program for Floodplain Management of the United States Water Resources Council, July 1976.

(c) The following reference guidelines represent the views of the Federal Insurance Administration with respect to the mandatory purchase of flood insurance under section 102 of the Flood Disaster Protection Act of 1973: Mandatory Purchase of Flood Insurance Guidelines (54 FR 29666-29695, July 13, 1989).

[41 FR 46968, Oct. 26, 1976, as amended at 43 FR 7140, Feb. 17, 1978. Redesignated at 44 FR 31177, May 31, 1979, and amended at 57 FR 19540, May 7, 1992]

§ 59.2 Description of program.

(a) The National Flood Insurance Act of 1968 was enacted by title XIII of the Housing and Urban Development Act of 1968 (Pub. L. 90-448, August 1, 1968) to provide previously unavailable flood insurance protection to property owners in flood-prone areas. Mudslide (as defined in Sec. 59.1) protection was added to the Program by the Housing and Urban Development Act of 1969 (Pub. L. 91-152, December 24, 1969). Flood-related erosion (as defined in Sec. 59.1) protection was added to the Program by the Flood Disaster Protection Act of 1973 (Pub. L. 93-234, December 31, 1973). The Flood Disaster Protection Act of 1973 requires the purchase of flood insurance on and after March 2, 1974, as a condition of receiving any form of Federal or federally-related financial assistance for acquisition or construction purposes with respect to insurable buildings and mobile homes within an identified special flood, mudslide (i.e., mudflow), or flood-related erosion hazard area that is located within any community participating in the Program. The Act also requires that on and after July 1, 1975, or one year after a community has been formally notified by the Administrator of its identification as community containing one or more special flood, mudslide (i.e., mudflow), or flood-related erosion hazard areas, no such Federal financial assistance, shall be provided within such an area unless the community in which the area is located is then participating in the Program, subject to certain exceptions. See FIA published Guidelines at Sec. 59.4(c).

(b) To qualify for the sale of federally-subsidized flood insurance a community must adopt and submit

to the Administrator as part of its application, flood plain management regulations, satisfying at a minimum the criteria set forth at part 60 of this subchapter, designed to reduce or avoid future flood, mudslide (i.e., mudflow) or flood-related erosion damages. These regulations must include effective enforcement provisions.

(c) Minimum requirements for adequate flood plain management regulations are set forth in Sec. 60.3 for flood-prone areas, in Sec. 60.4 for mudslide (i.e., mudflow) areas and in Sec. 60.5 for flood-related erosion areas. Those applicable requirements and standards are based on the amount of technical information available to the community.

[41 FR 46968, Oct. 26, 1976, as amended at 43 FR 7140, Feb. 17, 1978. Redesignated at 44 FR 31177, May 31, 1979, and amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 59.4 References.

(a) The following are statutory references for the National Flood Insurance Program, under which these regulations are issued:

(1) National Flood Insurance Act of 1968 (title XIII of the Housing and Urban Development Act of 1968), Pub. L. 90-448, approved August 1, 1968, 42 U.S.C. 4001 et seq.

(2) Housing and Urban Development Act of 1969 (Pub. L. 91-152, approved December 24, 1969).

(3) Flood Disaster Protection Act of 1973 (87 Stat. 980), Public Law 93-234, approved December 31, 1973.

(4) Section 816 of the Housing and Community Development Act of 1974 (87 Stat. 975), Public Law 93-383, approved August 22, 1974.

(5) Public Law 5-128 (effective October 12, 1977).

(6) The above statutes are included in 42 U.S.C. 4001 et seq.

(b) The following are references relevant to the National Flood Insurance Program:

(1) Executive Order 11988 (Floodplain Management, dated May 24, 1977 (42 FR 26951, May 25, 1977)).

(2) The Flood Control Act of 1960 (Pub. L. 86645).

(3) Title II, section 314 of title III and section 406 of title IV of the Disaster Relief Act of 1974 (Pub. L. 93-288).

(4) Coastal Zone Management Act (Pub. L. 92583), as amended Public Law 94-370.

(5) Water Resources Planning Act (Pub. L. 8990), as amended Public Law 94-112 (October 16, 1975).

(6) Title I, National Environmental Policy Act (Pub. L. 91-190).

(7) Land and Water Conservation Fund Act (Pub. L. 89-578), and subsequent amendments thereto.

(8) Water Resources Council, Principals and Standards for Planning, Water and Related Land Resources (38 FR 24778-24869, September 10, 1973).

(9) Executive Order 11593 (Protection and Enhancement of the Cultural Environment), dated May 13, 1971 (36 FR 8921, May 15, 1971).

(10) 89th Cong., 2nd Session, H.D. 465.

(11) Required land use element for comprehensive planning assistance under section 701 of the Housing Act of 1954, as amended by the Housing and Community Development Act of 1974 (24 CFR 600.72).

(12) Executive Order 11990 (Protection of Wetlands, dated May 24, 1977 (42 FR 26951, May 25, 1977)).

(13) Water Resources Council (Guidance for Floodplain Management) (42 FR 52590, September 30, 1977).

(14) Unified National Program for Floodplain Management of the United States Water Resources Council, July 1976.

(c) The following reference guidelines represent the views of the Federal Insurance Administration with respect to the mandatory purchase of flood insurance under section 102 of the Flood Disaster Protection Act of 1973: Mandatory Purchase of Flood Insurance Guidelines (54 FR 29666-29695, July 13, 1989). [41 FR 46968, Oct. 26, 1976, as amended at 43 FR 7140, Feb. 17, 1978. Redesignated at 44 FR 31177, May 31, 1979, and amended at 57 FR 19540, May 7, 1992]

Subpart B--Eligibility Requirements §

59.21 Purpose of subpart.

This subpart lists actions that must be taken by a community to become eligible and to remain eligible for the Program.

[41 FR 46968, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979]

§ 59.22 Prerequisites for the sale of flood insurance.

(a) To qualify for flood insurance availability a community shall apply for the entire area within its jurisdiction, and shall submit:

(1) Copies of legislative and executive actions indicating a local need for flood insurance and an explicit desire to participate in the National Flood Insurance Program;

(2) Citations to State and local statutes and ordinances authorizing actions regulating land use and copies of the local laws and regulations cited;

(3) A copy of the flood plain management regulations the community has adopted to meet the requirements of Sec. 60.3, 60.4 and/or Sec. 60.5 of this subchapter. This submission shall include copies of any zoning, building, and subdivision regulations, health codes, special purpose ordinances (such as a flood plain ordinance, grading ordinance, or flood-related erosion control ordinance), and any other corrective and preventive measures enacted to reduce or prevent flood, mudslide (i.e., mudflow) or flood-related erosion damage;

(4) A list of the incorporated communities within the applicant's boundaries;

(5) Estimates relating to the community as a whole and to the flood, mudslide (i.e., mudflow) and flood-related erosion prone areas concerning:

(i) Population;

(ii) Number of one to four family residences;

(iii) Number of small businesses; and

(iv) Number of all other structures.

(6) Address of a local repository, such as a municipal building, where the Flood Hazard Boundary Maps (FHBM's) and Flood Insurance Rate Maps (FIRM's) will be made available for public inspection;

(7) A summary of any State or Federal activities with respect to flood plain, mudslide (i.e., mudflow) or flood-related erosion area management within the community, such as federally-funded flood control projects and State-administered flood plain management regulations;

(8) A commitment to recognize and duly evaluate flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards in all official actions in the areas having special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards and to take such other official action reasonably necessary to carry out the objectives of the program; and

(9) A commitment to:

(i) Assist the Administrator at his/her request, in his/her delineation of the limits of the areas having special flood, mudslide

(i.e., mudflow) or flood-related erosion hazards;

(ii) Provide such information concerning present uses and occupancy of the flood plain, mudslide (i.e., mudflow) or flood-related erosion areas as the Administrator may request;

(iii) Maintain for public inspection and furnish upon request, for the determination of applicable flood insurance risk premium rates within all areas having special flood hazards identified on a FHBM or FIRM, any certificates of floodproofing, and information on the elevation (in relation to mean sea level) of the level of the lowest floor (including basement) of all new or substantially improved structures, and include whether or not such structures contain a basement, and if the structure has been floodproofed, the elevation (in relation to mean sea level) to which the structure was floodproofed;

(iv) Cooperate with Federal, State, and local agencies and private firms which undertake to study, survey, map, and identify flood plain, mudslide (i.e., mudflow) or flood-related erosion areas, and cooperate with neighboring communities with respect to the management of adjoining flood plain, mud slide (i.e., mudflow) and/or flood-related erosion areas in order to prevent aggravation of existing hazards;

(v) Upon occurrence, notify the Administrator in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce flood

plain management regulations for a particular area. In order that all FHBM's and FIRM's accurately represent the community's boundaries, include within such notification a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished flood plain management regulatory authority.

(b) An applicant shall legislatively:

(1) Appoint or designate the agency or official with the responsibility, authority, and means to implement the commitments made in paragraph

(a) of this section, and

(2) Designate the official responsible to submit a report to the Administrator concerning the community participation in the Program, including, but not limited to the development and implementation of flood plain management regulations. This report shall be submitted annually or biennially as determined by the Administrator.

(c) The documents required by paragraph (a) of this section and evidence of the actions required by paragraph (b) of this section shall be submitted to the

Federal Emergency Management Agency, Washington DC 20472.

[41 FR 46968, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979 and amended at 48 FR 29318, June 24, 1983; 48 FR 44543 and 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 49 FR 33656, Aug. 24, 1984; 50 FR 36023, Sept. 4, 1985]

§ 59.23 Priorities for the sale of flood insurance under the regular program.

Flood-prone, mudslide (i.e., mudflow) and flood-related erosion prone communities are placed on a register of areas eligible for ratemaking studies and then selected from this register for ratemaking studies on the basis of the following considerations--

- (a) Recommendations of State officials;
- (b) Location of community and urgency of need for flood insurance;
- (c) Population of community and intensity of existing or proposed development of the flood plain, the mud slide (i.e., mudflow) and the flood-related erosion area;
- (d) Availability of information on the community with respect to its flood, mudslide (i.e., mudflow) and flood-related erosion characteristics and previous losses;
- (e) Extent of State and local progress in flood plain, mudslide (i.e., mudflow) area and flood-related erosion area management, including adoption of flood plain management regulations consistent with related ongoing programs in the area.

[41 FR 46968, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979]

§ 59.24 Suspension of community eligibility.

(a) A community eligible for the sale of flood insurance shall be subject to suspension from the Program for failing to submit copies of adequate flood plain management regulations meeting the minimum requirements of paragraphs (b), (c), (d), (e) or (f) of Sec.60.3 or paragraph (b) of Sec.60.4 or Sec.60.5, within six months from the date the Administrator provides the data upon which the flood plain regulations for the applicable paragraph shall be based. Where there has not been any submission by the community, the Administrator shall notify the community that 90 days remain in the six month period in order to submit adequate flood plain management regulations. Where there has been an inadequate submission, the Administrator shall notify

the community of the specific deficiencies in its submitted flood plain management regulations and inform the community of the amount of time remaining within the six month period. If, subsequently, copies of adequate flood plain management regulations are not received by the Administrator, no later than 30 days before the expiration of the original six month period the Administrator shall provide written notice to the community and to the state and assure publication in the Federal Register under part 64 of this subchapter of the community's loss of eligibility for the sale of flood insurance, such suspension to become effective upon the expiration of the six month period. Should the community remedy the defect and the Administrator receive copies of adequate flood plain management regulations within the notice period, the suspension notice shall be rescinded by the Administrator. If the Administrator receives notice from the State that it has enacted adequate flood plain management regulations for the community within the notice period, the suspension notice shall be rescinded by the Administrator. The community's eligibility shall remain terminated after suspension until copies of adequate flood plain management regulations have been received and approved by the Administrator.

(b) A community eligible for the sale of flood insurance which fails to adequately enforce flood plain management regulations meeting the minimum requirements set forth in Sec. 60.3, 60.4 and/or 60.5 shall be subject to probation. Probation shall represent formal notification to the community that the Administrator regards the community's flood plain management program as not compliant with NFIP criteria. Prior to imposing probation, the Administrator

(1) shall inform the community upon 90 days prior written notice of the impending probation and of the specific program deficiencies and violations relative to the failure to enforce,

(2) shall, at least 60 days before probation is to begin, issue a press release to local media explaining the reasons for and the effects of probation, and

(3) shall, at least 90 days before probation is to begin, advise all policyholders in the community of the impending probation and the additional premium that will be charged, as provided in this paragraph, on policies sold or renewed during the period of probation. During this 90-day period the community shall have the opportunity to avoid probation by demonstrating compliance with Program

requirements, or by correcting Program deficiencies and remedying all violations to the maximum extent possible. If, at the end of the 90-day period, the Administrator determines that the community has failed to do so, the probation shall go into effect. Probation may be continued for up to one year after the community corrects all Program deficiencies and remedies all violations to the maximum extent possible. Flood insurance may be sold or renewed in the community while it is on probation. Where a policy covers property located in a community placed on probation on or after October 1, 1986, but prior to October 1, 1992, an additional premium of \$25.00 shall be charged on each such policy newly issued or renewed during the one-year period beginning on the date the community is placed on probation and during any successive one-year periods that begin prior to October 1, 1992. Where a community's probation begins on or after October 1, 1992, the additional premium described in the preceding sentence shall be \$50.00, which shall also be charged during any successive one-year periods during which the community remains on probation for any part thereof. This \$50.00 additional premium shall further be charged during any successive one-year periods that begin on or after October 1, 1992, where the preceding one-year probation period began prior to October 1, 1992.

(c) A community eligible for the sale of flood insurance which fails to adequately enforce its flood plain management regulations meeting the minimum requirements set forth in Sec. 60.3, 60.4 and/or 60.5 and does not correct its Program deficiencies and remedy all violations to the maximum extent possible in accordance with compliance deadlines established during a period of probation shall be subject to suspension of its Program eligibility. Under such circumstances, the Administrator shall grant the community 30 days in which to show cause why it should not be suspended. The Administrator may conduct a hearing, written or oral, before commencing suspensive action. If a community is to be suspended, the Administrator shall inform it upon 30 days prior written notice and upon publication in the Federal Register under part 64 of this subchapter of its loss of eligibility for the sale of flood insurance. In the event of impending suspension, the Administrator shall issue a press release to the local media explaining the reasons and effects of the suspension. The community's eligibility shall only be reinstated by the Administrator upon his

receipt of a local legislative or executive measure reaffirming the community's formal intent to adequately enforce the flood plain management requirements of this subpart, together with evidence of action taken by the community to correct Program deficiencies and remedy to the maximum extent possible those violations which caused the suspension. In certain cases, the Administrator, in order to evaluate the community's performance under the terms of its submission, may withhold reinstatement for a period not to exceed one year from the date of his receipt of the satisfactory submission or place the community on probation as provided for in paragraph (b) of this section.

(d) A community eligible for the sale of flood insurance which repeals its flood plain management regulations, allows its regulations to lapse, or amends its regulations so that they no longer meet the minimum requirements set forth in Sec. 60.3, 60.4 and/or 60.5 shall be suspended from the Program. If a community is to be suspended, the Administrator shall inform it upon 30 days prior written notice and upon publication in the Federal Register under part 64 of this subchapter of its loss of eligibility for the sale of flood insurance. The community eligibility shall remain terminated after suspension until copies of adequate flood plain management regulations have been received and approved by the Administrator.

(e) A community eligible for the sale of flood insurance may withdraw from the Program by submitting to the Administrator a copy of a legislative action that explicitly states its desire to withdraw from the National Flood Insurance Program. Upon receipt of a certified copy of a final legislative action, the Administrator shall withdraw the community from the Program and publish in the Federal Register under part 64 of this subchapter its loss of eligibility for the sale of flood insurance. A community that has withdrawn from the Program may be reinstated if it submits the application materials specified in Sec. 59.22(a).

(f) If during a period of ineligibility under paragraphs (a), (d), or (e) of this section, a community has permitted actions to take place that have aggravated existing flood plain, mudslide (i.e., mudflow) and/or flood related erosion hazards, the Administrator may withhold reinstatement until the community submits evidence that it has taken action to remedy to the maximum extent possible the increased hazards. The Administrator may also place the reinstated community on probation as provided for in paragraph

(b) of this section.

(g) The Administrator shall promptly notify the servicing company and any insurers issuing flood insurance pursuant to an arrangement with the Administrator of those communities whose eligibility has been suspended or which have withdrawn from the program. Flood insurance shall not be sold or renewed in those communities. Policies sold or renewed within a community during a period of ineligibility are deemed to be voidable by the Administrator whether or not the parties to sale or renewal had actual notice of the ineligibility.

[41 FR 46968, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, and amended at 48 FR 44543 and 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 50 FR 36023, Sept. 4, 1985; 57 FR 19540, May 7, 1992; 59 FR 53598, Oct. 25, 1994; 62 FR 55715, Oct. 27, 1997]

PART 60--CRITERIA FOR LAND MANAGEMENT AND USE

Subpart A--Requirements for Flood Plain Management Regulations

Sec.

60.1 Purpose of subpart.

60.2 Minimum compliance with flood plain management criteria.

60.3 Flood plain management criteria for flood-prone areas.

60.4 Flood plain management criteria for mudslide (i.e., mudflow)-prone areas.

60.5 Flood plain management criteria for flood-related erosion-prone areas.

60.6 Variances and exceptions.

60.7 Revisions of criteria for flood plain management regulations.

60.8 Definitions.

Subpart B--Requirements for State Flood Plain Management Regulations

Sec.

60.11 Purpose of this subpart.

60.12 Flood plain management criteria for State-owned properties in special hazard areas.

60.13 Noncompliance.

Subpart C--Additional Considerations in Managing Flood-Prone, Mudslide (i.e., Mudflow)-Prone, and Flood-Related Erosion-Prone Areas

Sec.

60.21 Purpose of this subpart.

60.22 Planning considerations for flood-prone areas.

60.23 Planning considerations for mudslide (i.e., mudflow)-prone areas.

60.24 Planning considerations for flood-related erosion-prone areas.

60.25 Designation, duties, and responsibilities of State Coordinating Agencies.

60.26 Local coordination.

Authority: 42 U.S.C. 4001 et seq.; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127 of Mar. 31, 1979, 44 FR 19367, 3 CFR, 1979 Comp., p. 376.

Source: 41 FR 46975, Oct. 26, 1976, unless otherwise noted. Redesignated at 44 FR 31177, May 31, 1979.

§ 60.1 Purpose of subpart.

(a) The Act provides that flood insurance shall not be sold or renewed under the program within a community, unless the community has adopted adequate flood plain management regulations consistent with Federal criteria. Responsibility for establishing such criteria is delegated to the Administrator.

(b) This subpart sets forth the criteria developed in accordance with the Act by which the Administrator will determine the adequacy of a community's flood plain management regulations. These regulations must be legally-enforceable, applied uniformly throughout the community to all privately and publicly owned land within flood-prone, mudslide (i.e., mudflow) or flood-related erosion areas, and the community must provide that the regulations take precedence over any less restrictive conflicting local laws, ordinances or codes. Except as otherwise provided in Sec. 60.6, the adequacy of such regulations shall be determined on the basis of the standards set forth in Sec. 60.3 for flood-prone areas, Sec. 60.4 for mudslide areas and Sec. 60.5 for flood-related erosion areas.

(c) Nothing in this subpart shall be construed as modifying or replacing the general requirement that all eligible communities must take into account flood, mudslide (i.e., mudflow) and flood-related erosion hazards, to the extent that they are known, in all official actions relating to land management and use.

(d) The criteria set forth in this subpart are minimum standards for the adoption of flood plain management regulations by flood-prone, mudslide (i.e., mudflow)-prone and flood-related erosion-prone communities. Any community may exceed the minimum criteria under this part by adopting more comprehensive flood plain management regulations utilizing the standards such as contained in subpart C of this part. In some instances, community officials may have access to information or knowledge of conditions that require, particularly for human safety, higher standards than the minimum criteria set forth in subpart A of this part. Therefore, any flood plain management regulations adopted by a State or a community which are more restrictive than the criteria set forth in this part are encouraged and shall take precedence.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 60.2 Minimum compliance with flood plain management criteria.

(a) A flood-prone community applying for flood insurance eligibility shall meet the standards of Sec.60.3(a) in order to become eligible if a FHBM has not been issued for the community at the time of application. Thereafter, the community will be given a period of six months from the date the Administrator provides the data set forth in Sec.60.3(b), (c), (d), (e) or (f), in which to meet the requirements of the applicable paragraph. If a community has received a FHBM, but has not yet applied for Program eligibility, the community shall apply for eligibility directly under the standards set forth in Sec.60.3(b). Thereafter, the community will be given a period of six months from the date the Administrator provides the data set forth in Sec.60.3(c), (d), (e) or (f) in which to meet the requirements of the applicable paragraph.

(b) A mudslide (i.e., mudflow)-prone community applying for flood insurance eligibility shall meet the standards of Sec. 60.4(a) to become eligible. Thereafter, the community will be given a period of six months from the date the mudslide (i.e., mudflow) areas having special mudslide hazards are delineated in which to meet the requirements of Sec. 60.4(b).

(c) A flood-related erosion-prone community applying for flood insurance eligibility shall meet the standards of Sec. 60.5(a) to become eligible. Thereafter, the community will be given a period of

six months from the date the flood-related erosion areas having special erosion hazards are delineated in which to meet the requirements of Sec. 60.5(b).

(d) Communities identified in part 65 of this subchapter as containing more than one type of hazard (e.g., any combination of special flood, mudslide (i.e., mudflow), and flood-related erosion hazard areas) shall adopt flood plain management regulations for each type of hazard consistent with the requirements of Sec. Sec. 60.3, 60.4 and 60.5.

(e) Local flood plain management regulations may be submitted to the State Coordinating Agency designated pursuant to Sec. 60.25 for its advice and concurrence. The submission to the State shall clearly describe proposed enforcement procedures.

(f) The community official responsible for submitting annual or biennial reports to the Administrator pursuant to Sec. 59.22(b)(2) of this subchapter shall also submit copies of each annual or biennial report to any State Coordinating Agency.

(g) A community shall assure that its comprehensive plan is consistent with the flood plain management objectives of this part.

(h) The community shall adopt and enforce flood plain management regulations based on data provided by the Administrator. Without prior approval of the Administrator, the community shall not adopt and enforce flood plain management regulations based upon modified data reflecting natural or man-made physical changes.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 29318, June 24, 1983; 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 50 FR 36024, Sept. 4, 1985; 59 FR 53598, Oct. 25, 1994; 62 FR 55716, Oct. 27, 1997]

§ 60.3 Flood plain management criteria for flood-prone areas.

The Administrator will provide the data upon which flood plain management regulations shall be based. If the Administrator has not provided sufficient data to furnish a basis for these regulations in a particular community, the community shall obtain, review and reasonably utilize data available from other Federal, State or other sources pending receipt of data from the Administrator. However, when special flood hazard area designations and water surface elevations have been furnished by the Administrator, they shall apply. The symbols defining such special flood hazard designations are set forth in Sec. 64.3 of this subchapter. In all cases the minimum requirements

governing the adequacy of the flood plain management regulations for flood-prone areas adopted by a particular community depend on the amount of technical data formally provided to the community by the Administrator. Minimum standards for communities are as follows:

(a) When the Administrator has not defined the special flood hazard areas within a community, has not provided water surface elevation data, and has not provided sufficient data to identify the floodway or coastal high hazard area, but the community has indicated the presence of such hazards by submitting an application to participate in the Program, the community shall:

(1) Require permits for all proposed construction or other development in the community, including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas;

(2) Review proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334;

(3) Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding. If a proposed building site is in a flood-prone area, all new construction and substantial improvements shall

(i) be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, (ii) be constructed with materials resistant to flood damage, (iii) be constructed by methods and practices that minimize flood damages, and (iv) 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.

(4) Review subdivision proposals and other proposed new development, including manufactured home parks or subdivisions, to determine whether such proposals will be reasonably safe from flooding. If a subdivision proposal or other proposed new development is in a flood-prone area, any such proposals shall be reviewed to assure that (i) all such proposals are consistent with the need to minimize flood damage within the flood-prone area, (ii) all

public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage, and (iii) adequate drainage is provided to reduce exposure to flood hazards;

(5) Require within flood-prone areas new and replacement water supply systems to be designed to minimize or eliminate infiltration of flood waters into the systems; and

(6) Require within flood-prone areas (i) new and replacement sanitary sewage systems to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters and (ii) onsite waste disposal systems to be located to avoid impairment to them or contamination from them during flooding.

(b) When the Administrator has designated areas of special flood hazards (A zones) by the publication of a community's FHBM or FIRM, but has neither produced water surface elevation data nor identified a floodway or coastal high hazard area, the community shall:

(1) Require permits for all proposed construction and other developments including the placement of manufactured homes, within Zone A on the community's FHBM or FIRM;

(2) Require the application of the standards in paragraphs (a) (2),

(3), (4), (5) and (6) of this section to development within Zone A on the community's FHBM or FIRM;

(3) Require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals base flood elevation data; (4) Obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source, including data developed pursuant to paragraph (b)(3) of this section, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on the community's FHBM or FIRM meet the standards in paragraphs (c)(2), (c)(3), (c)(5), (c)(6), (c)(12), (c)(14), (d)(2) and (d)(3) of this section;

(5) Where base flood elevation data are utilized, within Zone A on the community's FHBM or FIRM:

- (i) Obtain the elevation (in relation to mean sea level) of the lowest floor(including basement) of all new and substantially improved structures, and
- (ii) Obtain, if the structure has been floodproofed in accordance with paragraph (c)(3)(ii) of this section, the elevation (in relation to mean sea level) to which the structure was floodproofed, and
- (iii) Maintain a record of all such information with the official designated by the community under Sec. 59.22 (a)(9)(iii);
- (6) Notify, in riverine situations, adjacent communities and the State Coordinating Office prior to any alteration or relocation of a watercourse, and submit copies of such notifications to the Administrator;
- (7) Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained;
- (8) Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.
- (c) When the Administrator has provided a notice of final flood elevations for one or more special flood hazard areas on the community's FIRM and, if appropriate, has designated other special flood hazard areas without base flood elevations on the community's FIRM, but has not identified a regulatory floodway or coastal high hazard area, the community shall:
 - (1) Require the standards of paragraph (b) of this section within all A1-30 zones, AE zones, A zones, AH zones, and AO zones, on the community's FIRM;
 - (2) Require that all new construction and substantial improvements of residential structures within Zones A1-30, AE and AH zones on the community's FIRM 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 Sec. 60.6 (b) or (c);
 - (3) Require that all new construction and substantial improvements of non-residential structures within Zones A1-30, AE and AH zones on the community's firm (i) have the lowest floor (including basement)

- elevated to or above the base flood level or, (ii) 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;
- (4) Provide that where a non-residential structure is intended to be made watertight below the base flood level, (i) a registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of paragraph (c)(3)(ii) or (c)(8)(ii) of this section, and (ii) a record of such certificates which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained with the official designated by the community under Sec. 59.22(a)(9)(iii);
- (5) Require, for all new construction and substantial improvements, that fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria: A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- (6) Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites
 - (i) Outside of a manufactured home park or subdivision,
 - (ii) In a new manufactured home park or subdivision,
 - (iii) In an expansion to an existing manufactured home park or subdivision, or
 - (iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred ``substantial damage" as the result of a

flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist floatation collapse and lateral movement.

(7) Require within any AO zone on the community's FIRM that all new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified);

(8) Require within any AO zone on the community's FIRM that all new construction and substantial improvements of nonresidential structures

(i) have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified), or

(ii) together with attendant utility and sanitary facilities be completely floodproofed to that level to meet the floodproofing standard specified in Sec. 60.3(c)(3)(ii);

(9) Require within any A99 zones on a community's FIRM the standards of paragraphs (a)(1) through (a)(4)(i) and (b)(5) through (b)(9) of this section;

(10) Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(11) Require within Zones AH and AO, adequate drainage paths around structures on slopes, to guide

floodwaters around and away from proposed structures.

(12) Require that manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within Zones A-1-30, AH, and AE on the community's FIRM that are not subject to the provisions of paragraph (c)(6) of this section be elevated so that either

(i) The lowest floor of the manufactured home is at or above the base flood elevation, or

(ii) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement.

(13) Notwithstanding any other provisions of Sec. 60.3, a community may approve certain development in Zones A1-30, AE, and AH, on the community's FIRM which increase the water surface elevation of the base flood by more than one foot, provided that the community first applies for a conditional FIRM revision, fulfills the requirements for such a revision as established under the provisions of Sec. 65.12, and receives the approval of the Administrator.

(14) Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM either

(i) Be on the site for fewer than 180 consecutive days,

(ii) Be fully licensed and ready for highway use, or

(iii) Meet the permit requirements of paragraph (b)(1) of this section and the elevation and anchoring requirements for "manufactured homes" in paragraph (c)(6) of this section.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

(d) When the Administrator has provided a notice of final base flood elevations within Zones A1-30 and/or AE on the community's FIRM and, if appropriate, has designated AO zones, AH zones, A99 zones, and A zones on the community's FIRM, and has provided data from which the community shall designate its regulatory floodway, the community shall:

(1) Meet the requirements of paragraphs (c) (1) through (14) of this section;

(2) Select and adopt a regulatory floodway based on the principle that the area chosen for the regulatory floodway must be designed to carry the waters of the base flood, without increasing the water surface elevation of that flood more than one foot at any point;

(3) Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge;

(4) Notwithstanding any other provisions of Sec. 60.3, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first applies for a conditional FIRM and floodway revision, fulfills the requirements for such revisions as established under the provisions of Sec. 65.12, and receives the approval of the Administrator.

(e) When the Administrator has provided a notice of final base flood elevations within Zones A1-30 and/or AE on the community's FIRM and, if appropriate, has designated AH zones, AO zones, A99 zones, and A zones on the community's FIRM, and has identified on the community's FIRM coastal high hazard areas by designating Zones V1-30, VE, and/or V, the community shall:

(1) Meet the requirements of paragraphs (c)(1) through (14) of this section;

(2) Within Zones V1-30, VE, and V on a community's FIRM, (i) obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures, and whether or not such structures contain a basement, and (ii) maintain a record of all such information with the official designated by the community under Sec.

59.22(a)(9)(iii);

(3) Provide that all new construction within Zones V1-30, VE, and V on the community's FIRM is located landward of the reach of mean high tide;

(4) Provide that all new construction and substantial improvements in Zones V1-30 and VE, and also Zone V if base flood elevation data is available, on the community's FIRM, are elevated on pilings and columns so that

(i) the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level; and

(ii) the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of paragraphs (e)(4)

(i) and (ii) of this section.

(5) Provide that all new construction and substantial improvements within Zones V1-30, VE, and V on the community's FIRM have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purposes of this section, a breakway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

(i) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and,

(ii) The elevated portion of the building and supporting foundation system shall not be subject to

collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. Such enclosed space shall be useable solely for parking of vehicles, building access, or storage.

(6) Prohibit the use of fill for structural support of buildings within Zones V1-30, VE, and V on the community's FIRM;

(7) Prohibit man-made alteration of sand dunes and mangrove stands within Zones V1-30, VE, and V on the community's FIRM which would increase potential flood damage.

(8) Require that manufactured homes placed or substantially improved within Zones V1-30, V, and VE on the community's FIRM on sites

(i) Outside of a manufactured home park or subdivision,

(ii) In a new manufactured home park or subdivision,

(iii) In an expansion to an existing manufactured home park or subdivision, or

(iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood, meet the standards of paragraphs (e)(2) through (7) of this section and that manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones V1-30, V, and VE on the community's FIRM meet the requirements of paragraph (c)(12) of this section.

(9) Require that recreational vehicles placed on sites within Zones V1-30, V, and VE on the community's FIRM either

(i) Be on the site for fewer than 180 consecutive days,

(ii) Be fully licensed and ready for highway use, or

(iii) Meet the requirements in paragraphs (b)(1) and (e) (2) through (7) of this section.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

(f) When the Administrator has provided a notice of final base flood elevations within Zones A1-30 or AE on the community's FIRM, and, if appropriate, has designated AH zones, AO zones, A99 zones, and A zones on the community's FIRM, and has identified flood protection restoration areas by designating

Zones AR, AR/A1-30, AR/AE, AR/AH, AR/AO, or AR/A, the community shall:

(1) Meet the requirements of paragraphs (c)(1) through (14) and (d)(1) through (4) of this section.

(2) Adopt the official map or legal description of those areas within Zones AR, AR/A1-30, AR/AE, AR/AH, AR/A, or AR/AO that are designated developed areas as defined in Sec.59.1 in accordance with the eligibility procedures under Sec.65.14.

(3) For all new construction of structures in areas within Zone AR that are designated as developed areas and in other areas within Zone AR where the AR flood depth is 5 feet or less:

(i) Determine the lower of either the AR base flood elevation or the elevation that is 3 feet above highest adjacent grade; and

(ii) Using this elevation, require the standards of paragraphs (c)(1) through (14) of this section.

(4) For all new construction of structures in those areas within Zone AR that are not designated as developed areas where the AR flood depth is greater than 5 feet:

(i) Determine the AR base flood elevation; and

(ii) Using that elevation require the standards of paragraphs (c)(1) through (14) of this section.

(5) For all new construction of structures in areas within Zone AR/A1-30, AR/AE, AR/AH, AR/AO, and AR/A:

(i) Determine the applicable elevation for Zone AR from paragraphs (a)(3) and (4) of this section;

(ii) Determine the base flood elevation or flood depth for the underlying A1-30, AE, AH, AO and A Zone; and

(iii) Using the higher elevation from paragraphs (a)(5)(i) and (ii) of this section require the standards of paragraphs (c)(1) through (14) of this section.

(6) For all substantial improvements to existing construction within Zones AR/A1-30, AR/AE, AR/AH, AR/AO, and AR/A:

(i) Determine the A1-30 or AE, AH, AO, or A Zone base flood elevation; and

(ii) Using this elevation apply the requirements of paragraphs (c)(1) through (14) of this section.

(7) Notify the permit applicant that the area has been designated as an AR, AR/A1-30, AR/AE, AR/AH, AR/AO, or AR/A Zone and whether the structure will be elevated or protected to or above the AR base flood elevation.

[41 FR 46975, Oct. 26, 1976]

Editorial Note: For Federal Register citations affecting Sec. 60.3, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 60.4 Flood plain management criteria for mudslide (i.e., mudflow)-prone areas.

The Administrator will provide the data upon which flood plain management regulations shall be based. If the Administrator has not provided sufficient data to furnish a basis for these regulations in a particular community, the community shall obtain, review, and reasonably utilize data available from other Federal, State or other sources pending receipt of data from the Administrator. However, when special mudslide (i.e., mudflow) hazard area designations have been furnished by the Administrator, they shall apply. The symbols defining such special mudslide (i.e., mudflow) hazard designations are set forth in Sec. 64.3 of this subchapter. In all cases, the minimum requirements for mudslide (i.e., mudflow)-prone areas adopted by a particular community depend on the amount of technical data provided to the community by the Administrator. Minimum standards for communities are as follows:

(a) When the Administrator has not yet identified any area within the community as an area having special mudslide (i.e., mudflow) hazards, but the community has indicated the presence of such hazards by submitting an application to participate in the Program, the community shall

(1) Require permits for all proposed construction or other development in the community so that it may determine whether development is proposed within mudslide (i.e., mudflow)-prone areas;

(2) Require review of each permit application to determine whether the proposed site and improvements will be reasonably safe from mudslides (i.e., mudflows). Factors to be considered in making such a determination should include but not be limited to (i) the type and quality of soils, (ii) any evidence of ground water or surface water problems, (iii) the depth and quality of any fill, (iv) the overall slope of the site, and (v) the weight that any proposed structure will impose on the slope;

(3) Require, if a proposed site and improvements are in a location that may have mudslide (i.e., mudflow) hazards, that

(i) a site investigation and further review be made by persons qualified in geology and soils engineering, (ii) the proposed grading, excavations, new construction, and substantial improvements are adequately designed and protected against mudslide (i.e., mudflow) damages, (iii) the proposed grading, excavations, new construction and substantial improvements do not aggravate the existing hazard

by creating either on-site or off-site disturbances, and (iv) drainage, planting, watering, and maintenance be such as not to endanger slope stability.

(b) When the Administrator has delineated Zone M on the community's FIRM, the community shall:

(1) Meet the requirements of paragraph (a) of this section; and

(2) Adopt and enforce a grading ordinance or regulation in accordance with data supplied by the Administrator which (i) regulates the location of foundation systems and utility systems of new construction and substantial improvements, (ii) regulates the location, drainage and maintenance of all excavations, cuts and fills and planted slopes, (iii) provides special requirements for protective measures including but not necessarily limited to retaining walls, buttress fills, sub-drains, diverter terraces, benchings, etc., and (iv) requires engineering drawings and specifications to be submitted for all corrective measures, accompanied by supporting soils engineering and geology reports. Guidance may be obtained from the provisions of the 1973 edition and any subsequent edition of the Uniform Building Code, sections 7001 through 7006, and 7008 through 7015. The Uniform Building Code is published by the International Conference of Building Officials, 50 South Los Robles, Pasadena, California 91101.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 60.5 Flood plain management criteria for flood-related erosion-prone areas.

The Administrator will provide the data upon which flood plain management regulations for flood-related erosion-prone areas shall be based. If the Administrator has not provided sufficient data to furnish a basis for these regulations in a particular community, the community shall obtain, review, and reasonably utilize data available from other Federal, State or other sources, pending receipt of data from the Administrator. However, when special flood-related erosion hazard area designations have been furnished by the Administrator they shall apply. The symbols defining such special flood-related erosion hazard designations are set forth in Sec. 64.3 of this subchapter. In all cases the minimum requirements governing the adequacy of the flood plain management regulations for flood-related erosion-prone areas adopted by a particular community depend on the amount of technical data provided to

the community by the Administrator. Minimum standards for communities are as follows:

(a) When the Administrator has not yet identified any area within the community as having special flood-related erosion hazards, but the community has indicated the presence of such hazards by submitting an application to participate in the Program, the community shall

(1) Require the issuance of a permit for all proposed construction, or other development in the area of flood-related erosion hazard, as it is known to the community;

(2) Require review of each permit application to determine whether the proposed site alterations and improvements will be reasonably safe from flood-related erosion and will not cause flood-related erosion hazards or otherwise aggravate the existing flood-related erosion hazard; and

(3) If a proposed improvement is found to be in the path of flood-related erosion or to increase the erosion hazard, require the improvement to be relocated or adequate protective measures to be taken which will not aggravate the existing erosion hazard.

(b) When the Administrator has delineated Zone E on the community's FIRM, the community shall

(1) Meet the requirements of paragraph (a) of this section; and

(2) Require a setback for all new development from the ocean, lake, bay, riverfront or other body of water, to create a safety buffer consisting of a natural vegetative or contour strip. This buffer will be designated by the Administrator according to the flood-related erosion hazard and erosion rate, in conjunction with the anticipated "useful life" of structures, and depending upon the geologic, hydrologic, topographic and climatic characteristics of the community's land. The buffer may be used for suitable open space purposes, such as for agricultural, forestry, outdoor recreation and wildlife habitat areas, and for other activities using temporary and portable structures only.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 60.6 Variances and exceptions.

(a) The Administrator does not set forth absolute criteria for granting variances from the criteria set forth in Sec. 60.3, 60.4, and 60.5. The issuance of a variance is for flood plain management purposes only. Insurance premium rates are determined by

statute according to actuarial risk and will not be modified by the granting of a variance. The community, after examining the applicant's hardships, shall approve or disapprove a request. While the granting of variances generally is limited to a lot size less than one-half acre (as set forth in paragraph (a)(2) of this section), deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. The Administrator may review a community's findings justifying the granting of variances, and if that review indicates a pattern inconsistent with the objectives of sound flood plain management, the Administrator may take appropriate action under Sec. 59.24(b) of this subchapter. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. Procedures for the granting of variances by a community are as follows:

(1) Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result;

(2) Variances may be issued by a community for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the procedures of paragraphs (a) (3), (4), (5) and (6) of this section;

(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;

(5) A community shall notify the applicant in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a)(6) of this section; and

(6) A community shall (i) maintain a record of all variance actions, including justification for their issuance, and (ii) report such variances issued in its annual or biennial report submitted to the Administrator.

(7) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria of paragraphs (a)(1) through (a)(4) of this section are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(b)(1) The requirement that each flood-prone, mudslide (i.e., mudflow)-prone, and flood-related erosion prone community must adopt and submit adequate flood plain management regulations as a condition of initial and continued flood insurance eligibility is statutory and cannot be waived, and such regulations shall be adopted by a community within the time periods specified in Sec. 60.3, 60.4 or Sec. 60.5. However, certain exceptions from the standards contained in this subpart may be permitted where the Administrator recognizes that, because of extraordinary circumstances, local conditions may render the application of certain standards the cause for severe hardship and gross inequity for a particular community. Consequently, a community proposing the adoption of flood plain management regulations which vary from the standards set forth in Sec. 60.3, 60.4, or Sec. 60.5, shall explain in writing to the Administrator the nature and extent of and the reasons for the exception request and shall include sufficient supporting economic, environmental, topographic, hydrologic, and other scientific and technical data, and data with respect to the impact on public safety and the environment.

(2) The Administrator shall prepare a Special Environmental Clearance to determine whether the proposal for an exception under paragraph (b)(1) of this section will have significant impact on the human

environment. The decision whether an Environmental Impact Statement or other environmental document will be prepared, will be made in accordance with the procedures set out in 44 CFR part 10. Ninety or more days may be required for an environmental quality clearance if the proposed exception will have significant impact on the human environment thereby requiring an EIS.

(c) A community may propose flood plain management measures which adopt standards for floodproofed residential basements below the base flood level in zones A1-30, AH, AO, and AE which are not subject to tidal flooding. Notwithstanding the requirements of paragraph

(b) of this section the Administrator may approve the proposal provided that:

(1) The community has demonstrated that areas of special flood hazard in which basements will be permitted are subject to shallow and low velocity flooding and that there is adequate flood warning time to ensure that all residents are notified of impending floods. For the purposes of this paragraph flood characteristics must include:

(i) Flood depths that are five feet or less for developable lots that are contiguous to land above the base flood level and three feet or less for other lots;

(ii) Flood velocities that are five feet per second or less; and (iii) Flood warning times that are 12 hours or greater. Flood warning times of two hours or greater may be approved if the community demonstrates that it has a flood warning system and emergency plan in operation that is adequate to ensure safe evacuation of flood plain residents.

(2) The community has adopted flood plain management measures that require that new construction and substantial improvements of residential structures with basements in zones A1-30, AH, AO, and AE shall:

(i) Be designed and built so that any basement area, together with attendant utilities and sanitary facilities below the floodproofed design level, is watertight with walls that are impermeable to the passage of water without human intervention. Basement walls shall be built with the capacity to resist hydrostatic and hydrodynamic loads and the effects of buoyancy resulting from flooding to the floodproofed design level, and shall be designed so that minimal damage will occur from floods that exceed that level. The floodproofed design level shall be an elevation one foot above the level of the base flood where the difference between the base flood and the 500-year flood is three feet or less and two feet above the level

of the base flood where the difference is greater than three feet.

(ii) Have the top of the floor of any basement area no lower than five feet below the elevation of the base flood;

(iii) Have the area surrounding the structure on all sides filled to or above the elevation of the base flood. Fill must be compacted with slopes protected by vegetative cover;

(iv) Have a registered professional engineer or architect develop or review the building's structural design, specifications, and plans, including consideration of the depth, velocity, and duration of flooding and type and permeability of soils at the building site, and certify that the basement design and methods of construction proposed are in accordance with accepted standards of practice for meeting the provisions of this paragraph;

(v) Be inspected by the building inspector or other authorized representative of the community to verify that the structure is built according to its design and those provisions of this section which are verifiable.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44543 and 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 50 FR 36025, Sept. 4, 1985; 51 FR 30308, Aug. 25, 1986; 54 FR 33550, Aug. 15, 1989]

§ 60.7 Revisions of criteria for flood plain management regulations.

From time to time part 60 may be revised as experience is acquired under the Program and new information becomes available. Communities will be given six months from the effective date of any new regulation to revise their flood plain management regulations to comply with any such changes.

§ 60.8 Definitions.

The definitions set forth in part 59 of this subchapter are applicable to this part.

Subpart B--Requirements for State Flood Plain Management Regulations

§ 60.11 Purpose of this subpart.

(a) A State is considered a "community" pursuant to Sec. 59.1 of this subchapter; and, accordingly, the Act provides that flood insurance shall not be sold or renewed under the Program unless a community has adopted adequate flood plain management regulations consistent with criteria established by the Administrator.

(b) This subpart sets forth the flood plain management criteria required for State-owned properties located within special hazard areas identified by the Administrator. A State shall satisfy such criteria as a condition to the purchase of a Standard Flood Insurance Policy for a State-owned structure or its contents, or as a condition to the approval by the Administrator, pursuant to part 75 of this subchapter, of its plan of self-insurance.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 60.12 Flood plain management criteria for State-owned properties in special hazard areas.

(a) The State shall comply with the minimum flood plain management criteria set forth in Sec. Sec. 60.3, 60.4, and 60.5. A State either shall:

(1) Comply with the flood plain management requirements of all local communities participating in the program in which State-owned properties are located; or (2) Establish and enforce flood plain management regulations which, at a minimum, satisfy the criteria set forth in Sec. 60.3, 60.4, and 60.5.

(b) The procedures by which a state government adopts and administers flood plain management regulations satisfying the criteria set forth in Sec. 60.3, 60.4 and 60.5 may vary from the procedures by which local governments satisfy the criteria.

(c) If any State-owned property is located in a non-participating local community, then the State shall comply with the requirements of paragraph (a)(2) of this section for the property.

§ Sec. 60.13 Noncompliance.

If a State fails to submit adequate flood plain management regulations applicable to State-owned properties pursuant to Sec. 60.12 within six months of the effective date of this regulation, or fails to adequately enforce such regulations, the State shall be subject to suspensive action pursuant to Sec. 59.24. Where the State fails to adequately enforce its flood plain management regulations, the Administrator shall conduct a hearing before initiating such suspensive action.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

Subpart C--Additional Considerations in Managing Flood-Prone, Mudslide (i.e., Mudflow)-Prone and Flood-Related Erosion-Prone Areas

§ 60.21 Purpose of this subpart.

The purpose of this subpart is to encourage the formation and adoption of overall comprehensive management plans for flood-prone, mudslide (i.e., mudflow)-prone and flood-related erosion-prone areas. While adoption by a community of the standards in this subpart is not mandatory, the community shall completely evaluate these standards.

§ 60.22 Planning considerations for flood-prone areas.

(a) The flood plain management regulations adopted by a community for flood-prone areas should:

(1) Permit only that development of flood-prone areas which (i) is appropriate in light of the probability of flood damage and the need to reduce flood losses, (ii) is an acceptable social and economic use of the land in relation to the hazards involved, and (iii) does not increase the danger to human life;

(2) Prohibit nonessential or improper installation of public utilities and public facilities in flood-prone areas.

(b) In formulating community development goals after the occurrence of a flood disaster, each community shall consider--

(1) Preservation of the flood-prone areas for open space purposes;

(2) Relocation of occupants away from flood-prone areas;

(3) Acquisition of land or land development rights for public purposes consistent with a policy of minimization of future property losses;

(4) Acquisition of frequently flood-damaged structures;

(c) In formulating community development goals and in adopting flood plain management regulations, each community shall consider at least the following factors--

(1) Human safety;

(2) Diversion of development to areas safe from flooding in light of the need to reduce flood damages and in light of the need to prevent environmentally incompatible flood plain use;

(3) Full disclosure to all prospective and interested parties (including but not limited to purchasers and renters) that

(i) certain structures are located within flood-prone areas,

(ii) variances have been granted for certain structures located within flood-prone areas, and

(iii) premium rates applied to new structures built at elevations below the base flood substantially increase as the elevation decreases;

(4) Adverse effects of flood plain development on existing development;

(5) Encouragement of floodproofing to reduce flood damage;

(6) Flood warning and emergency preparedness plans;

(7) Provision for alternative vehicular access and escape routes when normal routes are blocked or destroyed by flooding;

(8) Establishment of minimum floodproofing and access requirements for schools, hospitals, nursing homes, orphanages, penal institutions, fire stations, police stations, communications centers, water and sewage pumping stations, and other public or quasi-public facilities already located in the flood-prone area, to enable them to withstand flood damage, and to facilitate emergency operations;

(9) Improvement of local drainage to control increased runoff that might increase the danger of flooding to other properties;

(10) Coordination of plans with neighboring community's flood plain management programs;

(11) The requirement that all new construction and substantial improvements in areas subject to subsidence be elevated above the base flood level equal to expected subsidence for at least a ten year period;

(12) For riverine areas, requiring subdividers to furnish delineations for floodways before approving a subdivision;

(13) Prohibition of any alteration or relocation of a watercourse, except as part of an overall drainage basin plan. In the event of an overall drainage basin plan, provide that the flood carrying capacity within the altered or relocated portion of the watercourse is maintained;

(14) Requirement of setbacks for new construction within Zones V1-30, VE, and V on a community's FIRM;

(15) Requirement of additional elevation above the base flood level for all new construction and substantial improvements within Zones A1-30, AE, V1-30, and VE on the community's FIRM to protect against such occurrences as wave wash and floating

debris, to provide an added margin of safety against floods having a magnitude greater than the base flood, or to compensate for future urban development;

(16) Requirement of consistency between state, regional and local comprehensive plans and flood plain management programs;

(17) Requirement of pilings or columns rather than fill, for the elevation of structures within flood-prone areas, in order to maintain the storage capacity of the flood plain and to minimize the potential for negative impacts to sensitive ecological areas;

(18) Prohibition, within any floodway or coastal high hazard area, of plants or facilities in which hazardous substances are manufactured.

(19) Requirement that a plan for evacuating residents of all manufactured home parks or subdivisions located within flood prone areas be developed and filed with and approved by appropriate community emergency management authorities. [41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 50 FR 36025, Sept. 4, 1985; 54 FR 40284, Sept. 29, 1989]

§ 60.23 Planning considerations for mud slide (i.e., mudflow)-prone areas.

The planning process for communities identified under part 65 of this subchapter as containing Zone M, or which indicate in their applications for flood insurance pursuant to Sec. 59.22 of this subchapter that they have mudslide (i.e., mudflow) areas, should include--

(a) The existence and extent of the hazard;

(b) The potential effects of inappropriate hillside development, including

(1) Loss of life and personal injuries, and

(2) Public and private property losses, costs, liabilities, and exposures resulting from potential mudslide (i.e., mudflow) hazards;

(c) The means of avoiding the hazard including the

(1) availability of land which is not mudslide (i.e., mudflow)-prone and the feasibility of developing such land instead of further encroaching upon mudslide (i.e., mudflow) areas, (2) possibility of public acquisition of land, easements, and development rights to assure the proper development of hillsides, and

(3) advisability of preserving mudslide (i.e., mudflow) areas as open space;

(d) The means of adjusting to the hazard, including the (1) establishment by ordinance of site exploration, investigation, design, grading, construction, filing,

compacting, foundation, sewerage, drainage, subdrainage, planting, inspection and maintenance standards and requirements that promote proper land use, and

(2) provision for proper drainage and subdrainage on public property and the location of public utilities and service facilities, such as sewer, water, gas and electrical systems and streets in a manner designed to minimize exposure to mudslide (i.e., mudflow) hazards and prevent their aggravation;

(e) Coordination of land use, sewer, and drainage regulations and ordinances with fire prevention, flood plain, mudslide (i.e., mudflow), soil, land, and water regulation in neighboring communities;

(f) Planning subdivisions and other developments in such a manner as to avoid exposure to mudslide (i.e., mudflow) hazards and the control of public facility and utility extension to discourage inappropriate development;

(g) Public facility location and design requirements with higher site stability and access standards for schools, hospitals, nursing homes, orphanages, correctional and other residential institutions, fire and police stations, communication centers, electric power transformers and substations, water and sewer pumping stations and any other public or quasi-public institutions located in the mudslide (i.e., mudflow) area to enable them to withstand mudslide (i.e., mudflow) damage and to facilitate emergency operations; and

(h) Provision for emergencies, including:

(1) Warning, evacuation, abatement, and access procedures in the event of mudslide (i.e., mudflow),

(2) Enactment of public measures and initiation of private procedures to limit danger and damage from continued or future mudslides (i.e., mudflow),

(3) Fire prevention procedures in the event of the rupture of gas or electrical distribution systems by mudslides,

(4) Provisions to avoid contamination of water conduits or deterioration of slope stability by the rupture of such systems,

(5) Similar provisions for sewers which in the event of rupture pose both health and site stability hazards and

(6) Provisions for alternative vehicular access and escape routes when normal routes are blocked or destroyed by mudslides (i.e., mudflow);

(i) The means for assuring consistency between state, areawide, and local comprehensive plans with the plans developed for mudslide (i.e., mudflow)-prone areas;

(j) Deterring the nonessential installation of public utilities and public facilities in mudslide (i.e., mudflow)-prone areas.

§ 60.24 Planning considerations for flood-related erosion-prone areas.

The planning process for communities identified under part 65 of this subchapter as containing Zone E or which indicate in their applications for flood insurance coverage pursuant to Sec.

59.22 of this subchapter that they have flood-related erosion areas should include--

- (a) The importance of directing future developments to areas not exposed to flood-related erosion;
- (b) The possibility of reserving flood-related erosion-prone areas for open space purposes;
- (c) The coordination of all planning for the flood-related erosion-prone areas with planning at the State and Regional levels, and with planning at the level of neighboring communities;
- (d) Preventive action in E zones, including setbacks, shore protection works, relocating structures in the path of flood-related erosion, and community acquisition of flood-related erosion-prone properties for public purposes;
- (e) Consistency of plans for flood-related erosion-prone areas with comprehensive plans at the state, regional and local levels.

§ 60.25 Designation, duties, and responsibilities of State Coordinating Agencies.

(a) States are encouraged to demonstrate a commitment to the minimum flood plain management criteria set forth in Sec. Sec. 60.3, 60.4, and 60.5 as evidenced by the designation of an agency of State government to be responsible for coordinating the Program aspects of flood plain management in the State.

(b) State participation in furthering the objectives of this part shall include maintaining capability to perform the appropriate duties and responsibilities as follows:

- (1) Enact, whenever necessary, legislation enabling counties and municipalities to regulate development within flood-prone areas;
- (2) Encourage and assist communities in qualifying for participation in the Program;
- (3) Guide and assist county and municipal public bodies and agencies in developing, implementing, and maintaining local flood plain management regulations;
- (4) Provide local governments and the general public

with Program information on the coordination of local activities with Federal and State requirements for managing flood-prone areas;

(5) Assist communities in disseminating information on minimum elevation requirements for development within flood-prone areas;

(6) Assist in the delineation of riverine and coastal flood-prone areas, whenever possible, and provide all relevant technical information to the Administrator;

(7) Recommend priorities for Federal flood plain management activities in relation to the needs of county and municipal localities within the State;

(8) Provide notification to the Administrator in the event of apparent irreconcilable differences between a community's local flood plain management program and the minimum requirements of the Program;

(9) Establish minimum State flood plain management regulatory standards consistent with those established in this part and in conformance with other Federal and State environmental and water pollution standards for the prevention of pollution during periods of flooding;

(10) Assure coordination and consistency of flood plain management activities with other State, areawide, and local planning and enforcement agencies;

(11) Assist in the identification and implementation of flood hazard mitigation recommendations which are consistent with the minimum flood plain management criteria for the Program;

(12) Participate in flood plain management training opportunities and other flood hazard preparedness programs whenever practicable.

(c) Other duties and responsibilities, which may be deemed appropriate by the State and which are to be officially designated as being conducted in the capacity of the State Coordinating Agency for the Program, may be carried out with prior notification of the Administrator.

(d) For States which have demonstrated a commitment to and experience in application of the minimum flood plain management criteria set forth in Sec. 60.3, 60.4, and 60.5 as evidenced by the establishment and implementation of programs which substantially encompass the activities described in paragraphs (a), (b), and (c) of this section, the Administrator shall take the foregoing into account when:

- (1) Considering State recommendations prior to implementing Program activities affecting State communities;
- (2) Considering State approval or certifications of

local flood plain management regulations as meeting the requirements of this part.
[51 FR 30309, Aug. 25, 1986]

§ 60.26 Local coordination.

(a) Local flood plain, mudslide (i.e., mudflow) and flood-related erosion area management, forecasting, emergency preparedness, and damage abatement programs should be coordinated with relevant Federal, State, and regional programs;

(b) A community adopting flood plain management regulations pursuant to these criteria should coordinate with the appropriate State agency to promote public acceptance and use of effective flood plain, mudslide, (i.e., mudflow) and flood-related erosion regulations;

(c) A community should notify adjacent communities prior to substantial commercial developments and large subdivisions to be undertaken in areas having special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards.

PART 65--IDENTIFICATION AND MAPPING OF SPECIAL HAZARD AREAS-

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Authority: 42 U.S.C. 4001 et seq.; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127 of Mar. 31, 1979, 44 FR 19367, 3 CFR, 1979 Comp., p. 376.

§ 65.1 Purpose of part.

42 U.S.C. 4104 authorizes the Director to identify and publish information with respect to all areas within the United States having special flood, mudslide (i.e., mudflow) and flood-related erosion hazards. The purpose of this part is to outline the steps a community needs to take in order to assist the Agency's effort in providing up-to-date identification and publication, in the form of the maps described in part 64, on special flood, mudslide (i.e., mudflow) and flood-related erosion hazards.

[48 FR 28278, June 21, 1983]

§ 65.2 Definitions.

(a) Except as otherwise provided in this part, the definitions set forth in part 59 of this subchapter are applicable to this part.

(b) For the purpose of this part, a certification by a registered professional engineer or other party does not constitute a warranty or guarantee of performance, expressed or implied. Certification of data is a statement that the data is accurate to the best of the certifier's knowledge. Certification of analyses is a statement that the analyses have been performed correctly and in accordance with sound engineering practices. Certification of structural works is a statement that the works are designed in accordance with sound engineering practices to provide protection from the base flood. Certification of "as built" conditions is a statement that the structure(s) has been built according to the plans being certified, is in place, and is fully functioning.

(c) For the purposes of this part, "reasonably safe from flooding" means base flood waters will not inundate the land or damage structures to be removed from the SFHA and that any subsurface waters related to the base flood will not damage existing or proposed buildings.

[51 FR 30313, Aug. 25, 1986, as amended at 66 FR 22442, May 4, 2001]

§ 65.3 Requirement to submit new technical data.

A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information

becomes available, a community shall notify the Administrator of the changes by submitting technical or scientific data in accordance with this part. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

[51 FR 30313, Aug. 25, 1986]

§ 65.4 Right to submit new technical data.

(a) A community has a right to request changes to any of the information shown on an effective map that does not impact flood plain or floodway delineations or base flood elevations, such as community boundary changes, labeling, or planimetric details. Such a submission shall include appropriate supporting documentation in accordance with this part and may be submitted at any time.

(b) All requests for changes to effective maps, other than those Initiated by FEMA, must be made in writing by the Chief Executive Officer of the community (CEO) or an official designated by the CEO. Should the CEO refuse to submit such a request on behalf of another party, FEMA will agree to review it only if written evidence is provided indicating the CEO or designee has been requested to do so. (c) Requests for changes to effective Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs) are subject to the cost recovery procedures described in 44 CFR part 72. As indicated in part 72, revisions requested to correct mapping errors or errors in the Flood Insurance Study analysis are not to be subject to the cost-recovery procedures.

[51 FR 30313, Aug. 25, 1986, as amended at 57 FR 29038, June 30, 1992; 61 FR 46331, Aug. 30, 1996; 62 FR 5736, Feb. 6, 1997]

Editorial Note: For references to FR pages showing lists of eligible communities, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 65.5 Revision to special hazard area boundaries with no change to base flood elevation determinations.

(a) Data requirements for topographic changes. In many areas of special flood hazard (excluding V zones and floodways) it may be feasible to elevate areas with engineered earthen fill above the base flood elevation. Scientific and technical information to support a request to gain exclusion from an area of

special flood hazard of a structure or parcel of land that has been elevated by the placement of engineered earthen fill will include the following:

(1) A copy of the recorded deed indicating the legal description of the property and the official recordation information (deed book volume and page number) and bearing the seal of the appropriate recordation official (e.g., County Clerk or Recorder of Deeds).

(2) If the property is recorded on a plat map, a copy of the recorded plat indicating both the location of the property and the official recordation information (plat book volume and page number) and bearing the seal of the appropriate recordation official. If the property is not recorded on a plat map, FEMA requires copies of the tax map or other suitable maps to help in locating the property accurately.

(3) A topographic map or other information indicating existing ground elevations and the date of fill. FEMA's determination to exclude a legally defined parcel of land or a structure from the area of special flood hazard will be based upon a comparison of the base flood elevations to the lowest ground elevation of the parcel or the lowest adjacent grade to the structure. If the lowest ground elevation of the entire legally defined parcel of land or the lowest adjacent grade to the structure are at or above the elevations of the base flood, FEMA will exclude the parcel and/or structure from the area of special flood hazard.

(4) Written assurance by the participating community that they have complied with the appropriate minimum floodplain management requirements under Sec. 60.3. This includes the requirements that:

(i) Existing residential structures built in the SFHA have their lowest floor elevated to or above the base flood;

(ii) The participating community has determined that the land and any existing or proposed structures to be removed from the SFHA are "reasonably safe from flooding", and that they have on file, available upon request by FEMA, all supporting analyses and documentation used to make that determination;

(iii) The participating community has issued permits for all existing and proposed construction or other development; and

(iv) All necessary permits have been received from those governmental agencies where approval is required by Federal, State, or local law.

(5) If the community cannot assure that it has complied with the appropriate minimum floodplain management requirements under Sec. 60.3, of this

chapter, the map revision request will be deferred until the community remedies all violations to the maximum extent possible through coordination with FEMA. Once the remedies are in place, and the community assures that the land and structures are "reasonably safe from flooding," we will process a revision to the SFHA using the criteria set forth in Sec. 65.5(a). The community must maintain on file, and make available upon request by FEMA, all supporting analyses and documentation used in determining that the land or structures are "reasonably safe from flooding."

(6) Data to substantiate the base flood elevation. If we complete a Flood Insurance Study (FIS), we will use those data to substantiate the base flood elevation. Otherwise, the community may submit data provided by an authoritative source, such as the U.S. Army Corps of Engineers, U.S. Geological Survey, Natural Resources Conservation Service, State and local water resource departments, or technical data prepared and certified by a registered professional engineer. If base flood elevations have not previously been established, we may also request hydrologic and hydraulic calculations.

(7) A revision of floodplain delineations based on fill must demonstrate that any such fill does not result in a floodway encroachment.

(b) New topographic data. A community may also follow the procedures described in paragraphs (a)(1) through (6) of this section to request a map revision when no physical changes have occurred in the area of special flood hazard, when no fill has been placed, and when the natural ground elevations are at or above the elevations of the base flood, where new topographic maps are more detailed or more accurate than the current map.

(c) Certification requirements. A registered professional engineer or licensed land surveyor must certify the items required in paragraphs (a)(3) and (6) and (b) of this section. Such certifications are subject to the provisions under Sec. 65.2.

(d) Submission procedures. Submit all requests to the appropriate address serving the community's geographic area or to the FEMA Headquarters Office in Washington, DC.

[66 FR 22442, May 4, 2001]

§ 65.6 Revision of base flood elevation determinations.

(a) General conditions and data requirements.

(1) The supporting data must include all the information FEMA needs to review and evaluate the

request. This may involve the requestor's performing new hydrologic and hydraulic analysis and delineation of new flood plain boundaries and floodways, as necessary.

(2) To avoid discontinuities between the revised and unrevised flood data, the necessary hydrologic and hydraulic analyses submitted by the map revision requestor must be extensive enough to ensure that a logical transition can be shown between the revised flood elevations, flood plain boundaries, and floodways and those developed previously for areas not affected by the revision. Unless it is demonstrated that it would not be appropriate, the revised and unrevised base flood elevations must match within one-half foot where such transitions occur.

(3) Revisions cannot be made based on the effects of proposed projects or future conditions. Section 65.8 of this subchapter contains provisions for obtaining conditional approval of proposed projects that may effect map changes when they are completed.

(4) The datum and date of releveling of benchmarks, if any, to which the elevations are referenced must be indicated.

(5) Maps will not be revised when discharges change as a result of the use of an alternative methodology or data for computing flood discharges unless the change is statistically significant as measured by a confidence limits analysis of the new discharge estimates.

(6) Any computer program used to perform hydrologic or hydraulic analyses in support of a flood insurance map revision must meet all of the following criteria:

(i) It must have been reviewed and accepted by a governmental agency responsible for the implementation of programs for flood control and/or the regulation of flood plain lands. For computer programs adopted by non-Federal agencies, certification by a responsible agency official must be provided which states that the program has been reviewed, tested, and accepted by that agency for purposes of design of flood control structures or flood plain land use regulation.

(ii) It must be well-documented including source codes and user's manuals.

(iii) It must be available to FEMA and all present and future parties impacted by flood insurance mapping developed or amended through the use of the program. For programs not generally available from a Federal agency, the source code and user's manuals must be sent to FEMA free of charge, with fully-documented permission from the owner that FEMA

may release the code and user's manuals to such impacted parties.

(7) A revised hydrologic analysis for flooding sources with established base flood elevations must include evaluation of the same recurrence interval(s) studied in the effective FIS, such as the 10-, 50-, 100-, and 500-year flood discharges.

(8) A revised hydraulic analysis for a flooding source with established base flood elevations must include evaluation of the same recurrence interval(s) studied in the effective FIS, such as the 10-, 50-, 100-, and 500-year flood elevations, and of the floodway. Unless the basis of the request is the use of an alternative hydraulic methodology or the requestor can demonstrate that the data of the original hydraulic computer model is unavailable or its use is inappropriate, the analysis shall be made using the same hydraulic computer model used to develop the base flood elevations shown on the effective Flood Insurance Rate Map and updated to show present conditions in the flood plain. Copies of the input and output data from the original and revised hydraulic analyses shall be submitted.

(9) A hydrologic or hydraulic analysis for a flooding source without established base flood elevations may be performed for only the 100-year flood.

(10) A revision of flood plain delineations based on topographic Changes must demonstrate that any topographic changes have not resulted in a floodway encroachment.

(11) Delineations of flood plain boundaries for a flooding source with established base flood elevations must provide both the 100- and 500-year flood plain boundaries. For flooding sources without established base flood elevations, only 100-year flood plain boundaries need be submitted. These boundaries should be shown on a topographic map of suitable scale and contour interval.

(12) If a community or other party seeks recognition from FEMA, on its FHBM or FIRM, that an altered or relocated portion of a watercourse provides protection from, or mitigates potential hazards of, the base flood, the Administrator may request specific documentation from the community certifying that, and describing how, the provisions of Sec. 60.3(b)(7) of this subchapter will be met for the particular watercourse involved. This documentation, which may be in the form of a written statement from the Community Chief Executive Officer, an ordinance, or other legislative action, shall describe the nature of the maintenance activities to be performed, the frequency with which they will be performed, and the

title of the local community official who will be responsible for assuring that the maintenance activities are accomplished.

(13) Notwithstanding any other provisions of Sec. 65.6, a community may submit, in lieu of the documentation specified in Sec. 65.6(a)(12), certification by a registered professional engineer that the project has been designed to retain its flood carrying capacity without periodic maintenance.

(14) The participating community must provide written assurance that they have complied with the appropriate minimum floodplain management requirements under Sec. 60.3 of this chapter. This includes the requirements that:

(i) Existing residential structures built in the SFHA have their lowest floor elevated to or above the base flood;

(ii) The participating community has determined that the land and any existing or proposed structures to be removed from the SFHA are "reasonably safe from flooding," and that they have on file, available upon request by FEMA, all supporting analyses and documentation used to make that determination;

(iii) The participating community has issued permits for all existing and proposed construction or other development; and

(iv) All necessary permits have been received from those governmental agencies where approval is required by Federal, State, or local law.

(15) If the community cannot assure that it has complied with the appropriate minimum floodplain management requirements under Sec. 60.3, of this chapter the map revision request will be deferred until the community remedies all violations to the maximum extent possible through coordination with FEMA. Once the remedies are in place, and the community assures that the land and structures are "reasonably safe from flooding," we will process a revision to the SFHA using the criteria set forth under Sec. 65.6. The community must maintain on file, and make available upon request by FEMA, all supporting analyses and documentation used in determining that the land or structures are "reasonably safe from flooding."

(b) Data requirements for correcting map errors. To correct errors in the original flood analysis, technical data submissions shall include the following:

(1) Data identifying mathematical errors.

(2) Data identifying measurement errors and providing correct measurements.

(c) Data requirements for changed physical conditions. Revisions based on the effects of physical

changes that have occurred in the flood plain shall include:

(1) Changes affecting hydrologic conditions. The following data must be submitted:

- (i) General description of the changes (e.g., dam, diversion channel, or detention basin).
- (ii) Construction plans for as-built conditions, if applicable.
- (iii) New hydrologic analysis accounting for the effects of the changes.
- (iv) New hydraulic analysis and profiles using the new flood discharge values resulting from the hydrologic analysis.
- (v) Revised delineations of the flood plain boundaries and floodway.

(2) Changes affecting hydraulic conditions. The following data shall be submitted:

- (i) General description of the changes (e.g., channelization or new bridge, culvert, or levee).
- (ii) Construction plans for as-built conditions.
- (iii) New hydraulic analysis and flood elevation profiles accounting for the effects of the changes and using the original flood discharge values upon which the original map is based.
- (iv) Revised delineations of the flood plain boundaries and floodway.

(3) Changes involving topographic conditions. The following data shall be submitted:

- (i) General description of the changes (e.g., grading or filling).
- (ii) New topographic information, such as spot elevations, cross sections grading plans, or contour maps.
- (iii) Revised delineations of the flood plain boundaries and, if necessary, floodway.

(d) Data requirements for incorporating improved data. Requests for revisions based on the use of improved hydrologic, hydraulic, or topographic data shall include the following data:

- (1) Data that are believed to be better than those used in the original analysis (such as additional years of stream gage data).
- (2) Documentation of the source of the data.
- (3) Explanation as to why the use of the new data will improve the results of the original analysis.
- (4) Revised hydrologic analysis where hydrologic data are being incorporated.
- (5) Revised hydraulic analysis and flood elevation profiles where new hydrologic or hydraulic data are being incorporated.
- (6) Revised delineations of the flood plain boundaries and floodway where new hydrologic, hydraulic, or

topographic data are being incorporated.

(e) Data requirements for incorporating improved methods. Requests for revisions based on the use of improved hydrologic or hydraulic methodology shall include the following data:

- (1) New hydrologic analysis when an alternative hydrologic methodology is being proposed.
- (2) New hydraulic analysis and flood elevation profiles when an alternative hydrologic or hydraulic methodology is being proposed.
- (3) Explanation as to why the alternative methodologies are superior to the original methodologies.
- (4) Revised delineations of the flood plain boundaries and floodway based on the new analysis(es).

(f) Certification requirements. All analysis and data submitted by the requester shall be certified by a registered professional engineer or licensed land surveyor, as appropriate, subject to the definition of "certification" given at Sec. 65.2 of this subchapter.

(g) Submission procedures. All requests shall be submitted to the FEMA Regional Office servicing the community's geographic area or to the FEMA Headquarters Office in Washington, DC, and shall be accompanied by the appropriate payment, in accordance with 44 CFR part 72.

[51 FR 30314, Aug. 25, 1986, as amended at 53 FR 16279, May 6, 1988; 54 FR 33550, Aug. 15, 1989; 61 FR 46331, Aug. 30, 1996; 62 FR 5736, Feb. 6, 1997; 66 FR 22442, May 4, 2001]

§ 65.7 Floodway revisions.

(a) General. Floodway data is developed as part of FEMA Flood Insurance Studies and is utilized by communities to select and adopt floodways as part of the flood plain management program required by Sec. 60.3 of this subchapter. When it has been determined by a community that no practicable alternatives exist to revising the boundaries of its previously adopted floodway, the procedures below shall be followed.

(b) Data requirements when base flood elevation changes are requested. When a floodway revision is requested in association with a change to base flood elevations, the data requirements of Sec. 65.6 shall also be applicable. In addition, the following documentation shall be submitted:

- (1) Copy of a public notice distributed by the community stating the community's intent to revise the floodway or a statement by the community that it has notified all affected property owners and affected adjacent jurisdictions.

(2) Copy of a letter notifying the appropriate State agency of the floodway revision when the State has jurisdiction over the floodway or its adoption by communities participating in the NFIP.

(3) Documentation of the approval of the revised floodway by the appropriate State agency (for communities where the State has jurisdiction over the floodway or its adoption by communities participating in the NFIP).

(4) Engineering analysis for the revised floodway, as described below:

(i) The floodway analysis must be performed using the hydraulic computer model used to determine the proposed base flood elevations.

(ii) The floodway limits must be set so that neither the effective base flood elevations nor the proposed base flood elevations if less than the effective base flood elevations, are increased by more than the amount specified under Sec. 60.3 (d)(2). Copies of the input and output data from the original and modified computer models must be submitted.

(5) Delineation of the revised floodway on the same topographic map used for the delineation of the revised flood boundaries.

(c) Data requirements for changes not associated with base flood elevation changes. The following data shall be submitted:

(1) Items described in paragraphs (b) (1) through (3) of this section must be submitted.

(2) Engineering analysis for the revised floodway, as described below:

(i) The original hydraulic computer model used to develop the established base flood elevations must be modified to include all encroachments that have occurred in the flood plain since the existing floodway was developed. If the original hydraulic computer model is not available, an alternate hydraulic computer model may be used provided the alternate model has been calibrated so as to reproduce the original water surface profile of the original hydraulic computer model. The alternate model must be then modified to include all encroachments that have occurred since the existing floodway was developed.

(ii) The floodway analysis must be performed with the modified computer model using the desired floodway limits.

(iii) The floodway limits must be set so that combined effects of the past encroachments and the new floodway limits do not increase the effective base flood elevations by more than the amount specified in Sec. 60.3(d)(2). Copies of the input and

output data from the original and modified computer models must be submitted.

(3) Delineation of the revised floodway on a copy of the effective NFIP map and a suitable topographic map.

(d) Certification requirements. All analyses submitted shall be certified by a registered professional engineer. All topographic data shall be certified by a registered professional engineer or licensed land surveyor. Certifications are subject to the definition given at Sec. 65.2 of this subchapter.

(e) Submission procedures. All requests that involve changes to floodways shall be submitted to the appropriate FEMA Regional Office servicing the community's geographic area.

[51 FR 30315, Aug. 25, 1986]

§ 65.8 Review of proposed projects.

A community, or an individual through the community, may request FEMA's comments on whether a proposed project, if built as proposed, would justify a map revision. FEMA's comments will be issued in the form of a letter, termed a Conditional Letter of Map Revision, in accordance with 44 CFR part 72. The data required to support such requests are the same as those required for final revisions under Sec. Sec. 65.5, 65.6, and 65.7, except as-built certification is not required. All such requests shall be submitted to the FEMA Headquarters Office in Washington, DC, and shall be accompanied by the appropriate payment, in accordance with 44 CFR part 72. [62 FR 5736, Feb. 6, 1997]

§ 65.9 Review and response by the Administrator.

If any questions or problems arise during review, FEMA will consult the Chief Executive Officer of the community (CEO), the community official designated by the CEO, and/or the requester for resolution. Upon receipt of a revision request, the Administrator shall mail an acknowledgment of receipt of such request to the CEO. Within 90 days of receiving the request with all necessary information, the Administrator shall notify the CEO of one or more of the following:

(a) The effective map(s) shall not be modified;

(b) The base flood elevations on the effective FIRM shall be modified and new base flood elevations shall be established under the provisions of part 67 of this subchapter;

(c) The changes requested are approved and the map(s) amended by Letter of Map Revision (LOMR);

(d) The changes requested are approved and a revised map(s) will be printed and distributed;

(e) The changes requested are not of such a significant nature as to warrant a reissuance or revision of the flood insurance study or maps and will be deferred until such time as a significant change occurs;

(f) An additional 90 days is required to evaluate the scientific or technical data submitted; or

(g) Additional data are required to support the revision request.

(h) The required payment has not been submitted in accordance with 44 CFR part 72, no review will be conducted and no determination will be issued until payment is received.

[51 FR 30315, Aug. 25, 1986; 61 FR 46331, Aug. 30, 1996, as amended at 62 FR 5736, Feb. 6, 1997]

§ 65.10 Mapping of areas protected by levee systems.

(a) General. For purposes of the NFIP, FEMA will only recognize in its flood hazard and risk mapping effort those levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards that are consistent with the level of protection sought through the comprehensive flood plain management criteria established by Sec. 60.3 of this subchapter. Accordingly, this section describes the types of information FEMA needs to recognize, on NFIP maps, that a levee system provides protection from the base flood. This information must be supplied to FEMA by the community or other party seeking recognition of such a levee system at the time a flood risk study or restudy is conducted, when a map revision under the provisions of part 65 of this subchapter is sought based on a levee system, and upon request by the Administrator during the review of previously recognized structures. The FEMA review will be for the sole purpose of establishing appropriate risk zone determinations for NFIP maps and shall not constitute a determination by FEMA as to how a structure or system will perform in a flood event.

(b) Design criteria. For levees to be recognized by FEMA, evidence that adequate design and operation and maintenance systems are in place to provide reasonable assurance that protection from the base flood exists must be provided. The following requirements must be met:

(1) Freeboard. (i) Riverine levees must provide a minimum freeboard of three feet above the water-surface level of the base flood. An additional one foot above the minimum is required within 100 feet in either side of structures (such as bridges) riverward of the levee or wherever the flow is constricted. An additional one-half foot above the minimum at the upstream end of the levee, tapering to not less than the minimum at the downstream end of the levee, is also required.

(ii) Occasionally, exceptions to the minimum riverine freeboard requirement described in paragraph (b)(1)(i) of this section, may be approved. Appropriate engineering analyses demonstrating adequate protection with a lesser freeboard must be submitted to support a request for such an exception. The material presented must evaluate the uncertainty in the estimated base flood elevation profile and include, but not necessarily be limited to an assessment of statistical confidence limits of the 100-year discharge; changes in stage-discharge relationships; and the sources, potential, and magnitude of debris, sediment, and ice accumulation. It must be also shown that the levee will remain structurally stable during the base flood when such additional loading considerations are imposed. Under no circumstances will freeboard of less than two feet be accepted.

(iii) For coastal levees, the freeboard must be established at one foot above the height of the one percent wave or the maximum wave runup (whichever is greater) associated with the 100year stillwater surge elevation at the site.

(iv) Occasionally, exceptions to the minimum coastal levee freeboard requirement described in paragraph (b)(1)(iii) of this section, may be approved. Appropriate engineering analyses demonstrating adequate protection with a lesser freeboard must be submitted to support a request for such an exception. The material presented must evaluate the uncertainty in the estimated base flood loading conditions. Particular emphasis must be placed on the effects of wave attack and overtopping on the stability of the levee. Under no circumstances, however, will a freeboard of less than two feet above the 100year stillwater surge elevation be accepted.

(2) Closures. All openings must be provided with closure devices that are structural parts of the system during operation and design according to sound engineering practice.

(3) Embankment protection. Engineering analyses must be submitted that demonstrate that no

appreciable erosion of the levee embankment can be expected during the base flood, as a result of either currents or waves, and that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability. The factors to be addressed in such analyses include, but are not limited to: Expected flow velocities (especially in constricted areas); expected wind and wave action; ice loading; impact of debris; slope protection techniques; duration of flooding at various stages and velocities; embankment and foundation materials; levee alignment, bends, and transitions; and levee side slopes.

(4) Embankment and foundation stability. Engineering analyses that evaluate levee embankment stability must be submitted. The analyses provided shall evaluate expected seepage during loading conditions associated with the base flood and shall demonstrate that seepage into or through the levee foundation and embankment will not jeopardize embankment or foundation stability. An alternative analysis demonstrating that the levee is designed and constructed for stability against loading conditions for Case IV as defined in the U.S. Army Corps of Engineers (COE) manual, "Design and Construction of Levees" (EM 1110-2-1913, Chapter 6, Section II), may be used. The factors that shall be addressed in the analyses include: Depth of flooding, duration of flooding, embankment geometry and length of seepage path at critical locations, embankment and foundation materials, embankment compaction, penetrations, other design factors affecting seepage (such as drainage layers), and other design factors affecting embankment and foundation stability (such as berms).

(5) Settlement. Engineering analyses must be submitted that assess the potential and magnitude of future losses of freeboard as a result of levee settlement and demonstrate that freeboard will be maintained within the minimum standards set forth in paragraph (b)(1) of this section. This analysis must address embankment loads, compressibility of embankment soils, compressibility of foundation soils, age of the levee system, and construction compaction methods. In addition, detailed settlement analysis using procedures such as those described in the COE manual, "Soil Mechanics Design--Settlement Analysis" (EM 1100-2-1904) must be submitted.

(6) Interior drainage. An analysis must be submitted that identifies the source(s) of such flooding, the

extent of the flooded area, and, if the average depth is greater than one foot, the water-surface elevation(s) of the base flood. This analysis must be based on the joint probability of interior and exterior flooding and the capacity of facilities (such as drainage lines and pumps) for evacuating interior floodwaters.

(7) Other design criteria. In unique situations, such as those where the levee system has relatively high vulnerability, FEMA may require that other design criteria and analyses be submitted to show that the levees provide adequate protection. In such situations, sound engineering practice will be the standard on which FEMA will base its determinations. FEMA will also provide the rationale for requiring this additional information.

(c) Operation plans and criteria. For a levee system to be recognized, the operational criteria must be as described below. All closure devices or mechanical systems for internal drainage, whether manual or automatic, must be operated in accordance with an officially adopted operation manual, a copy of which must be provided to FEMA by the operator when levee or drainage system recognition is being sought or when the manual for a previously recognized system is revised in any manner. All operations must be under the jurisdiction of a Federal or State agency, an agency created by Federal or State law, or an agency of a community participating in the NFIP.

(1) Closures. Operation plans for closures must include the following:

(i) Documentation of the flood warning system, under the jurisdiction of Federal, State, or community officials, that will be used to trigger emergency operation activities and demonstration that sufficient flood warning time exists for the completed operation of all closure structures, including necessary sealing, before floodwaters reach the base of the closure.

(ii) A formal plan of operation including specific actions and assignments of responsibility by individual name or title.

(iii) Provisions for periodic operation, at not less than one-year intervals, of the closure structure for testing and training purposes.

(2) Interior drainage systems. Interior drainage systems associated with levee systems usually include storage areas, gravity outlets, pumping stations, or a combination thereof. These drainage systems will be recognized by FEMA on NFIP maps for flood protection purposes only if the following minimum criteria are included in the operation plan:

(i) Documentation of the flood warning system, under the jurisdiction of Federal, State, or community

officials, that will be used to trigger emergency operation activities and demonstration that sufficient flood warning time exists to permit activation of mechanized portions of the drainage system.

(ii) A formal plan of operation including specific actions and assignments of responsibility by individual name or title.

(iii) Provision for manual backup for the activation of automatic systems.

(iv) Provisions for periodic inspection of interior drainage systems and periodic operation of any mechanized portions for testing and training purposes. No more than one year shall elapse between either the inspections or the operations.

(3) Other operation plans and criteria. Other operating plans and criteria may be required by FEMA to ensure that adequate protection is provided in specific situations. In such cases, sound emergency management practice will be the standard upon which FEMA determinations will be based.

(d) Maintenance plans and criteria. For levee systems to be recognized as providing protection from the base flood, the maintenance criteria must be as described herein. Levee systems must be maintained in accordance with an officially adopted maintenance plan, and a copy of this plan must be provided to FEMA by the owner of the levee system when recognition is being sought or when the plan for a previously recognized system is revised in any manner. All maintenance activities must be under the jurisdiction of a Federal or State agency, an agency created by Federal or State law, or an agency of a community participating in the NFIP that must assume ultimate responsibility for maintenance. This plan must document the formal procedure that ensures that the stability, height, and overall integrity of the levee and its associated structures and systems are maintained. At a minimum, maintenance plans shall specify the maintenance activities to be performed, the frequency of their performance, and the person by name or title responsible for their performance.

(e) Certification requirements. Data submitted to support that a given levee system complies with the structural requirements set forth in paragraphs (b)(1) through (7) of this section must be certified by a registered professional engineer. Also, certified as-built plans of the levee must be submitted. Certifications are subject to the definition given at Sec. 65.2 of this subchapter. In lieu of these structural requirements, a Federal agency with responsibility for levee design may certify that the levee has been

adequately designed and constructed to provide protection against the base flood.

[51 FR 30316, Aug. 25, 1986]

§ 65.11 Evaluation of sand dunes in mapping coastal flood hazard areas.

(a) General conditions. For purposes of the NFIP, FEMA will consider storm-induced dune erosion potential in its determination of coastal flood hazards and risk mapping efforts. The criterion to be used in the evaluation of dune erosion will apply to primary frontal dunes as defined in Sec. 59.1, but does not apply to artificially designed and constructed dunes that are not well-established with long-standing vegetative cover, such as the placement of sand materials in a dune-like formation.

(b) Evaluation criterion. Primary frontal dunes will not be considered as effective barriers to base flood storm surges and associated wave action where the cross-sectional area of the primary frontal dune, as measured perpendicular to the shoreline and above the 100-year stillwater flood elevation and seaward of the dune crest, is equal to, or less than, 540 square feet.

(c) Exceptions. Exceptions to the evaluation criterion may be granted where it can be demonstrated through authoritative historical documentation that the primary frontal dunes at a specific site withstood previous base flood storm surges and associated wave action.

[53 FR 16279, May 6, 1988]

§ 65.12 Revision of flood insurance rate maps to reflect base flood elevations caused by proposed encroachments.

(a) When a community proposes to permit encroachments upon the flood plain when a regulatory floodway has not been adopted or to permit encroachments upon an adopted regulatory floodway which will cause base flood elevation increases in excess of those permitted under paragraphs (c)(10) or (d)(3) of Sec. 60.3 of this subchapter, the community shall apply to the Administrator for conditional approval of such action prior to permitting the encroachments to occur and shall submit the following as part of its application:

(1) A request for conditional approval of map change and the appropriate initial fee as specified by Sec. 72.3 of this subchapter or a request for exemption from fees as specified by Sec. 72.5 of this subchapter, whichever is appropriate;

(2) An evaluation of alternatives which would not

result in a base flood elevation increase above that permitted under paragraphs (c)(10) or (d)(3) of Sec. 60.3 of this subchapter demonstrating why these alternatives are not feasible;

(3) Documentation of individual legal notice to all impacted property owners within and outside of the community, explaining the impact of the proposed action on their property.

(4) Concurrence of the Chief Executive Officer of any other communities impacted by the proposed actions;

(5) Certification that no structures are located in areas which would be impacted by the increased base flood elevation;

(6) A request for revision of base flood elevation determination according to the provisions of Sec. 65.6 of this part;

(7) A request for floodway revision in accordance with the provisions of Sec. 65.7 of this part;

(b) Upon receipt of the Administrator's conditional approval of map change and prior to approving the proposed encroachments, a community shall provide evidence to the Administrator of the adoption of flood plain management ordinances incorporating the increased base flood elevations and/or revised floodway reflecting the post-project condition.

(c) Upon completion of the proposed encroachments, a community shall provide as-built certifications in accordance with the provisions of Sec. 65.3 of this part. The Administrator will initiate a final map revision upon receipt of such certifications in accordance with part 67 of this subchapter.

[53 FR 16279, May 6, 1988]

§ 65.13 Mapping and map revisions for areas subject to alluvial fan flooding.

This section describes the procedures to be followed and the types of information FEMA needs to recognize on a NFIP map that a structural flood control measure provides protection from the base flood in an area subject to alluvial fan flooding. This information must be supplied to FEMA by the community or other party seeking recognition of such a flood control measure at the time a flood risk study or restudy is conducted, when a map revision under the provisions of part 65 of this subchapter is sought, and upon request by the Administrator during the review of previously recognized flood control measures. The FEMA review will be for the sole purpose of establishing appropriate risk zone determinations for NFIP maps and shall not constitute a determination by FEMA as to how the

flood control measure will perform in a flood event.

(a) The applicable provisions of Sec. 65.2, 65.3, 65.4, 65.6, 65.8 and 65.10 shall also apply to FIRM revisions involving alluvial fan flooding.

(b) The provisions of Sec. 65.5 regarding map revisions based on fill and the provisions of part 70 of this chapter shall not apply to FIRM revisions involving alluvial fan flooding. In general, elevations of a parcel of land or a structure by fill or other means, will not serve as a basis for removing areas subject to alluvial fan flooding from an area of special food hazards.

(c) FEMA will credit on NFIP maps only major structural flood control measures whose design and construction are supported by sound engineering analyses which demonstrate that the measures will effectively eliminate alluvial fan flood hazards from the area protected by such measures. The provided analyses must include, but are not necessarily limited to, the following:

(1) Engineering analyses that quantify the discharges and volumes of water, debris, and sediment movement associated with the flood that has a one-percent probability of being exceeded in any year at the apex under current watershed conditions and under potential adverse conditions (e.g., deforestation of the watershed by fire). The potential for debris flow and sediment movement must be assessed using an engineering method acceptable to FEMA. The assessment should consider the characteristics and availability of sediment in the drainage basin above the apex and on the alluvial fan.

(2) Engineering analyses showing that the measures will accommodate the estimated peak discharges and volumes of water, debris, and sediment, as determined in accordance with paragraph (c)(1) of this section, and will withstand the associated hydrodynamic and hydrostatic forces.

(3) Engineering analyses showing that the measures have been designed to withstand the potential erosion and scour associated with estimated discharges.

(4) Engineering analyses or evidence showing that the measures will provide protection from hazards associated with the possible relocation of flow paths from other parts of the fan.

(5) Engineering analyses that assess the effect of the project on flood hazards, including depth and velocity of floodwaters and scour and sediment deposition, on other areas of the fan.

(6) Engineering analyses demonstrating that flooding from sources other than the fan apex, including local runoff, is either insignificant or has been accounted for in the design.

(d) Coordination. FEMA will recognize measures that are adequately designed and constructed, provided that: evidence is submitted to show that the impact of the measures on flood hazards in all areas of the fan (including those not protected by the flood control measures), and the design and maintenance requirements of the measures, were reviewed and approved by the impacted communities, and also by State and local agencies that have jurisdiction over flood control activities.

(e) Operation and maintenance plans and criteria. The requirements for operation and maintenance of flood control measures on areas subject to alluvial fan flooding shall be those specified under Sec. 65.10, paragraphs (c) and (d), when applicable.

(f) Certification requirements. Data submitted to support that a given flood control measure complies with the requirements set forth in paragraphs (c) (1) through (6) of this section must be certified by a registered professional engineer. Also, certified as-built plans of the flood control measures must be submitted. Certifications are subject to the definition given at Sec. 65.2.

(Approved by the Office of Management and Budget under control number 3067-0147)

[54 FR 33551, Aug. 15, 1989]

§ 65.14 Remapping of areas for which local flood protection systems no longer provide base flood protection.

(a) General. (1) This section describes the procedures to follow and the types of information FEMA requires to designate flood control restoration zones. A community may be eligible to apply for this zone designation if the Administrator determines that it is engaged in the process of restoring a flood protection system that was:

- (i) Constructed using Federal funds;
- (ii) Recognized as providing base flood protection on the community's effective FIRM; and
- (iii) Decertified by a Federal agency responsible for flood protection design or construction.

(2) Where the Administrator determines that a community is in the process of restoring its flood protection system to provide base flood protection, a FIRM will be prepared that designates the temporary flood hazard areas as a flood control restoration zone (Zone AR). Existing special flood hazard areas

shown on the community's effective FIRM that are further inundated by Zone AR flooding shall be designated as a "dual" flood insurance rate zone, Zone AR/AE or AR/AH with Zone AR base flood elevations, and AE or AH with base flood elevations and Zone AR/AO with Zone AR base flood elevations and Zone AO with flood depths, or Zone AR/A with Zone AR base flood elevations and Zone A without base flood elevations.

(b) Limitations. A community may have a flood control restoration zone designation only once while restoring a flood protection system.

This limitation does not preclude future flood control restoration zone designations should a fully restored, certified, and accredited system become decertified for a second or subsequent time.

(1) A community that receives Federal funds for the purpose of designing or constructing, or both, the restoration project must complete restoration or meet the requirements of 44 CFR

61.12 within a specified period, not to exceed a maximum of 10 years from the date of submittal of the community's application for designation of a flood control restoration zone.

(2) A community that does not receive Federal funds for the purpose of constructing the restoration project must complete restoration within a specified period, not to exceed a maximum of 5 years from the date of submittal of the community's application for designation of a flood control restoration zone. Such a community is not eligible for the provisions of Sec.61.12. The designated restoration period may not be extended beyond the maximum allowable under this limitation.

(c) Exclusions. The provisions of these regulations do not apply in a coastal high hazard area as defined in 44 CFR 59.1, including areas that would be subject to coastal high hazards as a result of the decertification of a flood protection system shown on the community's effective FIRM as providing base flood protection.

(d) Effective date for risk premium rates. The effective date for any risk premium rates established for Zone AR shall be the effective date of the revised FIRM showing Zone AR designations.

(e) Application and submittal requirements for designation of a flood control restoration zone. A community must submit a written request to the Administrator, signed by the community's Chief Executive Officer, for a floodplain designation as a flood control restoration zone. The request must include a legislative action by the community

requesting the designation. The Administrator will not initiate any action to designate flood control restoration zones without receipt of the formal request from the community that complies with all requirements of this section. The Administrator reserves the right to request additional information from the community to support or further document the community's formal request for designation of a flood control restoration zone, if deemed necessary.

(1) At a minimum, the request from a community that receives Federal funds for the purpose of designing, constructing, or both, the restoration project must include:

(i) A statement whether, to the best of the knowledge of the community's Chief Executive Officer, the flood protection system is currently the subject matter of litigation before any Federal, State or local court or administrative agency, and if so, the purpose of that litigation;

(ii) A statement whether the community has previously requested a determination with respect to the same subject matter from the Administrator, and if so, a statement that details the disposition of such previous request;

(iii) A statement from the community and certification by a Federal agency responsible for flood protection design or construction that the existing flood control system shown on the effective FIRM was originally built using Federal funds, that it no longer provides base flood protection, but that it continues to provide protection from the flood having at least a 3percent chance of occurrence during any given year;

(iv) An official map of the community or legal description, with supporting documentation, that the community will adopt as part of its flood plain management measures, which designates developed areas as defined in Sec.59.1 and as further defined in Sec.60.3(f).

(v) A restoration plan to return the system to a level of base flood protection. At a minimum, this plan must:

(A) List all important project elements, such as acquisition of permits, approvals, and contracts and construction schedules of planned features;

(B) Identify anticipated start and completion dates for each element, as well as significant milestones and dates;

(C) Identify the date on which ``as built" drawings and certification for the completed restoration project will be submitted. This date must provide for a restoration period not to exceed the maximum

allowable restoration period for the flood protection system, or;

(D) Identify the date on which the community will submit a request for a finding of adequate progress that meets all requirements of Sec.61.12. This date may not exceed the maximum allowable restoration period for the flood protection system;

(vi) A statement identifying the local project sponsor responsible for restoration of the flood protection system;

(vii) A copy of a study, performed by a Federal agency responsible for flood protection design or construction in consultation with the local project sponsor, which demonstrates a Federal interest in restoration of the system and which deems that the flood protection system is restorable to a level of base flood protection.

(viii) A joint statement from the Federal agency responsible for flood protection design or construction involved in restoration of the flood protection system and the local project sponsor certifying that the design and construction of the flood control system involves Federal funds, and that the restoration of the flood protection system will provide base flood protection;

(2) At a minimum, the request from a community that receives no Federal funds for the purpose of constructing the restoration project must:

(i) Meet the requirements of Sec.65.14(e)(1)(i) through (iv);

(ii) Include a restoration plan to return the system to a level of base flood protection. At a minimum, this plan must:

(A) List all important project elements, such as acquisition of permits, approvals, and contracts and construction schedules of planned features;

(B) Identify anticipated start and completion dates for each element, as well as significant milestones and dates; and

(C) Identify the date on which ``as built" drawings and certification for the completed restoration project will be submitted. This date must provide for a restoration period not to exceed the maximum allowable restoration period for the flood protection system;

(iii) Include a statement identifying the local agency responsible for restoration of the flood protection system;

(iv) Include a copy of a study, certified by registered Professional Engineer, that demonstrates that the flood protection system is restorable to provide protection from the base flood;

(v) Include a statement from the local agency responsible for restoration of the flood protection system certifying that the restored flood protection system will meet the applicable requirements of Part 65; and

(vi) Include a statement from the local agency responsible for restoration of the flood protection system that identifies the source of funds for the purpose of constructing the restoration project and a percentage of the total funds contributed by each source. The statement must demonstrate, at a minimum, that 100 percent of the total financial project cost of the completed flood protection system has been appropriated.

(f) Review and response by the Administrator. The review and response by the Administrator shall be in accordance with procedures specified in Sec. 65.9.

(g) Requirements for maintaining designation of a flood control restoration zone. During the restoration period, the community and the cost-sharing Federal agency, if any, must certify annually to the FEMA Regional Office having jurisdiction that the restoration will be completed in accordance with the restoration plan within the time period specified by the plan. In addition, the community and the cost-sharing Federal agency, if any, will update the restoration plan and will identify any permitting or construction problems that will delay the project completion from the restoration plan previously submitted to the Administrator. The FEMA Regional Office having jurisdiction will make an annual assessment and recommendation to the Administrator as to the viability of the restoration plan and will conduct periodic on-site inspections of the flood protection system under restoration.

(h) Procedures for removing flood control restoration zone designation due to adequate progress or complete restoration of the flood protection system. At any time during the restoration period:

(1) A community that receives Federal funds for the purpose of designing, constructing, or both, the restoration project shall provide written evidence of certification from a Federal agency having flood protection design or construction responsibility that the necessary improvements have been completed and that the system has been restored to provide protection from the base flood, or submit a request for a finding of adequate progress that meets all requirements of Sec.61.12. If the Administrator determines that adequate progress has been made, FEMA will revise the zone designation from a flood control restoration zone designation to Zone A99.

(2) After the improvements have been completed, certified by a Federal agency as providing base flood protection, and reviewed by FEMA, FEMA will revise the FIRM to reflect the completed flood control system.

(3) A community that receives no Federal funds for the purpose of constructing the restoration project must provide written evidence that the restored flood protection system meets the requirements of Part 65. A community that receives no Federal funds for the purpose of constructing the restoration project is not eligible for a finding of adequate progress under Sec.61.12.

(4) After the improvements have been completed and reviewed by FEMA, FEMA will revise the FIRM to reflect the completed flood protection system.

(i) Procedures for removing flood control restoration zone designation due to noncompliance with the restoration schedule or as a result of a finding that satisfactory progress is not being made to complete the restoration. At any time during the restoration period, should the Administrator determine that the restoration will not be completed in accordance with the time frame specified in the restoration plan, or that satisfactory progress is not being made to restore the flood protection system to provide complete flood protection in accordance with the restoration plan, the Administrator shall notify the community and the responsible Federal agency, in writing, of the determination, the reasons for that determination, and that the FIRM will be revised to remove the flood control restoration zone designation. Within thirty (30) days of such notice, the community may submit written information that provides assurance that the restoration will be completed in accordance with the time frame specified in the restoration plan, or that satisfactory progress is being made to restore complete protection in accordance with the restoration plan, or that, with reasonable certainty, the restoration will be completed within the maximum allowable restoration period. On the basis of this information the Administrator may suspend the decision to revise the FIRM to remove the flood control restoration zone designation. If the community does not submit any information, or if, based on a review of the information submitted, there is sufficient cause to find that the restoration will not be completed as provided for in the restoration plan, the Administrator shall revise the FIRM, in accordance with 44 CFR Part 67, and shall remove the flood control restoration zone designations and shall redesignate those areas as Zone A1-30, AE, AH,

AO, or A.
[62 FR 55717, Oct. 27, 1997]

§ 65.15 List of communities submitting new technical data.

This section provides a cumulative list of communities where modifications of the base flood elevation determinations have been made because of submission of new scientific or technical data. Due to the need for expediting the modifications, the revised map is already in effect and the appeal period commences on or about the effective date of the modified map. An interim rule, followed by a final rule, will list the revised map effective date, local repository and the name and address of the Chief Executive Officer of the community. The map(s) is (are) effective for both flood plain management and insurance purposes.

[51 FR 30317, Aug. 25, 1986. Redesignated at 53 FR 16279, May 6, 1988, and further redesignated at 54 FR 33551, Aug. 15, 1989. Redesignated at 59 FR 53599, Oct. 25, 1994]

Editorial Note: For references to FR pages showing lists of eligible communities, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 65.16 Standard Flood Hazard Determination Form and Instructions.

(a) Section 528 of the National Flood Insurance Reform Act of 1994 (42 U.S.C. 1365(a)) directs FEMA to develop a standard form for determining, in the case of a loan secured by improved real estate or a mobile home, whether the building or mobile home is located in an area identified by the Director as an area having special flood hazards and in which flood insurance under this title is available. The purpose of the form is to determine whether a building or mobile home is located within an identified Special Flood Hazard Area (SFHA), whether flood insurance is required, and whether federal flood insurance is available. Use of this form will ensure that required flood insurance coverage is purchased for structures located in an SFHA, and will assist federal entities for lending regulation in assuring compliance with these purchase requirements.

(b) The form is available by written request to Federal Emergency Management Agency, PO Box 2012, Jessup, MD 20794; ask for the Standard Flood Hazard Determination form. It is also available by fax-on-demand; call (202) 646-3362, form #23103. Finally, the form is available through the Internet at

<http://www.fema.gov/nfip/mpurfi.htm>.
[63 FR 27857, May 21, 1998]

§ 65.17 Review of determinations.

This section describes the procedures that shall be followed and the types of information required by FEMA to review a determination of whether a building or manufactured home is located within an identified Special Flood Hazard Area (SFHA).

(a) General conditions. The borrower and lender of a loan secured by improved real estate or a manufactured home may jointly request that FEMA review a determination that the building or manufactured home is located in an identified SFHA. Such a request must be submitted within 45 days of the lender's notification to the borrower that the building or manufactured home is in the SFHA and that flood insurance is required. Such a request must be submitted jointly by the lender and the borrower and shall include the required fee and technical information related to the building or manufactured home. Elevation data will not be considered under the procedures described in this section.

(b) Data and other requirements. Items required for FEMA's review of a determination shall include the following:

(1) Payment of the required fee by check or money order, in U.S. funds, payable to the National Flood Insurance Program;

(2) A request for FEMA's review of the determination, signed by both the borrower and the lender;

(3) A copy of the lender's notification to the borrower that the building or manufactured home is in an SFHA and that flood insurance is required (the request for review of the determination must be postmarked within 45 days of borrower notification);

(4) A completed Standard Flood Hazard Determination Form for the building or manufactured home, together with a legible hard copy of all technical data used in making the determination; and

(5) A copy of the effective NFIP map (Flood Hazard Boundary Map (FHBM) or Flood Insurance Rate Map (FIRM)) panel for the community in which the building or manufactured home is located, with the building or manufactured home location indicated. Portions of the map panel may be submitted but shall include the area of the building or manufactured home in question together with the map panel title block, including effective date, bar scale, and north arrow.

(c) Review and response by FEMA. Within 45 days after receipt of a request to review a determination, FEMA will notify the applicants in writing of one of the following:

- (1) Request submitted more than 45 days after borrower notification; no review will be performed and all materials are being returned;
- (2) Insufficient information was received to review the determination; therefore, the determination stands until a complete submittal is received; or
- (3) The results of FEMA's review of the determination, which shall include the following:
 - (i) The name of the NFIP community in which the building or manufactured home is located;
 - (ii) The property address or other identification of the building or manufactured home to which the determination applies;
 - (iii) The NFIP map panel number and effective date upon which the determination is based;
 - (iv) A statement indicating whether the building or manufactured home is within the Special Flood Hazard Area;
 - (v) The time frame during which the determination is effective.

[60 FR 62218, Dec. 5, 1995]

PART 70--PROCEDURE FOR MAP CORRECTION

Mapping Deficiencies Unrelated to Community - Wide Elevation Determinations

Sec.

70.1 Purpose of part.

70.2 Definitions.

70.3 Right to submit technical information.

70.4 Review by the Director.

70.5 Letter of Map Amendment.

70.6 Distribution of Letter of Map Amendment.

70.7 Notice of Letter of Map Amendment.

70.8 Premium refund after Letter of Map Amendment.

70.9 Review of proposed projects.

Authority: 42 U.S.C. 4001 et seq.; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127 of Mar. 31, 1979, 44 FR 19367, 3 CFR, 1979 Comp., p. 376.

§ 70.1 Purpose of part.

The purpose of this part is to provide an administrative procedure whereby the Administrator will review the scientific or technical submissions of an owner or lessee of property who believes his property has been inadvertently included in

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designated A, AO, A130, AE, AH, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V Zones, as a result of the transposition of the curvilinear line to either street or to other readily identifiable features. The necessity for this part is due in part to the technical difficulty of accurately delineating the curvilinear line on either an FHBM or FIRM. These procedures shall not apply when there has been any alteration of topography since the effective date of the first NFIP map (i.e., FHBM or FIRM) showing the property within an area of special flood hazard. Appeals in such circumstances are subject to the provisions of part 65 of this subchapter. [62 FR 55718, Oct. 27, 1997]

§ 70.2 Definitions.

The definitions set forth in part 59 of this subchapter are applicable to this part.

[41 FR 46991, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979]

§ 70.3 Right to submit technical information.

(a) Any owner or lessee of property (applicant) who believes his property has been inadvertently included in a designated A, AO, A1-30, AE, AH, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V Zones on a FHBM or a FIRM, may submit scientific or technical information to the Administrator for the Administrator's review.

(b) Scientific and technical information for the purpose of this part may include, but is not limited to the following:

(1) An actual copy of the recorded plat map bearing the seal of the appropriate recordation official (e.g. County Clerk, or Recorder of Deeds) indicating the official recordation and proper citation (Deed or Plat Book Volume and Page Numbers), or an equivalent identification where annotation of the deed or plat book is not the practice.

(2) A topographical map showing (i) ground elevation contours in relation to the National Geodetic Vertical Datum (NVGD) of 1929, (ii) the total area of the property in question, (iii) the location of the structure or structures located on the property in question, (iv) the elevation of the lowest adjacent grade to a structure or structures and (v) an indication of the curvilinear line which represents the area subject to inundation by a base flood. The curvilinear line should be based upon information provided by any appropriate authoritative source, such as a Federal Agency, the appropriate state agency (e.g.

Department of Water Resources), a County Water Control District, a County or City Engineer, a Federal Emergency Management Agency Flood Insurance Study, or a determination by a Registered Professional Engineer

(3) A copy of the FHBM or FIRM indicating the location of the property in question;

(4) A certification by a Registered Professional Engineer or Licensed Land Surveyor that the lowest grade adjacent to the structure is above the base flood elevation.

[41 FR 46991, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44544 and 44553, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 50 FR 36028, Sept. 4, 1985; 51 FR 30317, Aug. 25, 1986; 53 FR 16280, May 6, 1988; 59 FR 53601, Oct. 25, 1994; 62 FR 55719, Oct. 27, 1997]

§ 70.4 Review by the Director.

The Director, after reviewing the scientific or technical information submitted under the provisions of Sec. 70.3, shall notify the applicant in writing of his/her determination within 60 days after we receive the applicant's scientific or technical information that we have compared either the ground elevations of an entire legally defined parcel of land or the elevation of the lowest adjacent grade to a structure with the elevation of the base flood and that:

(a) The property is within a designated A, A0, A1-30, AE, AH, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, V0, V1-30, VE, or V Zone, and will state the basis of such determination; or

(b) The property should not be within a designated A, A0, A1-30, AE, AH, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, V0, V1-30, VE, or V Zone and that we will modify the FHBM or FIRM accordingly; or

(c) The property is not within a designated A, A0, A1-30, AE, AH, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, V0, V1-30, VE, or V Zone as shown on the FHBM or FIRM and no modification of the FHBM or FIRM is necessary; or (d) We need an additional 60 days to make a determination.

[66 FR 33900, June 26, 2001]

§ 70.5 Letter of Map Amendment.

Upon determining from available scientific or technical information that a FHBM or a FIRM requires modification under the provisions of Sec. 70.4(b), the Administrator shall issue a Letter of Map Amendment which shall state:

(a) The name of the Community to which the map to be amended was issued;

(b) The number of the map;

(c) The identification of the property to be excluded from a designated A, AO, A1-30, AE, AH, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, or V Zone.

[41 FR 46991, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44553, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 50 FR 36028, Sept. 4, 1985; 59 FR 53601, Oct. 25, 1994; 62 FR 55719, Oct. 27, 1997]

§ 70.6 Distribution of Letter of Map Amendment.

(a) A copy of the Letter of Map Amendment shall be sent to the applicant who submitted scientific or technical data to the Administrator.

(b) A copy of the Letter of Map Amendment shall be sent to the local map repository with instructions that it be attached to the map which the Letter of Map Amendment is amending.

(c) A copy of the Letter of Map Amendment shall be sent to the map repository in the state with instructions that it be attached to the map which it is amending.

(d) A copy of the Letter of Map Amendment will be sent to any community or governmental unit that requests such Letter of Map Amendment.

(e) [Reserved]

(f) A copy of the Letter of Map Amendment will be maintained by the Agency in its community case file.

[41 FR 46991, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44544 and 44553, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 70.7 Notice of Letter of Map Amendment.

(a) The Administrator, shall not publish a notice in the Federal Register that the FIRM for a particular community has been amended by letter determination pursuant to this part unless such amendment includes alteration or change of base flood elevations established pursuant to part 67. Where no change of base flood elevations has occurred, the Letter of Map Amendment provided under Sec. 70.5 and 70.6 serves to inform the parties affected.

(b) [Reserved] Editorial Note: For a list of communities issued under this section and not carried in the CFR see the List of CFR Sections Affected, which appears in the Finding Aids Section of the printed volume and on GPO Access.

§ 70.8 Premium refund after Letter of Map Amendment.

A Standard Flood Insurance Policyholder whose property has become the subject of a Letter of Map Amendment under this part may cancel the policy within the current policy year and receive a premium refund under the conditions set forth in Sec. 62.5 of this subchapter. [41 FR 46991, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979]

§ 70.9 Review of proposed projects.

An individual who proposes to build one or more structures on a portion of property that may be included inadvertently in a Special Flood Hazard Area (SFHA) may request FEMA's comments on whether the proposed structure(s), if built as

proposed, will be in the SFHA. FEMA's comments will be issued in the form of a letter, termed a Conditional Letter of Map Amendment. The data required to support such requests are the same as those required for final Letters of Map Amendment in accordance with Sec. 70.3, except as-built certification is not required and the requests shall be accompanied by the appropriate payment, in accordance with 44 CFR part 72. All such requests for CLOMAs shall be submitted to the FEMA Regional Office servicing the community's geographic area or to the FEMA Headquarters Office in Washington, DC.

[62 FR 5736, Feb. 6, 1997]

APPENDIX F: FEMA FORMS

This Appendix includes copies of the following certificates that are mentioned in the Study Course and used in implementing your floodplain management ordinances:

- ◆ [FEMA Form 81-31](#), Elevation Certificate and Instructions
- ◆ [FEMA Form 81-65](#), Floodproofing Certificate

The following FEMA forms may be of interest to local officials, but are not included in this Appendix:

- ◆ [FEMA Form 81-92, MT-EZ](#), Application Form for Single Residential Lot or Structure Amendments to National Flood Insurance Program Maps;
- ◆ [FEMA Form 81-87, MT-1](#), Application Forms for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill;
- ◆ [FEMA Form 81-89, MT-2](#), Application Forms for Conditional Letters of Map Revision and Letters of Map Revision; and
- ◆ [Standard Flood Hazard Determination form.](#)

Current copies of all of these certificates and forms can be obtained from the following sources:

- ◆ They may be downloaded from FEMA's website at <http://www.fema.gov/nfip/forms.shtm>;
- ◆ They are available on the CD-ROM version of the *National Flood Insurance Program (NFIP) Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials*;
- ◆ You may request the forms by calling the FEMA Map Assistance Center (FMAC) toll-free at 1-877-FEMA-MAP (1-877-336-2627); and
- ◆ You may request the forms electronically at femamapspecialist@patlive.com.

While some of the forms may have passed their expiration dates, they are still current and should still be used.

They may be reproduced for local use.

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM

O.M.B. No. 3067-0077
Expires December 31, 2005

ELEVATION CERTIFICATE

Important: Read the instructions on pages 1 - 7.

| | | |
|---|--|--|
| SECTION A - PROPERTY OWNER INFORMATION | | For Insurance Company Use: |
| BUILDING OWNER'S NAME [REDACTED] | | Policy Number [REDACTED] |
| BUILDING STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. No.) OR P.O., ROUTE AND BOX NO. [REDACTED] | | Company NAIC Number [REDACTED] |
| CITY [REDACTED] | STATE [REDACTED] | ZIP CODE [REDACTED] |
| PROPERTY DESCRIPTION (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) [REDACTED] | | |
| BUILDING USE (e.g., Residential, Non-residential, Addition, Accessory, etc. Use a Comments area, if necessary.) [REDACTED] | | |
| LATITUDE/LONGITUDE (OPTIONAL) (##° - ##' - ###" or ##.####) | HORIZONTAL DATUM: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983 | SOURCE: <input type="checkbox"/> GPS (Type: [REDACTED]) <input type="checkbox"/> USGS Quad Map <input type="checkbox"/> Other: [REDACTED] |

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

| | | | |
|--|--------------------------|---|---|
| B1. NFIP COMMUNITY NAME & COMMUNITY NUMBER [REDACTED] | | B2. COUNTY NAME [REDACTED] | B3. STATE [REDACTED] |
| B4. MAP AND PANEL NUMBER [REDACTED] | B5. SUFFIX [REDACTED] | B6. FIRM INDEX DATE [REDACTED] | B7. FIRM PANEL EFFECTIVE/REVISED DATE [REDACTED] |
| B8. FLOOD ZONE(S) [REDACTED] | | B9. BASE FLOOD ELEVATION(S) (Zone AO, use depth of flooding) [REDACTED] | |

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in B9.
 FIS Profile FIRM Community Determined Other (Describe): [REDACTED]

B11. Indicate the elevation datum used for the BFE in B9: NGVD 1929 NAVD 1988 Other (Describe): [REDACTED]

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No Designation Date [REDACTED]

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

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

C2. Building Diagram Number [REDACTED]. Select the building diagram most similar to the building for which this certificate is being completed - see pages 6 and 7. If no diagram accurately represents the building, provide a sketch or photograph.

C3. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO
 Complete items C3-a-i below according to the building diagram specified in item C2. State the datum used. If the datum is different from the datum used for the BFE in Section B, convert the datum to that used for the BFE. Show field measurements and datum conversion calculation. Use the space provided or the Comments area of Section D or Section G, as appropriate, to document the datum conversion.
 Datum [REDACTED] Conversion/Comments [REDACTED]

Elevation reference mark used [REDACTED]. Does the elevation reference mark used appear on the FIRM? Yes No

a) Top of bottom floor (including basement or enclosure) [REDACTED] ft. (m)
 b) Top of next higher floor [REDACTED] ft. (m)
 c) Bottom of lowest horizontal structural member (V zones only) [REDACTED] ft. (m)
 d) Attached garage (top of slab) [REDACTED] ft. (m)
 e) Lowest elevation of machinery and/or equipment servicing the building (Describe in a Comments area) [REDACTED] ft. (m)
 f) Lowest adjacent (finished) grade (LAG) [REDACTED] ft. (m)
 g) Highest adjacent (finished) grade (HAG) [REDACTED] ft. (m)
 h) No. of permanent openings (flood vents) within 1 ft. above adjacent grade [REDACTED]
 i) Total area of all permanent openings (flood vents) in C3h [REDACTED] sq. in. (sq. cm)

License Number, Embossed Seal, Signature, and Date

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

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

| | |
|-----------------------------|--|
| CERTIFIER'S NAME [REDACTED] | LICENSE NUMBER [REDACTED] |
| TITLE [REDACTED] | COMPANY NAME [REDACTED] |
| ADDRESS [REDACTED] | CITY [REDACTED] STATE [REDACTED] ZIP CODE [REDACTED] |

| | | |
|----------------------|-----------------|----------------------|
| SIGNATURE [REDACTED] | DATE [REDACTED] | TELEPHONE [REDACTED] |
|----------------------|-----------------|----------------------|

| | | | |
|---|---------------------|------------------------|--------------------------------|
| IMPORTANT: In these spaces, copy the corresponding information from Section A. | | | For Insurance Company Use: |
| BUILDING STREET ADDRESS (including Apt., Unit, Suite, and/or Bldg. No.) OR P.O. ROUTE AND BOX NO. [REDACTED] | | | Policy Number [REDACTED] |
| CITY [REDACTED] | STATE [REDACTED] | ZIP CODE [REDACTED] | Company NAIC Number [REDACTED] |

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

COMMENTS
[REDACTED]

Check here if
attachments

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zone AO and Zone A (without BFE), complete items E1 through E4. If the Elevation Certificate is intended for use as supporting information for a LOMA or LOMR-F, Section C must be completed.

- E1. Building Diagram Number [REDACTED]. Select the building diagram most similar to the building for which this certificate is being completed – see pages 6 and 7. If no diagram accurately represents the building, provide a sketch or photograph.)
- E2. The top of the bottom floor (including basement or enclosure) of the building is [REDACTED] ft.(m) [REDACTED] in.(cm) above or below (check one) the highest adjacent grade. (Use natural grade, if available).
- E3. For Building Diagrams 6-8 with openings (see page 7), the next higher floor or elevated floor (elevation b) of the building is [REDACTED] ft.(m) [REDACTED] in.(cm) above the highest adjacent grade. Complete items C3.h and C3.i on front of form.
- E4. The top of the platform of machinery and/or equipment servicing the building is [REDACTED] ft.(m) [REDACTED] in.(cm) above or below (check one) the highest adjacent grade. (Use natural grade, if available).
- E5. For Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance?
 Yes No Unknown. The local official must certify this information in Section G.

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, C (Items C3.h and C3.i only), and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, C, and E are correct to the best of my knowledge.

PROPERTY OWNER'S OR OWNER'S AUTHORIZED REPRESENTATIVE'S NAME
[REDACTED]

ADDRESS [REDACTED] CITY [REDACTED] STATE [REDACTED] ZIP CODE [REDACTED]

SIGNATURE [REDACTED] DATE [REDACTED] TELEPHONE [REDACTED]

COMMENTS [REDACTED]

Check here if
attachments

SECTION G - COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below.

- G1. The information in Section C was taken from other documentation that has been signed and embossed by a licensed surveyor, engineer, or architect who is authorized by state or local law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)
- G2. A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.
- G3. The following information (Items G4-G9) is provided for community floodplain management purposes.

| | | |
|---------------------------------|--------------------------------------|---|
| G4. PERMIT NUMBER [REDACTED] | G5. DATE PERMIT ISSUED [REDACTED] | G6. DATE CERTIFICATE OF COMPLIANCE/OCCUPANCY ISSUED [REDACTED] |
|---------------------------------|--------------------------------------|---|

G7. This permit has been issued for: New Construction Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building is:

[REDACTED] ft.(m) Datum: [REDACTED]

G9. BFE (or in Zone AO) depth of flooding at the building site is:

[REDACTED] ft.(m) Datum: [REDACTED]

LOCAL OFFICIAL'S NAME [REDACTED] TITLE [REDACTED]

COMMUNITY NAME [REDACTED] TELEPHONE [REDACTED]

SIGNATURE [REDACTED] DATE [REDACTED]

COMMENTS [REDACTED]



FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

AND

INSTRUCTIONS

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

PAPERWORK BURDEN DISCLOSURE NOTICE

FEMA Form 81-31

The public reporting burden for this form is estimated to be 3.0 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0077). NOTE: Please do not send your completed form to the above address.

PURPOSE OF THE ELEVATION CERTIFICATE

The Elevation Certificate is an important administrative tool of the National Flood Insurance Program (NFIP). It is to be used to provide elevation information necessary to ensure compliance with community floodplain management ordinances, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment or Revision (LOMA or LOMR-F).

The Elevation Certificate is required in order to properly rate post-FIRM buildings, which are buildings constructed after publication of the Flood Insurance Rate Map (FIRM), for flood insurance Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO. The Elevation Certificate is not required for pre-FIRM buildings unless the building is being rated under the optional post-FIRM flood insurance rules.

As part of the agreement for making flood insurance available in a community, the NFIP requires the community to adopt a floodplain management ordinance that specifies minimum requirements for reducing flood losses. One such requirement is for the community to obtain the elevation of the lowest floor (including basement) of all new and substantially improved buildings and maintain a record of such information. The Elevation Certificate provides a way for a community to comply with this requirement.

Use of this certificate does not provide a waiver of the flood insurance purchase requirement. Only a LOMA or LOMR-F from the Federal Emergency Management Agency (FEMA) can amend the FIRM and remove the Federal mandate for a lending institution to require the purchase of flood insurance. However, the lending institution has the option of requiring flood insurance even if a LOMA/LOMR-F has been issued by FEMA. The Elevation Certificate may be used to support a LOMA or LOMR-F request. Lowest floor and lowest adjacent grade elevations certified by a surveyor or engineer will be required if the certificate is used to support a LOMA or LOMR-F request.

This certificate is used only to certify building elevations. A separate certificate is required for floodproofing. Under the NFIP, non-residential buildings can be floodproofed up to or above the Base Flood Elevation (BFE). A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE. Floodproofing of residential buildings is not permitted under the NFIP unless FEMA has granted the community an exception for

residential floodproofed basements. The community must adopt standards for design and construction of floodproofed basements before FEMA will grant a basement exception. For both floodproofed non-residential buildings and residential floodproofed basements in communities that have been granted an exception by FEMA, a floodproofing certificate is required.

INSTRUCTIONS FOR COMPLETING THE ELEVATION CERTIFICATE

The Elevation Certificate is to be completed by a land surveyor, engineer, or architect who is authorized by law to certify elevation information when elevation information is required for Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, or AR/AO. Community officials who are authorized by law or ordinance to provide floodplain management information may also complete this form. For Zones AO and A (without BFE), a community official, a property owner, or an owner's representative may provide information on this certificate, unless the elevations are intended for use in supporting a LOMA or LOMR-F. Certified elevations must be included if the purpose of completing the Elevation Certificate is to obtain a LOMA or LOMR-F.

In Puerto Rico only, elevations for building information and flood hazard information may be entered in meters.

SECTION A - PROPERTY OWNER INFORMATION

This section identifies the building, its location, and its owner. Enter the name(s) of the building owner(s), the building's complete street address, and the lot and block number. If the building's address is different from the owner's address, enter the address of the building being certified. If the address is a rural route or a Post Office box number, enter the lot and block numbers, the tax parcel number, the legal description, or an abbreviated location description based on distance and direction from a fixed point of reference. For the purposes of this certificate, "building" means both a building and a manufactured (mobile) home.

A map may be attached to this certificate to show the location of the building on the property. A tax map, FIRM, or detailed community map is appropriate. If no map is available, provide a sketch of the property location, and the location of the building on the property. Include appropriate landmarks such as nearby roads, intersections, and bodies of water. For building use, indicate whether the building is residential, non-residential, an addition to an existing residential or non-residential building, an accessory building (e.g., garage), or other type of structure. Use the Comments area of Section F if needed.

If latitude and longitude data are available, enter them in degrees, minutes, and seconds, or in decimal degrees, taken at the center of the front of the building. Enter arc seconds to two decimal places. Indicate the horizontal datum and the source of the measurement data (for example, taken with GPS, scaled from a USGS Quad Map, etc.).

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Complete the Elevation Certificate on the basis of the FIRM in effect at the time of the certification.

The information for Section B is obtained by reviewing the FIRM panel that includes the building's location. Information about the current FIRM and a pamphlet titled "Guide to Flood Maps" are available from the Federal Emergency Management Agency (FEMA) website at <http://www.fema.gov> or by calling 1-800-427-4661. If a Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR-F) has been issued by FEMA, please provide the letter date and case number in the Comments area of Section D or Section G, as appropriate.

Item B1. NFIP Community Name & Community Number. Enter the complete name of the community in which the building is located and the associated 6-digit community number. For a building that is in an area that has been annexed by one community but is shown on another community's FIRM, enter the community name and 6-digit number of the annexing community. For a newly incorporated community, use the name and 6-digit number of the new community. Under the NFIP, a "community" is any State or area or political subdivision thereof, or any Indian tribe or authorized native organization, which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction. To determine the current community number, see the NFIP *Community Status Book*, available on FEMA's website at <http://www.fema.gov> or by calling 1-800-427-4661.

Item B2. County Name. Enter the name of the county or counties in which the community is located. For an unincorporated area of a county, enter "unincorporated area." For an independent city, enter "independent city."

Item B3. State. Enter the 2-letter state abbreviation (for example, VA, TX, CA).

Item B4. Map and Panel Number. Enter the 10-digit number shown on the FIRM panel where the building or manufactured (mobile) home is located. The first six digits will not match the NFIP community number: 1) when the sixth digit is a "C," in which case the FIRM panel is in a countywide format; or 2) when one community has annexed land from another community but the FIRM panel has not been updated to reflect this annexation. If the sixth digit is a "C," it is followed by a four-digit map number. For maps not in countywide format, enter the "community panel number" shown on the FIRM.

Item B5. Suffix. Enter the suffix letter shown on the FIRM panel that includes the building's location.

Item B6. FIRM Index Date. Enter the effective date or map revised date shown on the FIRM Index.

Item B7. FIRM Panel Effective/Revised Date. Enter the map effective date or the map revised date shown on the FIRM panel. This will be the latest of all dates shown on the map. The current FIRM panel effective date can be determined by calling 1-800-427-4661.

Item B8. Flood Zone(s). Enter the flood zone, or flood zones, in which the building is located. All flood zones containing the letter "A" or "V" are considered Special Flood Hazard Areas. The flood zones are A, AE, A1-A30, V, VE, V1-V30, AH, AO, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO. Each flood zone is defined in the legend of the FIRM panel on which it appears.

Item B9. Base Flood Elevation(s). Using the appropriate Flood Insurance Study (FIS) Profile, Flood Elevation Table, or FIRM panel, locate the property and enter the BFE (or base flood depth) of the building site. If the building is located in more than one flood zone in Item B8., list all appropriate BFEs in Item B9. BFEs are shown on a FIRM or FIS Profile for Zones A1-A30, AE, AH, V1-V30, VE, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO; flood depth numbers are shown for Zone AO. Use the AR BFE if the building is located in any of Zones AR/A, AR/AE, AR/A1-A30, AR/AH, or AR/AO. In A or V zones where BFEs are not provided on the FIRM, the community may have established BFEs or obtained BFE data from other sources. For subdivisions and other developments of more than 50 lots or 5 acres, establishment of BFEs is required by the community's floodplain management ordinance. If the BFE is obtained from another source, enter the BFE in Item B9.

Item B10. Indicate the source of the BFE that you entered in Item B9.

Item B11. Indicate the elevation datum to which the elevations on the applicable FIRM are referenced.

Item B12. Indicate whether the building is located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA). Federal flood insurance is prohibited in designated CBRS areas for buildings or manufactured (mobile) homes built or substantially improved after the date of the CBRS designation. An information sheet explaining CBRS areas may be obtained on FEMA’s website at <http://www.fema.gov> or by calling 1-800-427-4661.

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

Complete Section C if the building is located in any of Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, or AR/AO, or if this certificate is being used to support a LOMA or LOMR-F. If the building is located in Zone AO or Zone A (without BFE), complete Section E instead. To ensure that all required elevations are obtained, it may be necessary to enter the building (for instance, if the building has a basement or sunken living room, split-level construction, or machinery and equipment).

Surveyors may not be able to gain access to some crawl spaces to shoot the elevation of the crawl space floor. If access to the crawl space cannot be gained, use the following guidance:

- ◆ Use a yardstick or tape measure to measure the floor height to the “next higher floor,” and then subtract the crawl space height from the elevation of the “next higher floor.”
- ◆ Contact the local floodplain administrator of the community that the building is located in. The community may have documentation of the elevation of the crawl space floor as part of the permit issued for the building.
- ◆ If the property owner has documentation or knows the height of the crawl space floor to the next higher floor, try to verify this by looking inside the crawl space through any openings or vents.

In all three cases, provide the elevation in the Comments area and a brief description of how the elevation was obtained.

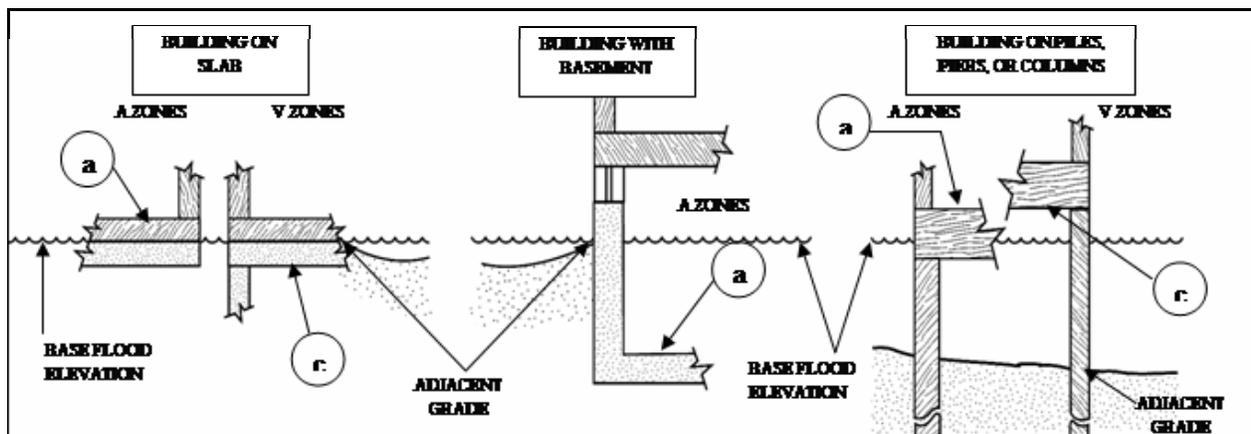
Item C1. Indicate whether the elevations to be entered in this section are based on construction drawings, a building under construction, or finished construction. For either of the first two choices, a post-construction Elevation Certificate will be required when construction is complete. If the building is under construction, include only those elevations that can be surveyed in Items C3.a-g. Use the Comments area to provide elevations obtained from the construction plans or drawings. Select “finished construction” only when all machinery and/or equipment—furnaces, hot water heaters, heat pumps, air conditioners, and elevators and their associated equipment—have been installed and the grading around the building is completed.

Item C2. Select the diagram on pages 6 and 7 that best represents the building. Then enter the diagram number and use the diagram to identify and determine the appropriate elevations requested in Items C3.a-g. If you are unsure of the correct diagram, select the diagram that most closely resembles the building being certified, or provide a sketch or photograph of the building and enter all elevations in Items C3.a-g.

Item C3. Indicate whether the elevation reference mark (benchmark) used during the field survey is an elevation mark on the FIRM. If it is not, indicate the source and datum for the elevation. Vertical

control benchmarks other than those shown on the FIRM are acceptable for elevation determinations. Show the conversion from the field survey datum used to the datum used for the BFE(s) entered in Item B9. All elevations for the certificate must be referenced to the datum on which the BFE is based. Show the datum conversion, if applicable, in this section or in the Comments area of Section D. For property experiencing ground subsidence, the most recently adjusted reference mark elevations must be used for determining building elevations. However, when subsidence is involved, the BFE should not be adjusted. Enter elevations in Items C3.a-g to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico).

Items C3.a-d. Enter the building elevations (excluding the attached garage) indicated by the selected building diagram (Item C2.) in Items C3.a-c. If there is an attached garage, enter the elevation for top of attached garage slab in Item C3.d. (Because elevation for top of attached garage slab is self-explanatory, attached garages are not illustrated in the diagrams.) If the building is located in a V zone on the FIRM, complete Item C3.c. If the flood zone cannot be determined, enter elevations for all of Items C3.a-g. For buildings in A zones, elevations a, b, d, and e should be measured at the top of the floor. For buildings in V zones, elevation c must be measured at the bottom of the lowest horizontal structural member of the floor (see drawing below). For buildings elevated on a crawl space, Diagram 8, enter the elevation of the top of the crawl space floor in Item C3.a, whether or not the crawl space has openings (flood vents). *If any item does not apply to the building, enter "N/A" for not applicable.*



Item C3.e. Enter the lowest elevation of machinery and/or equipment—furnaces, hot water heaters, heat pumps, air conditioners, and elevators and their associated equipment—in an attached garage or enclosure or on an open utility platform that provides utility services for the building. If the machinery and/or equipment is mounted to a wall, pile, etc., enter the platform elevation of the machinery and/or equipment. Indicate machinery/equipment type in the Comments area of Section D or Section G, as appropriate. *If this item does not apply to the building, enter "N/A" for not applicable.*

Items C3.f-g. Adjacent grade is defined as the elevation of the ground, sidewalk, patio slab, or deck support immediately next to the building. If the certificate is to be used for a LOMA or LOMR-F, provide in the Comments area the lowest adjacent grade elevation measured at the deck support or stairs if that elevation is lower than the building's lowest adjacent grade. For Zone AO, use the natural grade elevation, if available. This measurement must be to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico) if this certificate is being used to support a request for a LOMA or LOMR-F.

Items C3.h-i. Enter the number of permanent openings (flood vents) in the walls supporting the building, including the attached garage, that are no higher than 1.0 foot above the adjacent grade. Determine the total area of all such openings in square inches (square cm, in Puerto Rico), and enter the

total in Item C3.i. If the building has no permanent openings (flood vents) within 1.0 foot above adjacent grade, enter “0” (zero) for each of Items C3.h and C3.i. Enter in the Comments area whether the openings are on the foundation walls of the building and/or on the walls of the garage.

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

Complete as indicated. This section of the Elevation Certificate may be signed by only a land surveyor, engineer, or architect who is authorized by law to certify elevation information. Place embossed seal and signature in the box next to elevations in Section C. A flat stamp is acceptable only in states that do not authorize use of an embossed seal over the signature of a professional. You are certifying that the information in Sections A, B, and C on this certificate represents your best efforts to interpret the data available and that you understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001. Use the Comments area of Section D, on the back of the certificate, to provide datum, elevation, or other relevant information not specified on the front.

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO & ZONE A (WITHOUT BFE)

Complete Section E if the building is located in Zone AO or Zone A (without BFE). Otherwise, complete Section C instead.

Item E1. Select the diagram on pages 6 and 7 that best represents the building; then enter the diagram number. If you are unsure of the correct diagram, select the diagram that most closely resembles the building, or provide a sketch or photograph. Explain in the Comments area if the measurement provided under Item E.2, E.3, or E.4 is based on the “natural grade.”

Item E2. Enter the height in feet and inches (meters and centimeters, in Puerto Rico) of the top of the bottom floor (as indicated in the applicable diagram) above or below the highest adjacent grade (HAG). For post-FIRM buildings in Zone AO, the community’s floodplain management ordinance requires that this value equal or exceed the base flood depth on the FIRM. Buildings in Zone A (without BFE) may qualify for a lower insurance rate if an engineered BFE is developed at the site.

Item E3. For Building Diagrams 6-8 with proper openings (see page 7), enter the height in feet and inches (meters and centimeters, in Puerto Rico) of the next higher floor or elevated floor (as indicated in the applicable diagram) above the highest adjacent grade (HAG). Be sure that you have completed Items C3.h and C3.i on the front of the form to show the number of permanent openings (flood vents) within 1 foot above adjacent grade and the total area of the openings.

Item E4. Enter the height in feet and inches, in relation to the highest adjacent grade next to the building, of the platform that supports the machinery and/or equipment servicing the building. Indicate machinery/equipment type in the Comments area of Section E. *If this item does not apply to the building, enter “N/A” for not applicable.*

Item E5. For those communities where this base flood depth is not available, the community will need to determine whether the top of the bottom floor is elevated in accordance with the community’s floodplain management ordinance.

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

Complete as indicated. This section is provided for certification of measurements taken by a property owner or property owner's representative when responding to Sections A, B, C (Items C3.h and C3.i only), and E. The address entered in this section must be the actual mailing address of the property owner or property owner's representative who provided the information on the certificate.

SECTION G - COMMUNITY INFORMATION (OPTIONAL)

Complete as indicated. The community official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. If the authorized community official completes Sections C, E, or G, complete the appropriate item(s) and sign this section.

Check **Item G1**, if Section C is completed with elevation data from other documentation, including elevations obtained from the Community Rating System Elevation Software, that has been signed and embossed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. Indicate the source of the elevation data and the date obtained in the Comments area of Section G. If you are both a community official and a licensed land surveyor, engineer, or architect authorized by law to certify elevation information, and you performed the actual survey for a building in Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/A1-A30, AR/AE, AR/AH, or AR/AO, you must also complete Section D.

Check **Item G2**, if information is entered in Section E by the community for a building in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

Check **Item G3**, if the information in Items G4-G9 has been completed for community floodplain management purposes to document the as-built lowest floor elevation of the building. Section C of the Elevation Certificate records the elevation of various building components but does not determine the lowest floor of the building or whether the building, as constructed, complies with the community's floodplain management ordinance. This must be done by the community. Items G4-G9 provide a way to document these determinations.

Item G4. Permit Number. Enter the permit number or other identifier to key the Elevation Certificate to the permit issued for the building.

Item G5. Date Permit Issued. Enter the date the permit was issued for the building.

Item G6. Date Certificate of Compliance Issued. Enter the date that the Certificate of Compliance or Occupancy or similar written official documentation of as-built lowest floor elevation was issued by the community as evidence that all work authorized by the floodplain development permit has been completed in accordance with the community's floodplain management laws or ordinances.

Item G7. New Construction or Substantial Improvement. Check the applicable box. "Substantial Improvement" means any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the start of construction of the improvement. The term includes buildings that have incurred substantial damage, regardless of the actual repair work performed.

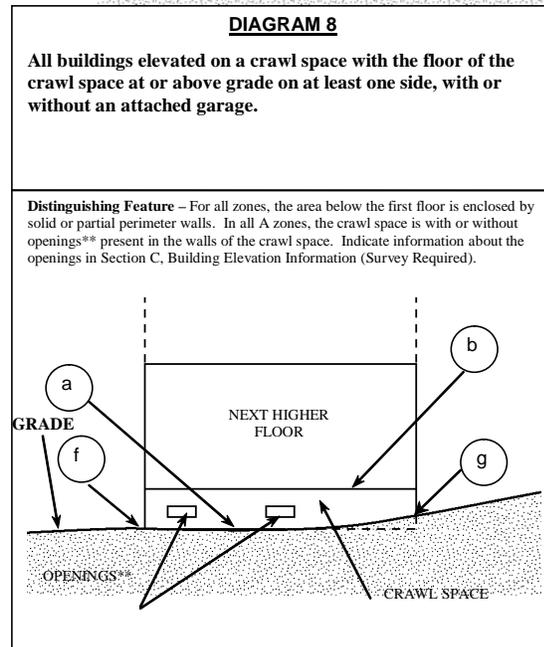
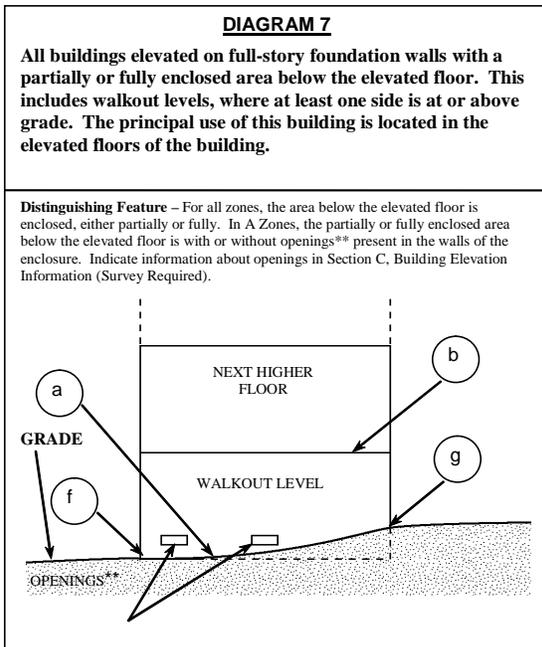
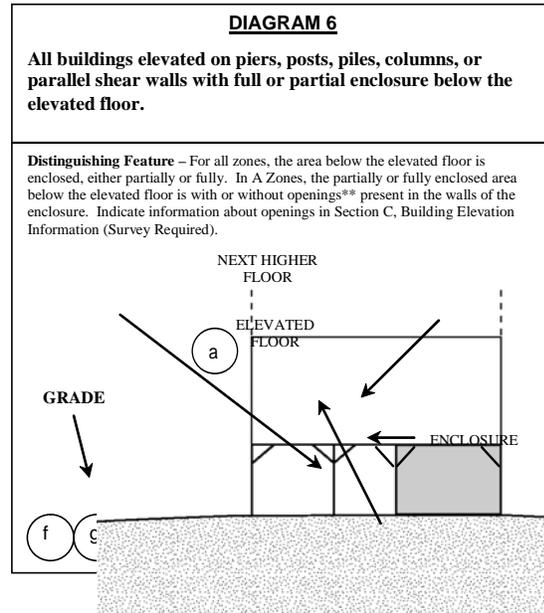
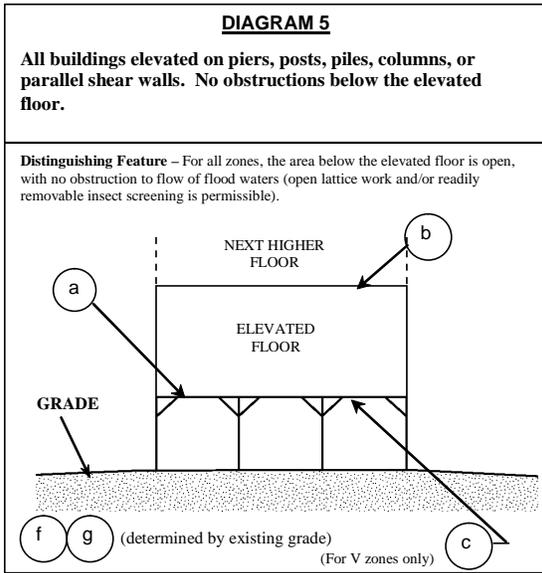
Item G8. As-built lowest floor elevation. Enter the elevation of the lowest floor (including basement) when the construction of the building is completed and a final inspection has been made to confirm that the building is built in accordance with the permit, the approved plans, and the community's floodplain management laws or ordinances. Indicate the elevation datum used.

Item G9. BFE. Using the appropriate FIRM panel, FIS, or other data source, locate the property and enter the BFE (or base flood depth) of the building site. Indicate the elevation datum used.

Enter your name, title, and telephone number, and the name of the community. Sign and enter the date in the appropriate blanks.

The following eight diagrams illustrate various types of buildings. Compare the features of the building being certified with the features shown in the diagrams and select the diagram most applicable. Enter the diagram number in Item C2. and the elevations in Items C3.a-C3.g.

In A zones, the floor elevation is taken at the top finished surface of the floor indicated; in V zones, the floor elevation is taken at the bottom of the lowest horizontal structural member (see drawing in instructions for Section C).



**An “opening” (flood vent) is defined as a permanent opening in a wall that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of two openings is required for enclosures or crawl spaces with a total net area of not less than one square inch for every square foot of area enclosed. Each opening must be on different sides of the enclosed area. If a building has more than one enclosed area, each area must have openings on exterior walls to allow floodwater to directly enter. The bottom of the openings must be no higher than one foot above the grade underneath the flood vents. Alternatively, you may submit a certification by a registered professional engineer or architect that the design will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM

FLOODPROOFING CERTIFICATE
FOR NON-RESIDENTIAL STRUCTURES

The floodproofing of non-residential buildings may be permitted as an alternative to elevating to or above the Base Flood Elevation; however, a floodproofing design certification is required. This form is to be used for that certification. Floodproofing of a residential building does not alter a community's floodplain management elevation requirements or affect the insurance rating unless the community has been issued an exception by FEMA to allow floodproofed residential basements. The permitting of a floodproofed residential basement requires a separate certification specifying that the design complies with the local floodplain management ordinance.

| | |
|--|---------------------------|
| BUILDING OWNER'S NAME | FOR INSURANCE COMPANY USE |
| STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. Number) OR P.O. ROUTE AND BOX NUMBER | POLICY NUMBER |
| OTHER DESCRIPTION (Lot and Block Numbers, etc.) | COMPANY NAIC NUMBER |
| CITY | STATE |
| | ZIP CODE |

SECTION I FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Provide the following from the proper FIRM:

| COMMUNITY NUMBER | PANEL NUMBER | SUFFIX | DATE OF FIRM INDEX | FIRM ZONE | BASE FLOOD ELEVATION (In AO Zones, Use Depth) |
|------------------|--------------|--------|--------------------|-----------|--|
| | | | | | |

SECTION II FLOODPROOFING INFORMATION (By a Registered Professional Engineer or Architect)

Floodproofing Design Elevation Information:

Building is floodproofed to an elevation of feet NGVD. (Elevation datum used must be the same as that on the FIRM.)

Height of floodproofing on the building above the lowest adjacent grade is feet.

(NOTE: for insurance rating purposes, the building's floodproofed design elevation must be at least one foot above the Base Flood Elevation to receive rating credit. If the building is floodproofed only to the Base Flood Elevation, then the building's insurance rating will result in a higher premium.)

SECTION III CERTIFICATION (By Registered Professional Engineer or Architect)

Non-Residential Floodproofed Construction Certification:

I certify that, based upon development and/or review of structural design, specifications, and plans for construction, the design and methods of construction are in accordance with accepted standards of practice for meeting the following provisions:

The structure, together with attendant utilities and sanitary facilities, is watertight to the floodproofed design elevation indicated above, with walls that are substantially impermeable to the passage of water.

All structural components are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy, and anticipated debris impact forces.

I certify that the information on this certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

| | | | |
|------------------|--------------------------------|-------|----------|
| CERTIFIER'S NAME | LICENSE NUMBER (or Affix Seal) | | |
| TITLE | COMPANY NAME | | |
| ADDRESS | CITY | STATE | ZIP CODE |
| SIGNATURE | DATE | PHONE | |

Copies should be made of this Certificate for: 1) community official, 2) insurance agent/company, and 3) building owner.

APPENDIX G: **EMI COURSES**

The courses summarized in this Appendix are presented one or more times each year at FEMA’s Emergency Management Institute (EMI), located in Emmitsburg, Maryland.

Tuition for these courses is free for State and local government officials and travel stipends are available. For more information, contact the training office of your state emergency management agency, or call 1-800-238-3358 or visit EMI’s Website at <http://training.fema.gov/EMIWeb>.

| Course Name | Course Code | Course Description | Selection Criteria |
|---|--------------------|---|--|
| Managing Floodplain Development Through the National Flood Insurance Program (NFIP) | E273 | This course is designed to provide an organized training opportunity for local officials responsible for administering their local floodplain ordinance. The course will focus on the NFIP and concepts of floodplain management, maps and studies, ordinance administration, and the relationship between floodplain management and flood insurance. | Local officials responsible for administering local floodplain management ordinances, including but not limited to floodplain management administrators, building inspectors, code enforcement/zoning officers, planners, city/county managers, attorneys, engineers, and public works officials. Federal/State/regional floodplain managers also are encouraged to attend. The course is designed for those officials with limited floodplain management experience. Attendance will be limited to two participants from any state for each offering. |
| National Flood Insurance Program/Community Rating System (NFIP/CRS) | E278 | This course covers the CRS, a nationwide initiative of FEMA’s NFIP. It describes activities eligible for credit under CRS, how a community applies, and how a community modifies an application to improve its classification. | FEMA regional office staff, NFIP State coordinators, those managing floodplain services for local governments, and others interested in learning about CRS so they can provide technical assistance to communities seeking to apply for CRS credit. Attendance is limited to two participants from any one community per fiscal year. |

| Course Name | Course Code | Course Description | Selection Criteria |
|--|-------------|--|---|
| Mitigation for Tribal Officials | E344 | This course provides Tribal members and their representatives with an overview of FEMA's mitigation programs, to outline tribal mitigation responsibilities, and to discuss opportunities for achieving mitigation successes. The course will cover mitigation planning, the National Flood Insurance Program (NFIP), and mitigation grant programs. | The course will be limited to federally recognized tribal members and their representatives. |
| Retrofitting Flood-Prone Residential Buildings | E279 | This course is designed to provide engineering and economic guidance on what constitutes proper retrofitting techniques for flood-prone residential structures. The course will focus on the concepts of flood proofing, regulatory framework, controlling parameters, design practices, and benefit, cost, and technical feasibility analysis. There is a case study design exercise and a written examination. | The audience comprises engineers and architects, and building code, floodplain management, hazard mitigation, planning, zoning, and public works officials. This course is intended for those with engineering, architectural, or building science knowledge. |