

Floodplain Administrator's Guide



Indiana Department of Natural Resources



Revised September 2014

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(Cover: Elevated home in Spencer, Indiana; photo by DNR staff)

References:

“Answers to Questions about the NFIP”

IDNR Division of Water “Floodplain Management Handbook”

“www.fema.gov”

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I. ACRONYMS

BFE	-	Base Flood Elevation
CFR	-	Code of Federal Regulations
CLOMA	-	Conditional Letter of Map Amendment
CLOMR	-	Conditional Letter of Map Revision
CLOMR-F	-	Conditional Letter of Map Revision, based on Fill
CRS	-	Community Rating System
e-FARA	-	Electronic Floodplain Analysis and Regulatory Assessment
FARA	-	Floodplain Analysis and Regulatory Assessment
FBFM	-	Flood Boundary Floodway Map
FEMA	-	Federal Emergency Management Agency
FHBM	-	Flood Hazard Boundary Map
FIA	-	Flood Insurance Administration
FIRM	-	Flood Insurance Rate Map
FIS	-	Flood Insurance Study
FMA	-	Flood Mitigation Assistance
FPG	-	Flood Protection Grade
HMGP	-	Hazard Mitigation Grant Program
IDEM	-	Indiana Department of Environmental Management
IDHS	-	Indiana Department of Homeland Security
IDOH	-	Indiana Department of Health
IDNR	-	Indiana Department of Natural Resources
INFIP	-	Indiana Floodplain Information Portal
LOMA	-	Letter of Map Amendment
LOMC	-	Letter of Map Change
LOMR	-	Letter of Map Revision
LOMR-F	-	Letter of Map Revision, based on Fill
NFIP	-	National Flood Insurance Program
NRCS	-	Natural Resources Conservation Service
NWS	-	National Weather Service
PMR	-	Physical Map Revision
SFHA	-	Special Flood Hazard Area
USACE	-	United States Army Corps of Engineers
USGS	-	United States Geological Survey
WYO	-	Write Your Own

II. INTRODUCTION

A. The National Flood Insurance Program (NFIP) in Indiana

The NFIP was created in 1968 as a partnership between the Federal and Local governments to alleviate some of the problems associated with flooding. The program established national floodplain construction standards to mitigate future damage caused by flooding. To be eligible for participation in the program, a community must adopt and enforce an ordinance incorporating all applicable State and Federal floodplain regulations. Participation in the program allows the residents of the community to be eligible for the purchase of flood insurance.

Currently in Indiana, there are over 432 communities participating in the NFIP. Local governmental units participating in the program are given assistance on various levels within the partnership of the NFIP. The IDNR, Division of Water, functions as the administrator of the NFIP in the State of Indiana. The Division of Water's Floodplain Management staff work in conjunction with Local, State, and Federal entities to assist those communities that have recognized the need to enforce floodplain management standards.

In Indiana, the two major drainage basins are the Great Lakes and the Mississippi River Basins. These basins contain water resources from ground water, streams, and over 1,000 public freshwater lakes, reservoirs and ponds. Through participation in the NFIP, land areas are mapped and determined to be SFHAs. Despite the amount of land designated as SFHAs in Indiana, only a small percent of structures within these areas are covered by flood insurance. As of September 5, 2014, there were 28,459 active flood insurance policies in Indiana.

B. Flood Insurance

NFIP coverage is available to all owners of insurable property (a building and/or its contents) in a community participating in the NFIP, regardless of flood zone designation. Almost every type of walled and roofed building that is principally above ground and not entirely over water may be insured if it is in a participating community. In most cases, this includes manufactured (i.e., mobile) homes anchored to permanent foundations, but does not include travel trailers or converted buses or vans. Contents of insurable walled and roofed buildings also may be insured under separate coverage.

After a community joins the NFIP, a policy may be purchased from any licensed property and casualty insurance agent or broker who is in good standing in the State in which the agent is licensed. A policy may also be obtained through an agent representing a WYO company or an employee of the company authorized to issue the coverage.

The WYO Program, started in 1983, is a cooperative undertaking of the insurance industry and the FIA. The WYO Program allows participating property and casualty insurance companies to write and service the Standard Flood Insurance Policy in their own names. The companies receive an expense allowance for policies written and claims processed while the Federal government retains responsibility for underwriting losses. The WYO Program operates within the context of the NFIP, and is subject to its rules and regulations.

III. STATE AND FEDERAL FLOODPLAIN REGULATIONS

A. State Legislation

Indiana Flood Control Act (IC 14-28-1)

In 1945, the Indiana General Assembly determined that it was in the best interest of the citizens of the state to prevent and limit the damaging effects of floods by regulating, supervising, and coordinating the construction, operation, and design of flood control works; alteration of streams; and keeping floodways free and clear. The Natural Resources Commission has been given primary authority concerning flood control activities in the state.

The Act provides that it is illegal to construct a permanent abode or place of residence in a floodway. Any other structure, obstruction, deposit, or excavation in the floodway of any stream in the state must first be approved by the Commission. The IDNR Division of Water has been given authority from the Commission to act on its behalf concerning flood control activities in the state. Proposed construction activities in a floodway are reviewed by the Department of Natural Resources to determine if the work will:

- adversely affect the efficiency of or unduly restrict the capacity of the floodway,
- create an unreasonable hazard to the safety of life or property, or
- result in unreasonably detrimental effects upon the fish, wildlife, and botanical resources.

Changes have since been made to the Act to now authorize the construction of residences in the floodway of a boundary river, which is the Ohio River, provided they comply with State and Federal regulations. (IC 14-28-1-26.5)

Other changes to the Flood Control Act now allow reconstruction of existing residences located in the floodway that have been substantially damaged, provided they comply with State and Federal regulations. (IC 14-28-24)

Indiana Floodplain Management Act (14-28-3)

In 1973, the General Assembly directed the Natural Resources Commission to establish minimum standards for the delineation and regulation of all flood hazard areas within the state. The Commission promulgated rules and regulations (312 IAC 10) that are the minimum standards by which local units of government can develop floodplain management ordinances to regulate the flood hazard areas within their jurisdictions.

B. Federal Legislation

National Flood Insurance Act

The NFIP, enacted in 1968, was designed to alleviate damage to communities and individual hardships caused by flood. Under this program, insurance was made available to homeowners and businesses. New construction in an SFHA was required to be located and built in such a way that the potential for damages and loss of life would be kept at a minimum. The economic justification for the program was the potential to reduce the need for dependence on massive flood disaster relief through safer construction.

Flood Disaster Protection Act

The 1968 NFIP Act was expanded in 1973 by the Flood Disaster Protection Act. This act provided for affordable flood insurance through a federal subsidy. In return, communities were required to adopt and administer local measures that protect lives and regulate construction in the floodplain.

The Act provides that:

- limits on insurance coverage are increased;
- the emergency program (the initial phase of a community's participation) is continued, assuring that individuals and communities can obtain otherwise unavailable flood insurance;
- insurance is required on all federal or federally assisted financing of construction in flood-prone areas; and
- federal flood elevation determinations are accelerated.

Minimum regulation standards for a community enrolling in the NFIP require that permits be issued for all construction and substantial improvements in a flood hazard zone and that all permits must be reviewed to assure that sites are reasonably free from flooding. In addition, communities must require:

- proper anchoring of structures;
- the use of construction materials and methods that will minimize flood damage; and
- new or replacement utility systems to be located and designed to prevent flood loss.

Unified National Program for Floodplain Management (1976)

This program accomplishes the following:

- sets forth a conceptual framework for floodplain management;
- identifies available tools and strategies;
- assesses the implementation capability of existing Federal and State agencies and programs;
- makes recommendations for achieving a unified national floodplain management program.

The program offers guidance applicable to both government and private interests.

Executive Order 11988

This floodplain management executive order signed by President Jimmy Carter on May 24, 1977, requires federal agencies to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the occupancy and modifications of floodplains and to avoid the direct or indirect support of floodplain development whenever there is a practicable alternative. The preferred method for satisfying this requirement is to avoid sites within the floodplain. If an action must be located within the floodplain, the executive order requires that agencies minimize potential harm to people and property and to natural and beneficial floodplain values by incorporating current floodplain management standards into the project.

National Flood Insurance Reform Act of 1994

- Creates a new Mitigation Insurance Benefit
- Improves compliance with mandatory flood insurance purchase requirement
- Creates a new Mitigation Assistance Program
- Increases flood insurance coverage limits
- Codifies the Community Rating System
- Increases the flood insurance policy waiting period to 30 days

Disaster Mitigation Act of 2000 (DMA 2000)

DMA 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for state, local and Indian Tribal entities to closely coordinate mitigation planning and implementation efforts. The requirement for a State mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the State level through establishment of requirements for two different levels of state plans. DMA 2000 also established a new requirements for local mitigation plans authorized up to 7 percent of HMGP funds available to a State or for development of State, local, and Indian Tribal mitigation plans.

The Biggert-Waters Flood Insurance Reform Act of 2012

The Biggert-Waters Flood Insurance Reform Act of 2012 (Biggert-Waters) authorized and funded the national mapping program and certain rate increases to ensure the fiscal soundness of the program by transitioning the program from subsidized rates, also known as artificially low rates, to offer full actuarial rates reflective of risk.

The Consolidated Appropriations Act of 2014

The Consolidated Appropriations Act of 2014 prohibited the implementation of certain sections of the previous law – Biggert-Waters, restoring grandfathering, putting limits on certain rate increases and updating the approach to ensuring the fiscal soundness of the fund by applying an annual surcharge to all policyholders.

Homeowner Flood Insurance Affordability Act of 2014

The Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) repealed certain part of the previous law – Biggert-Waters, restoring grandfathering, putting limits on certain rates increases and updating the approach to ensuring the fiscal soundness of the fund by applying an annual surcharge to all policyholders.

IV. LOCAL FLOODPLAIN ADMINISTRATION

A. Become Familiar with Flood Risks

Local officials should utilize their flood maps and become familiar with the flood risks in their area. The most effective way to accomplish this is to tour the SFHAs in the community. As the tour is being done, a list of the structures at risk should be compiled.

B. Permit Process

1. Permit Development Correctly

By ensuring that new construction is compliant with the local floodplain ordinance, the need for future mitigation is eliminated or significantly reduced. Thus, when a flood occurs, the number of flood-damaged structures should be smaller.

2. Determining Floodplain Status

The first step in the permitting process is to determine the proposed or existing structure's floodplain status (e.g. floodway, flood fringe). This process can be accomplished by utilizing the community's flood maps or by having a site-specific evaluation, known as a Floodplain Analysis and Regulatory Assessment (FARA), completed by the IDNR for the structure in question. The FARA will give the floodplain status and the base flood elevation (BFE) for the area. Once the floodplain status is determined, State and Local regulations can then be applied according to each situation.

3. Building Protection Requirements

All buildings located in a community's Special Flood Hazard Area (SFHA) are required to be protected from flood damage below the Flood Protection Grade (FPG). The FPG is the elevation of the regulatory flood plus two feet at any given location in the SFHA. These requirements are outlined in the local ordinance and apply to the following situations:

- a. Construction or placement of any new building having a floor area greater than 400 square feet;
- b. Addition or improvement made to any existing structure where the cost of the improvement equals or exceeds 50%* of the value of the existing structure (excluding the land).

- c. Reconstruction or repairs made to a damaged building, the cost of which equals or exceeds 50%* of the market value of the building (excluding the value of the land) before damage occurred.
- d. Installing a manufactured home on a new site or a new manufactured home on an existing site. This does not apply to returning an existing manufactured home to the same site it lawfully occupied before it was removed to avoid flood damage and,
- e. Installing a travel trailer or recreational vehicle on a site for more than 180 days.

* Some communities choose to be more restrictive and use a value less than 50%.

4. Determining Cost of Repair/Improvement

This portion of the permit process typically applies to only Pre-FIRM structures in the SFHA. These are the structures built before the flood maps were developed for the community participating in the NFIP. Therefore, these structures are most likely to have their lowest floor elevation below the BFE or the FPG and at greater risk of flood damage.

Post-FIRM structures (those built after the community adopted its original flood maps) should be built in compliance with the community's floodplain ordinance and should not sustain damage unless a flood occurs that is greater than the 1% annual chance flood. Please note that any structure in an SFHA is still at risk of damage if a great enough flood event was to occur.

When determining the cost of repair/improvement, the permit official needs to have two pieces of information, the structure's pre-repair/improvement fair market value and the cost of the repair/improvement. A main objective for the permit official is to use consistency in the method used. By being consistent, this leaves little room for argument about equality. Remember to maintain all documentation in the permit file. This will become especially important when the IDNR or FEMA evaluates the community for NFIP compliance. Note that this procedure is necessary for damage sustained by a structure and includes damage from fire, wind, or other storm related damage.

a. Structure's Pre-Repair/Improvement Value

The structure's value is the fair market value of the structure only, excluding the land. Some ways of determining this value are an appraisal, a bill of sale (e.g. mobile, manufactured homes), an insurance settlement, or tax assessment records.

b. Cost of Repairs/Improvements

The two main items on a cost of repair/improvement list should include the materials used and the cost of labor. When looking at the materials used relative to repair/improvement cost, one must use the fair market value for these materials. This also applies to those materials that are donated. To determine the cost of labor, the Marshall & Swift Residential Cost Handbook can be a source for determining the prevailing wage in different parts of the country. Some exclusions in the cost of repair/improvement list may include: debris removal, cleanup, and building plans and permit fees.

5. Substantial Repair/Improvement/Damage

Substantial repair/improvement/damage occurs when the cost of repairs/improvements equals or exceeds 50%* of the fair market value of the pre-damaged/improved structure.

** Some communities choose to be more restrictive and use a value less than 50%.*

6. Building Protection Requirements/Options

Currently, the two building protection requirements/options are elevation and dry floodproofing. Structures which are required to have their lowest floor elevated must be built to the FPG, which is two feet above the BFE. An elevation certificate containing the actual constructed lowest floor elevation should be obtained and placed in the permit file for the structure. Dry floodproofing applies only to non-residential structures floodproofed to the FPG. A floodproofing certificate should be maintained in the permit file.

7. Additional Permits

Depending on the situation, additional permits other than the local permit may be required. For example, the Indiana Flood Control Act (IC 14-28-1) requires a state permit for construction in the floodway. Other possible permits needed may be from the IDOH, IDEM, and/or the USACE.

8. Pursuing Violations

A violation occurs when construction or repairs are done without the proper permit(s) being obtained or by the failure to follow permit specifications. In these instances, the violations must be pursued. The permit official should ensure that due process is given to the violator. All options must be exhausted before harsher measures such as notification on deed (title) or denial of flood insurance are instituted. For example, a chronological time frame of due process would include:

- a. Issuing letter(s) informing of need for permit
- b. Injunctions (e.g. stop work order)
- c. Fines (e.g. refer to local ordinance)
- d. Mitigating to the fullest extent practicable to include elevation certificate for actuarial rating
- e. Notification on Deed or Title (a legal record that a structure is not built in compliance with local code)*; or,
- f. Request Denial of Flood Insurance (1316) from FEMA.*

** Contact the IDNR Floodplain Management Section for further information.*

C. Public Awareness Campaign

To increase awareness about the risk of flooding in the community, newspaper articles or other forms of media can be used. In addition, information and educational programs can be implemented within the community. Some resources for these programs are the IDNR, Regional planning agencies, FEMA, USACE, NRCS, and the private sector. By bringing these issues to

the forefront, the public will become more knowledgeable about the risks of building in SFHAs. As a result, individuals can make better informed choices when dealing with this issue.

D. Develop Post-Flood Standard Operating Procedure (SOP)

In developing an SOP, the first thing a community should do is take an inventory of its resources. Individuals and groups within the community that are directly involved with flooding issues should compile a list of actions to be taken in time of flooding. Examples of individuals and/or groups are: local permit official, sheriff, emergency manager, police department, fire department, veterinarian, county surveyor, volunteer groups (e.g. Red Cross), IDNR, local Soil and Water Conservation District, County Cooperative Extension Service, community officials, Board of Health, Solid Waste Management Districts, and local utility companies. This team approach to floodplain management will enable the community to collaborate ideas through a diversified group effort.

One possible element to incorporate in your SOP is the establishment of a flood warning and response system. This system should include flood forecasting, warning, and emergency preparedness. The local community can coordinate with the IDHS, NWS, FEMA, and the USACE for assistance in developing a flood warning and response system.

E. Evaluation

In order to make your floodplain management program more efficient, you should periodically evaluate the activities that have been performed. By examining your SOP, permit process, and pursuit of violations, your community can continue to improve. Remember, by permitting new construction and substantial improvements correctly, your community and its citizens will enjoy the benefits of safer structures and reduce the risk of damage from flooding.

V. INDIANA LOCAL FLOODPLAIN PERMITTING PROCEDURES: A STEP-BY-STEP GUIDE

STEP 1

The key initial determination in reviewing an application is the location of the proposed development site relative to the SFHAs within the community, as shown on the effective floodplain map (FHBM, FIRM, FBFM) produced by FEMA. *This determination is made by comparing the location of the site with the flood zone delineation shown on the effective map.*

If the site of the proposed development is obviously outside of the SFHA, (Zone A, AE, AO, AH) then floodplain regulations do not apply.

If the project site is in an SFHA or is a borderline situation proceed to Step 2.

STEP 2

Determine if the project meets the NFIP or local ordinance definition of “development”.

“Development” includes:

- construction, reconstruction, or placement of a building or any addition to a building;
- installing a manufactured home on a site, preparing a site for a manufactured home or installing a recreational vehicle on a site for more than 180 days;
- installing utilities, erection of walls and fences, construction of roads, or similar projects;
- construction of flood control structures such as levees, dikes, dams, channel improvements, etc.;
- mining, dredging, filling, grading, excavation, or drilling operations;
- construction and/or reconstruction of bridges or culverts;
- storage of materials; or
- any other activity that might change the direction, height, or velocity of flood or surface waters.

“Development” does not include activities such as the maintenance of existing buildings and facilities such as painting, re-roofing; resurfacing roads; or gardening, plowing, and similar agricultural practices that do not involve filling, grading, excavation, or the construction of permanent buildings.

If the project does not meet the definition for “development”, floodplain regulations do not apply.

If the project meets this definition, continue to Step 3.

STEP 3

Have the applicant complete and submit a local Floodplain Permit Application form. The applicant must also provide location information and plans for the proposed project.

A location or plat map of the site should be attached to every application form. Plans for the proposed development should also be attached showing existing and proposed conditions including all appropriate dimensions and elevations. Continue to Step 4.

STEP 4

Check to see if the proposed site is located in the regulatory floodway by measuring the floodway width on the FEMA FBFM or FIRM (if available) and comparing this distance to the proposed project’s actual ground location.

If the site is located in a regulatory floodway, do not issue the local permit until the applicant obtains either an IDNR permit/authorization or verification/documentation that an IDNR permit is not required. A copy of the IDNR permit/authorization or verification/documentation should be kept with the local permit application. Keep in mind that a local permit cannot be less restrictive than a State issued permit/authorization. If the site is not located in a regulatory floodway, only local floodplain regulations apply and no IDNR permit/authorization is needed.

If the site is located in the flood fringe as shown on the community's FIRM, the site is subject to the local floodplain regulations.

If the site is located in a floodplain where the floodway limits have not been identified and *the drainage area is greater than one square mile**, the applicant must request and obtain a floodplain analysis and regulatory assessment (FARA) from IDNR Division of Water that includes the base flood elevation and floodway limits. The FARA can either be obtained by sending in a FARA request form, which is available on-line on the Division of Water Web site under forms at in.gov/dnr/water; or, an electronic FARA (e-FARA) can be requested on-line through the Indiana Floodplain Information Portal (INFIP) at INFIP.dnr.in.gov.

If the site is located in the floodway or in a floodplain where the floodway limits have not been identified and *the drainage area is less than one square mile**, the applicant must provide an engineering analysis including a base flood elevation for the site.

**If it is uncertain whether the drainage area is greater than one square mile, you may request a drainage area determination from IDNR.*

Continue on to Step 5.

STEP 5

Determine if the project includes construction of a new building or substantial improvement of an existing building.

A "building" is a structure that is principally above ground and is enclosed by walls and a roof. The term includes a gas or liquid storage tank, a manufactured home, or a prefabricated building. The term also includes recreational vehicles to be installed on a site for more than 180 days.

A "substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50%* of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage" regardless of the actual repair work performed. The term does not include improvements of structures to correct existing violations of state or local health, sanitary, or safety code requirements or any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic Structure." ** Some communities are more restrictive (i.e. 40%)*

If the project includes a new building or a substantial improvement to a building, proceed to Step 6.

If the project does not include a new building or a substantial improvement made to an existing building, go on to Step 8.

STEP 6

Determine the base flood elevation (BFE) for the site. If your community has BFE information for the site in the profiles found in the FIS for the stream involved you should determine the BFE for the proposed site from this source. Should you find this task difficult, or require assistance, a BFE can be requested for the site through the FARA process using either the FARA request form by mail or by using INFIP and requesting an e-FARA.

If the applicant in Step 4 previously obtained a FARA from IDNR, use the BFE information provided by IDNR.

If the BFE information is not available from the FIS profile or FIRM and not previously obtained from IDNR, have the applicant request the BFE for the site from the IDNR Division of Water.

IDNR Division of Water can only provide floodplain information for sites with upstream drainage areas greater than one square mile. For sites with upstream drainage areas that are less than one square mile, you must require the applicant to provide a hydraulic analysis which includes the BFE for the site. If it is uncertain whether the drainage area is greater than one square mile, you can request a drainage area determination from IDNR.

Proceed to Step 7

STEP 7

If the development is the placement of a new building having a floor area greater than 400 square feet*, or a substantial improvement, the building protection requirements of your floodplain ordinance must be met. Review the construction plans to make sure the building will be protected to the FPG, which is two feet above the base flood elevation. Protecting buildings to the FPG can be achieved by one of three methods:

- a. **Elevating on fill:** Check the plans to ensure that the top of the fill is at or above the FPG and meets all other requirements of Local, State, and Federal standards. Ensure that fill extends 5-10 feet beyond the foundation of the building (in accordance with your local floodplain ordinance) before sloping below the FPG. The slopes should be no steeper than 3 horizontal to 1 vertical when using vegetative cover
- b. **Elevating on posts piers, columns, an enclosure below the elevated structure, or other types of similar foundation:** Check the plans to ensure that
 - the structure will be properly anchored to resist collapse or flotation;
 - materials used below the lowest floor are resistant to flood damage;
 - all electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters are located at or above the flood protection grade.
 - all water and sewer pipes, electrical and telephone lines located below the flood protection grade are waterproof; and,
 - if an enclosure is used, there must be permanent openings the bottom of which are no higher than one foot above adjacent grade (openings of at least 1 square inch for every square foot of enclosed area subject to flooding).

- c. **Floodproofing: *This is only an option for non-residential buildings.*** A registered professional engineer must certify that the building has been designed so that below the flood protection grade, the structure and attendant utility facilities are watertight and capable of resisting the effects of the regulatory flood. The registered professional engineer must sign and certify a floodproofing certificate.

*Some communities may be more restrictive

Proceed to Step 8.

STEP 8

Once you are assured that the proposed project satisfies all of the applicable Local, State, and Federal regulations pertaining to development/construction, a permit may be issued. Be sure to maintain all appropriate documentation in the applicant's permit file for your records.

Proceed to Step 9.

STEP 9

Perform a site inspection to ensure that the project is proceeding in accordance with the permitted plans. For new or substantially improved structures/buildings, obtain documentation of the as-built lowest floor elevations. It is strongly suggested that this documentation be placed on an approved NFIP Elevation Certificate or Floodproofing Certificate (non-residential).

Proceed to Step 10.

STEP 10

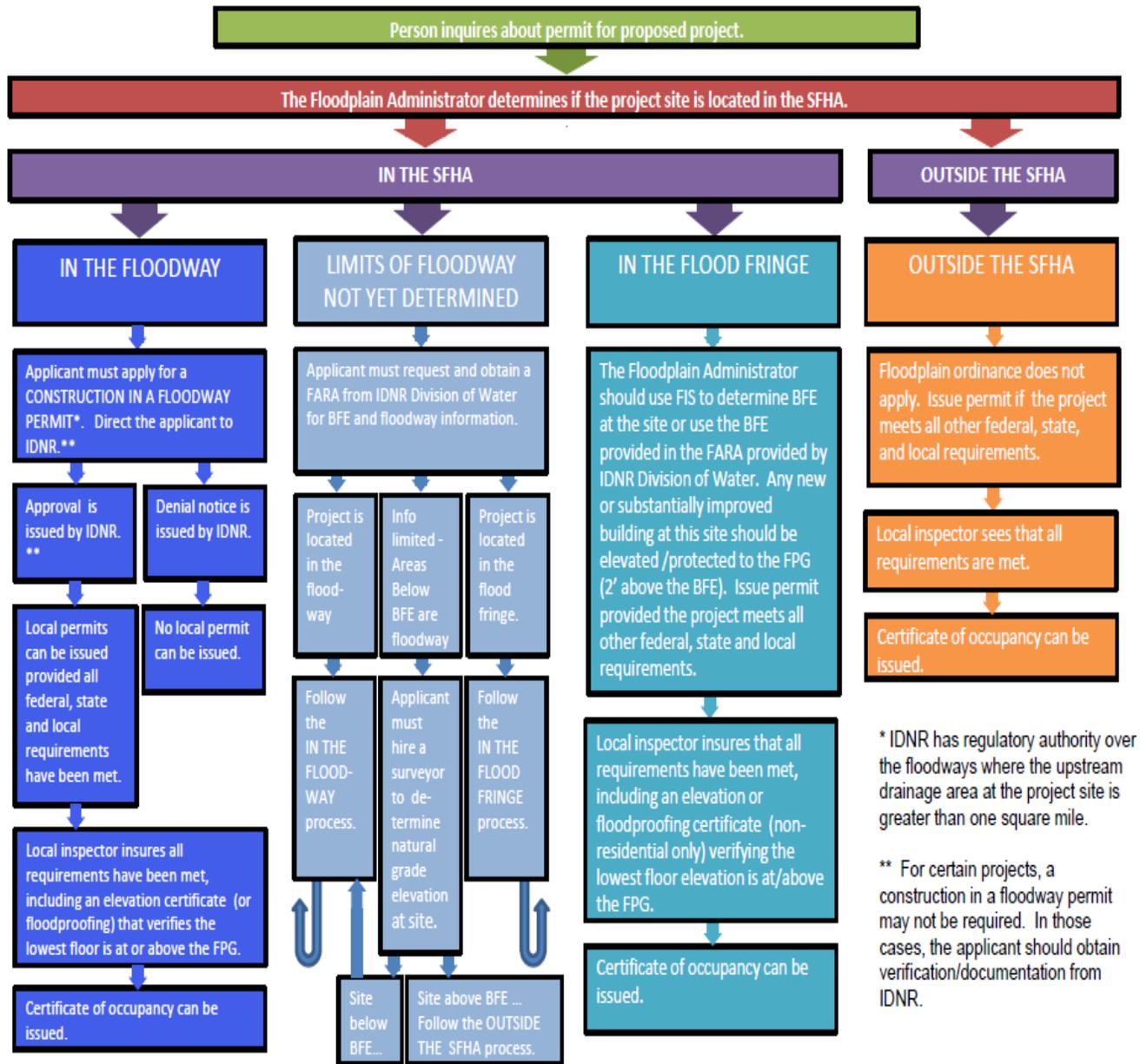
If it is your community's practice to issue occupancy certificates, one may be issued once all Federal, State, and Local requirements have been met.

Continue to Step 11

STEP 11

Maintain a permanent record of all permit files (including any FARAs, e-FARAs, associated maps, and elevation certifications), both issued and denied.

VI. PERMIT PROCEDURE FLOWCHART



VII. NFIP MAPS AND STUDIES

Floodplain data is furnished to participating NFIP communities by the Federal Emergency Management Agency (FEMA) to serve as the basis for local administration and enforcement of the program.

In order to effectively administer the NFIP's floodplain management standards, the local officials need information on the location and characteristics of the floodplain in their communities. Specifically, local officials need to know:

Where flood hazard areas have been designated;

Whether there are floodways designated;

What the projected base flood elevation (BFE) is at various points in the community; and

How to locate development sites relative to designated flood hazard areas in order to determine flood zone designations, establish which NFIP standards apply to projects, and determine the applicable flood protection elevation for projects.

The type and amount of data and degree of detail provided varies with the phase of the NFIP in which a community is enrolled. The principal informational documents provided are the Flood Hazard Boundary Map, Flood Insurance Study, Flood Insurance Rate Map, and the Flood Boundary Floodway Map.

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of the NFIP. The latest generation MSC serves as a streamlined product portal that provides both general and advanced user with intuitive, powerful and completely free of charge access to flood hazard products and tools. FIRMs, FIS, and other information are available on the MSC. It may be accessed and downloaded at no cost.

Flood Hazard Boundary Map

A Flood Hazard Boundary Map (FHBM) is provided by FEMA to a community when the community first joins the Emergency Phase (initial phase) of the NFIP. It provides a preliminary delineation of the one-percent annual chance (100-year) floodplain in the community, but does not provide specific data on floodwater depths, risk factors, or floodways. The one-percent annual chance (100-year) floodplain is illustrated as a shaded area on the maps of the community. **See *Figure VII-1***

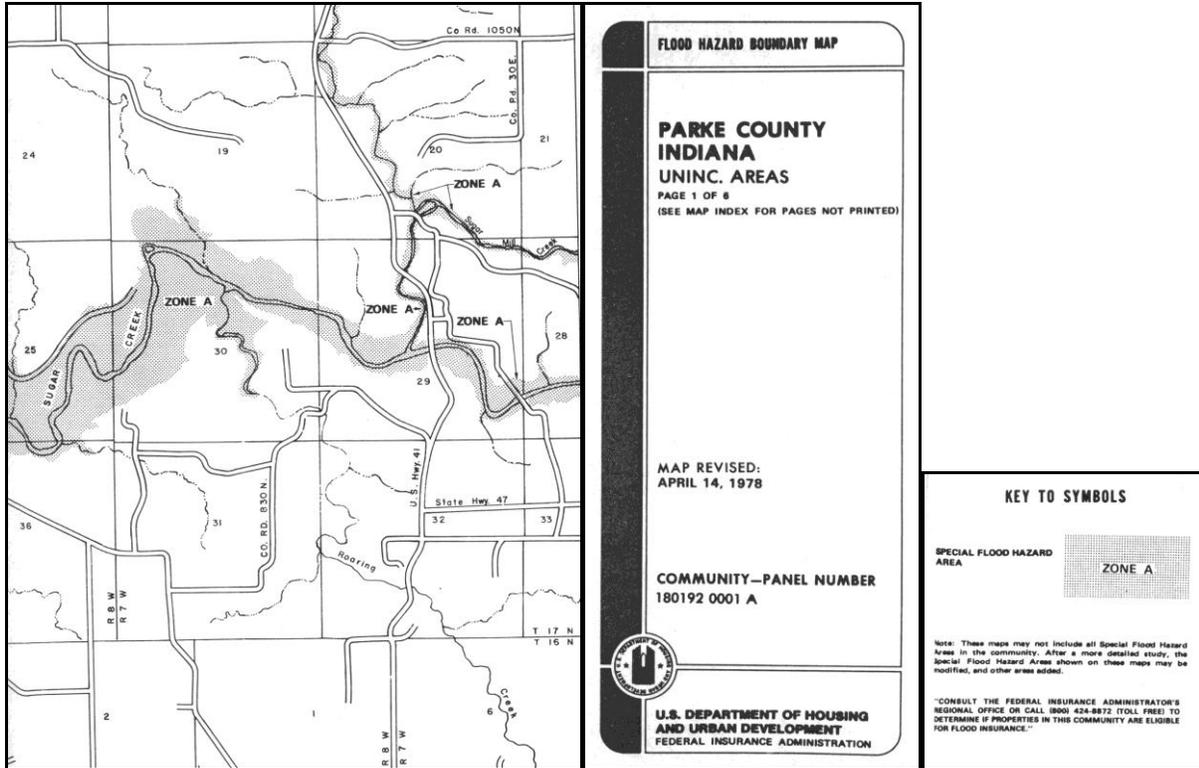


Figure VII-1 Flood Hazard Boundary Map

Flood Insurance Study

A Flood Insurance Study (FIS) is a published report by FEMA which examines, evaluates and determines flood hazards for a participating NFIP community. It forms the basis for development of the Flood Insurance Rate Map and Flood Boundary Floodway Map, which are used in the administration of the NFIP's land management and construction standards during the Regular Phase of the program.

In addition to describing the study methodology and providing background on the community's flooding history, the FIS contains flood profiles used to calculate water surface elevations for various flooding conditions, including the base flood elevation or one-percent annual chance (100-year) flood. Data on the width, base flood elevation, and cross-sectional area of floodways are also given in the FIS for each stream segment studied in detail. **See Figure VII-2**

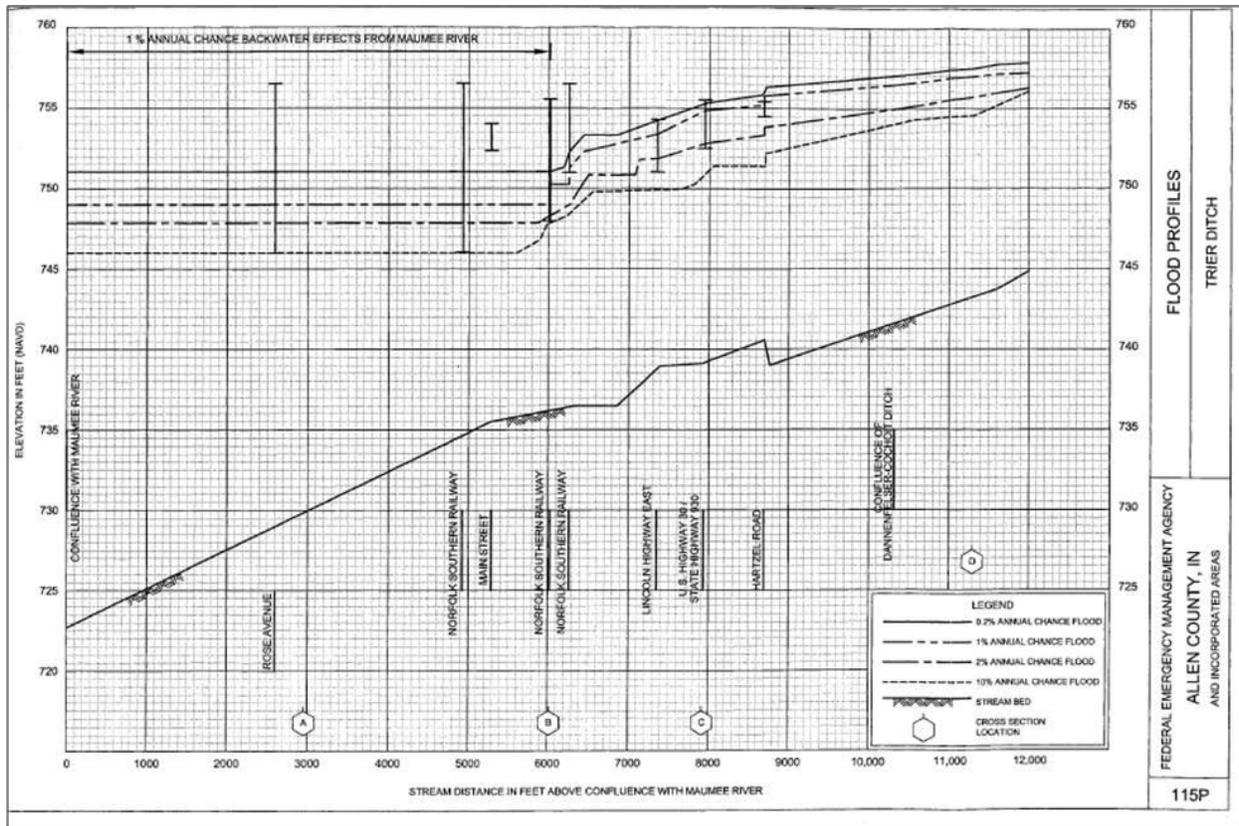


Figure VII-2 Flood Profile

Flood Insurance Studies are developed and published following a standard procedure. After a community is identified as flood-prone and the community joins the NFIP, FEMA contracts for an FIS of the community. FEMA, its contractor, and staff from the State Coordinating Agency (IDNR Division of Water) meet with local officials to determine areas of the community which are developed or are expected to be developed in the future. These areas are examined in detail by the study contractor using hydrologic and hydraulic modeling. Parts of the community judged likely to remain undeveloped are studied by less costly approximate methods. When the contractor completes a preliminary draft of the study, a second community meeting is held to review the results. IDNR Division of Water also reviews the draft study. The preliminary maps are transformed into the NFIP's standard mapping format. Review drafts of the FIS and its accompanying map(s) are produced, which following further public review and revision, are finalized, accepted by the community, and published by FEMA.

Flood Insurance Rate Map

Following completion of the Flood Insurance Study, a Flood Insurance Rate Map (FIRM) is issued, superseding the Flood Hazard Boundary Map, and signaling the community's entry into the Regular Phase of the NFIP. **See Figure VII-3**

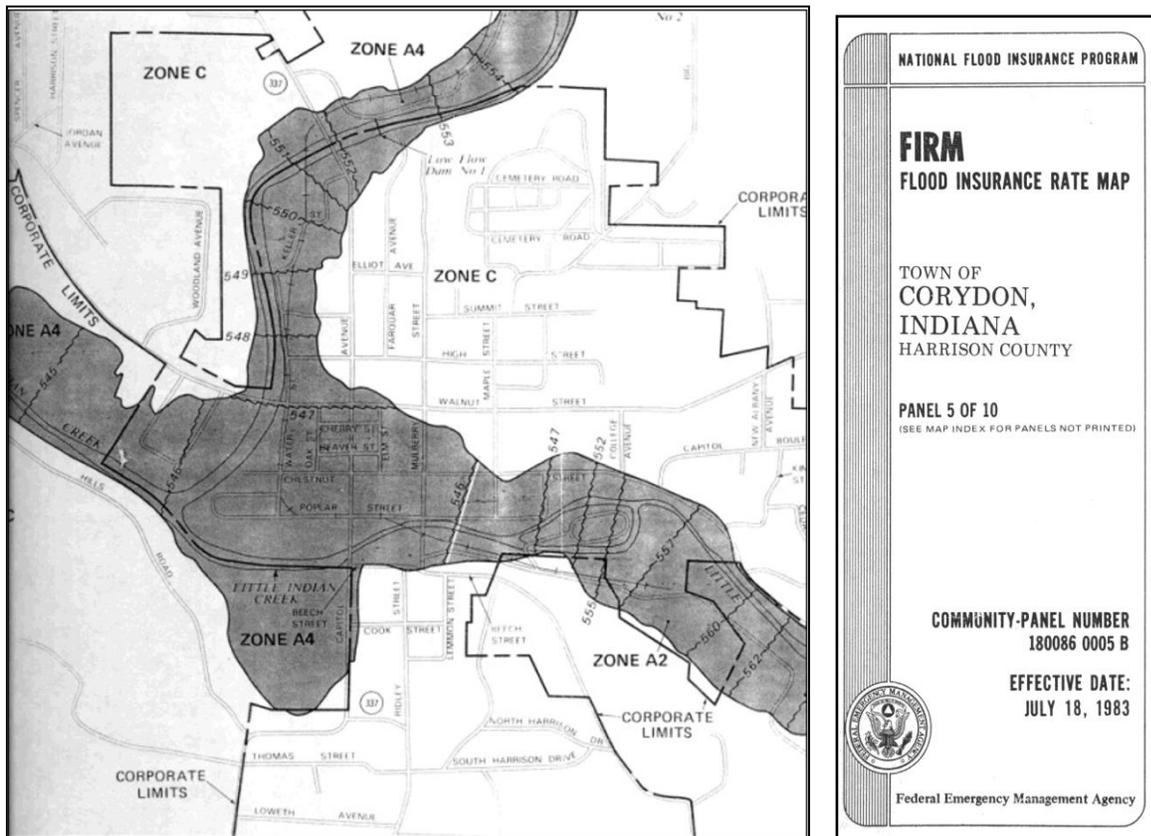


Figure VII-3 Flood Insurance Rate Map (pre-1986)

FIRMs are used by citizens, community officials, insurance agents, lenders, Federal agencies, and State agencies to determine the nature and extent of flood hazards in various portions of the community. They provide data needed to identify areas subject to flooding, determine the base flood elevation and flood risks of specific properties, and locate reference marks needed to establish the elevation of specific sites.

FIRMs generally offer far superior floodplain data content and accuracy compared to FHBMs. Under FEMA's Special Conversion Program, however, the FHBMs of some rural communities having relatively low flood risk are converted into FIRMs *without* a detailed Flood Insurance Study. Although having the official stature of a FIRM, these are the same FHBMs with only the effective date revised to reflect the date of conversion.

Most FIRMs are printed in a "Z-fold" (road map style) with each sheet or panel covering a portion of the community. Small communities may have only one panel, or may be combined with neighboring communities on a county-wide FIRM. A map index sheet is provided for all FIRMs consisting of more than one panel. All FIRMs provide basic orientation and location data including cultural features such as the corporate boundaries of the community, roads and streets (more detail may be provided in flood hazard areas), railroads, and water bodies. FIRMs also list and locate a series of ground elevation reference points or "bench" marks in flood

hazard areas. These are included to assist developers and local administrators in assuring that floodplain construction conforms to the NFIP elevation requirements.

The most significant data provided on FIRMs are the calculated base (one-percent annual chance/100-year) flood elevations, which are given for all areas studied in detail. Flood elevation data are denoted by wavy lines crossing the floodplain (generally perpendicular to the stream) at periodic intervals. The base flood elevation is given at each line, expressed in feet above mean sea level (rounded to the nearest foot).

FIRMs published since 1986 also include floodway delineation and cross-section data. Designated floodways are shown as hatched areas within the boundaries of the A-Zones of riverine floodplains on these newer FIRMs. **See Figure VII-4**

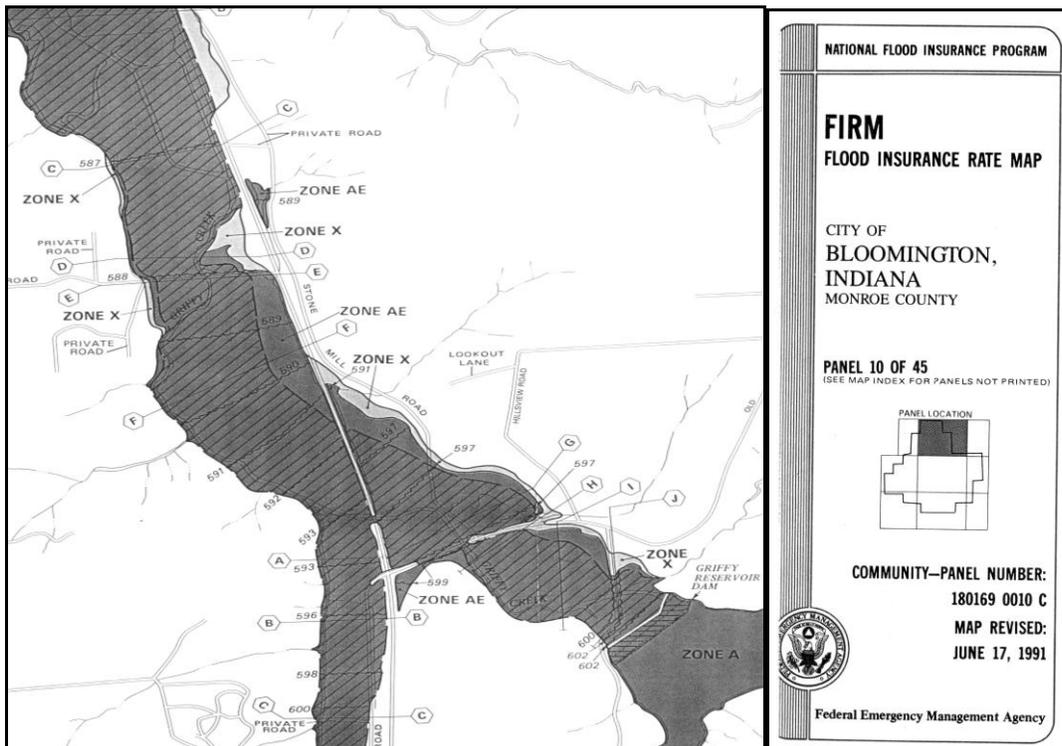


Figure VII-4 Flood Insurance Rate Map (1986 and after)

Flood Insurance Rate Map Zones:

A1-30 ZONES Areas of one-percent annual chance (100-year) flood, base flood elevations determined (pre-1987 maps).

AE ZONES Areas of one-percent annual chance (100-year) flood, base flood elevations determined (post-1986 maps).

A ZONES Areas of one-percent annual chance (100-year) flood, base flood elevations NOT determined.

AO ZONES Areas of one-percent annual chance (100-year) shallow flooding between 1 and 3 feet depth, average depths determined.

AH ZONES Areas of one-percent annual chance (100-year) shallow flooding (generally ponding), base flood elevations determined.

A99 ZONES Areas of one-percent annual chance (100-year) flood to be protected by construction of Federal flood protection system, base flood elevations NOT determined.

B ZONES Areas of 0.2 percent annual chance flood (500-year) flood hazard areas (pre-1987 maps).

C ZONES Areas of minimal flood hazards (pre-1987 maps).

X ZONES (dark shaded) Areas of the 0.2 percent annual chance (500-year) flood; areas of one-percent annual chance (100-year) flood with depths of less than 1 foot or less than one square mile drainage area, or areas of one-percent annual chance (100-year flood) protected by levees (post-1986 maps).

X ZONES (no shading) Areas determined to be outside 500-year floodplain (post-1986 maps)

D ZONES Areas in which flood hazards are undetermined.

Flood Boundary Floodway Map

Flood Boundary and Floodway Maps (FBFM) delineate the boundaries of designated floodways. Similar in appearance to the FIRMs, FBFBMs differ by including designated floodways as white areas within the dark shaded one-percent annual chance (100-year) flood hazard areas. **See Figure VII-5** FBFBMs also indicate the locations and designations of stream cross-sections, or points along a river or stream course for which detailed data on the dimensions and flood characteristics of the floodway are provided in the FIS Floodway Data Table. **See Figure VII-6**

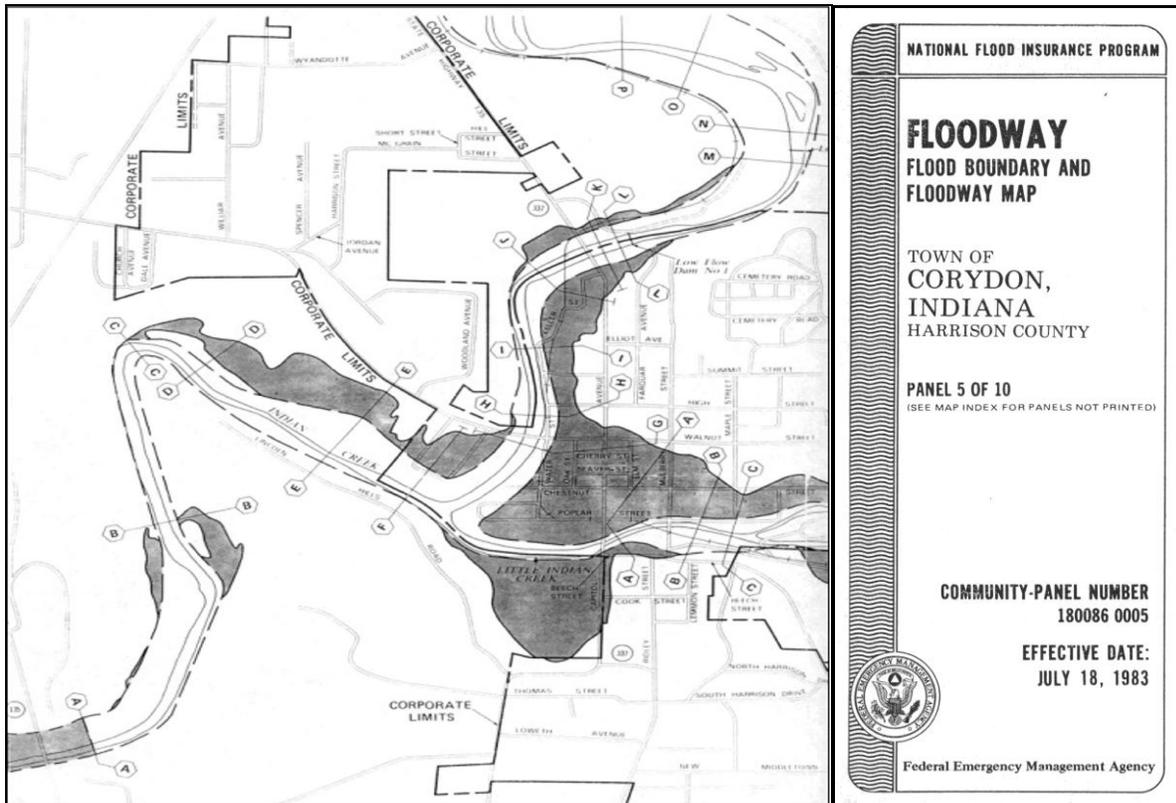


Figure VII-5 Flood Boundary Floodway Map

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (NOVD)	WITHOUT FLOODWAY (NOVD)	WITH FLOODWAY (NOVD)	INCREASE (FEET)
INDIAN CREEK								
A	22.57	432	5900	5.4	537.3	537.3	537.3	0.0
B	23.18	272	3856	8.8	538.7	538.7	538.7	0.0
C	23.63	266	3912	7.8	542.2	542.2	542.2	0.0
D	23.76	238	3846	8.8	542.9	542.9	542.9	0.0
E	24.08	701	7460	4.1	545.2	545.2	545.2	0.0
F	24.26	430	4749	6.4	545.6	545.6	545.6	0.0
G	24.54	413	3892	7.5	547.0	547.0	547.0	0.0
H	24.80	430	3824	6.9	547.8	547.8	547.8	0.0
I	24.76	242	3040	8.1	548.9	548.9	548.9	0.0
J	24.94	394	4521	6.0	550.8	550.8	550.8	0.0
K	25.04	482	5543	4.8	552.1	552.1	552.1	0.0
L	25.07	462	5079	4.7	552.4	552.4	552.4	0.0
M	25.51	682	5082	4.7	555.3	555.3	555.3	0.0
N	25.58	762	7279	3.7	557.6	557.6	557.6	0.0
O	25.88	1017	11,335	2.3	558.2	558.2	558.2	0.0
P	26.02	726	7079	3.8	558.2	558.2	558.2	0.0
Q	26.29	1121	11,363	2.4	558.9	558.9	558.9	0.0
R	26.45	1153	7953	3.4	559.1	559.1	559.1	0.0
S	26.68	840	4208	6.4	559.6	559.6	559.6	0.0
T	27.34	645	4797	5.6	565.8	565.8	565.8	0.0
U	27.60	150	1393	13.6	568.6	568.6	568.6	0.0
V	28.73	263	2922	9.2	578.5	578.5	578.5	0.0

¹MILES ABOVE MOUTH

TABLE 2	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	TOWN OF CORYDON, IN (HARRISON CO.)	INDIAN CREEK

Figure VII-6 Floodway Data Table

FBFMs were published as separate documents until 1986, and many remain in effect. Since 1986, the floodway delineation and cross-section data have been incorporated into the FIRM, and a separate FBFM is no longer published.

Digital Flood Insurance Rate Map

Since the 1970's, FEMA has been creating, storing, and updating flood hazard maps for communities across the United States. Over the same time period, there has been a computer revolution — from mainframes to PCs to local area networks to the Internet. Advancements in hardware and software have enabled a mapping revolution – from manual cartography to computer-aided design to Geographic Information Systems to real time high-resolution digital satellite imagery.

Through their Map Modernization Program and RiskMAP, FEMA has taken advantage of technology to automate various products, especially in the development of future mapping products. FEMA has developed base map specifications for its new Digital Flood Insurance Rate Map (DFIRM) products. The new DFIRMs allow for more efficient map updates, production and distribution. In this way, the DFIRM is a vast improvement over traditional FIRMs, which were produced using manual cartographic methods and were distributed only through paper copies. The new digital computer technology used for DFIRMs allow for cost efficient, rapid conversion of the entire mapping inventory to a digital format.

The new DFIRM is being prepared for communities for which new engineering analyses are required, as well as those communities with adequate existing flood data that only need their maps to be converted to digital format. All Indiana communities are scheduled to have DFIRMs by mid-year 2016. **Figures VII-7 and 8**

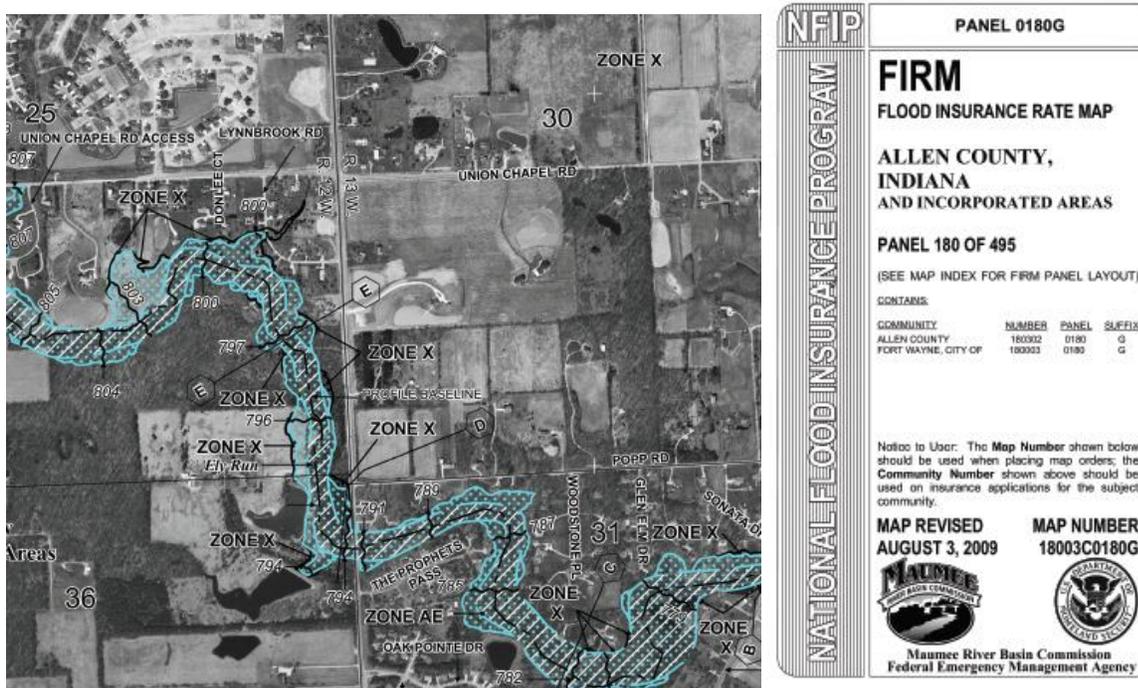


Figure VII-7 Digital Flood Insurance Rate Map

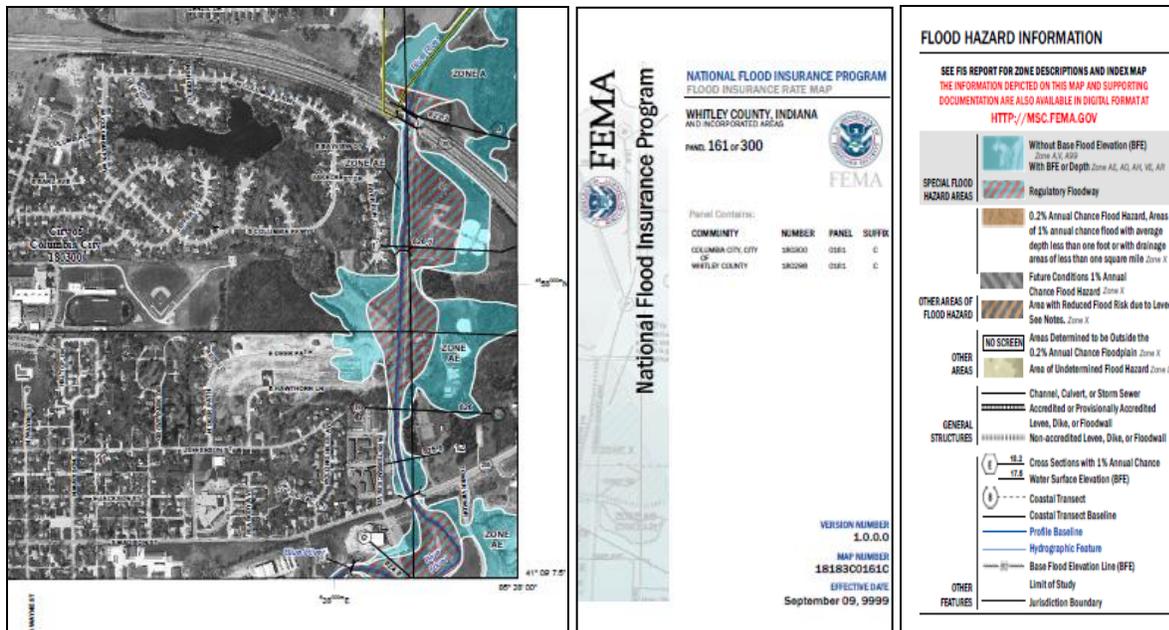


Figure VII-8 Digital Flood Insurance Rate Map (introduced in 2014)

VIII. LETTERS OF MAP CHANGE

A. Why so many mapping problems?

Flood Insurance Rate Maps (FIRMS) typically utilize the best available approved topographic data at the time of map production and any approved detailed studies at the time of map production. Older maps used the USGS 7.5 Minute Quads as base maps.

1. The scale of the FIRMs is often at 1":500' or 1":1000'.
2. The contour line of the base (one-percent annual chance) flood elevation (BFE) must be interpolated between the contours shown on available topographic data. Even with improved topographic data, there is an inherent margin of error resulting in small areas that may not have been accurately captured on the mapping.

B. Legal status of the FEMA maps.

The FIRMs and the Flood Hazard Boundary Maps (FHBM) portray the SFHA, within which the purchase of flood insurance is required as a condition for granting a mortgage from a federally backed or federally regulated lending institution. The lender must use the boundaries of the SFHAs shown on the FEMA maps to determine if mandatory flood insurance applies. Thus, even though an elevation survey may indicate that a home site is above the BFE and is

technically outside the floodplain, if the home site is within the SFHA (Zones A, AE, A1-30, AH, AR, A99, or AO) on the map, flood insurance must be required.

C. How does FEMA correct the maps?

So, how does FEMA amend/revise their maps to reflect better survey or topographic information, new flood studies, channel improvements, drainage programs, or new land developments? They do it through the various type of Letter of Map Change (LOMC) processes. Letters are issued by FEMA formally removing lots or portions of lots, by legal description, from the SFHA or changing the boundaries of the SFHA. One type, Letter of Map Revision (LOMRs) are accompanied by “annotated map panels”, a small photocopy of a portion of the FIRM showing the revised SFHA boundaries. All are dated and sent to the applicant. Copies are also filed with the IDNR and the municipality or county within which the property is located.

D. Letter of Map Amendment (LOMA):

This type of LOMC is used to revise the SFHA boundary based on detailed elevation surveying and/or topographic mapping of **natural conditions**. If the natural ground elevation of a site is **above** the BFE, FEMA can **amend** the map to remove the property from the SFHA. Thus the mandatory flood insurance purchase is lifted. However, the lender always has the option of requiring flood insurance. For example, a home site might be just a few inches above the BFE, so the lender feels that there is still a threat of flood damage to their “secured property”. On the plus side, once the flood zone has been changed to B, C, or X, the building qualifies for a *PREFERRED RISK POLICY*, the least expensive flood insurance available.

E. Letter of Map Revision, based on fill (LOMR-F):

When fill dirt is placed on property to raise the building site above the BFE, FEMA can remove the raised area from the boundaries of the SFHA, thus **revising** the FIRM. This is a man-made change to the floodplain. ***If the revision includes a change in the BFE or limits of the floodway, FEMA must obtain concurrence from IDNR.*** As with the LOMA, a LOMR-F lifts the mandatory flood insurance purchase. Again, however, the lender always has the option of requiring flood insurance.

F. Letter of Map Revision (LOMR):

This is used for new detailed flood studies, drainage improvements, channel alterations, etc., where the boundaries of the SFHA are altered. ***If the revision includes a change in the BFE or limits of the floodway, FEMA must obtain concurrence from IDNR.***

G. What is a “Conditional” LOMA or LOMR?

A “Conditional” LOMA or LOMR (CLOMA or CLOMR) is one that is approved tentatively, based on construction plans. “As-built” survey information must be submitted in order for approval to be finalized. Two separate letters are issued. The LOMA or LOMR is not legally valid until the as-builts are submitted and acknowledged by the second letter.

H. What is a PMR (Physical Map Revision)?

A PMR incorporates changes to floodplains, floodways, or flood elevations that result in the production and community adoption of one or more FIRM map panels with new effective dates and may require an updated FIS. These are usually based on a complete restudy of a series of streams in a community. These are reviewed by FEMA and IDNR.

I. Can only a portion of a parcel be removed?

Yes. If FEMA is provided with a legal description of the land area above the base flood elevation, they can issue a LOMA or LOMR for only a portion of the parcel. Or, the LOMA or LOMR may state that only the immediate building site is removed from the SFHA, but that portions of the property remain within the SFHA, subject to all floodplain management regulations.

J. How can someone apply for a LOMA or LOMR?

A completed application form should be submitted to FEMA. The application must be accompanied by supporting survey/elevation documentation. The following forms are available for these processes:

1. **MT-EZ.** Used by a property owner or lessee to request removal of a single structure or single parcel of land from a designated SFHA. (**LOMA**)
2. **MT-1.** Used by a property owner, lessee, or developer to remove a single structure, single parcel of land, or multiple lots from a designated SFHA. (**LOMA, CLOMA, LOMR-F, CLOMR-F**)
3. **MT-2.** Used by a property owner or person with legal authority to represent a group/firm/organization or other entity to request a revision of the current FEMA map to show changes to floodplains, floodways, or flood elevations. (**LOMR, PMR**)

K. How much does it cost?

A LOMA is *FREE* because it is based on natural conditions and **corrects** the FEMA map. However, fees are charged for LOMR-Fs and LOMRs because these are based on man-made changes. The fee is considered part of the cost of developing in a floodplain. For a current fee schedule, you can go to <http://www.fema.gov/mit/tsd> or you may contact FEMA by phone at **1-877-FEMA MAP**.

How to Obtain LOMA/LOMR Forms:

Forms can be downloaded from <http://www.fema.gov/mit/tsd> or call or write the Indiana

Department of Natural Resources
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204
(317) 232-4160
toll free 877-928-3755
FAX (317) 233-4579

IX. COMMUNITY RATING SYSTEM

The CRS is a component of the NFIP. Under the CRS, there is an incentive for communities to do more than just regulate construction of new buildings to minimum national standards. Under this voluntary program, flood insurance premiums are adjusted to reflect community activities that reduce flood damage to existing buildings, manage development in areas not mapped by the NFIP, protect new buildings beyond the minimum NFIP protection level, help insurance agents obtain flood data, and help people obtain flood insurance.

The objective of the CRS is to reward communities that are doing more than meeting the minimum NFIP requirements to help their citizens prevent or reduce flood losses. The CRS also provides an incentive for communities to initiate new flood protection activities. The goal of the CRS is to encourage, by the use of flood insurance premium adjustments, community and state activities beyond those required by the NFIP to:

- 1) Reduce flood losses by
 - a) protecting public health and safety
 - b) reducing damage to buildings and contents
 - c) preventing increases in flood damage from new construction
 - d) reducing the risk of erosion damage
 - e) protecting natural and beneficial floodplain functions
- 2) Facilitate accurate insurance rating
- 3) Promote the awareness of flood insurance

X. INDIANA MODEL ORDINANCE

The Model Ordinance for Flood Hazard Areas is provided to assist communities in developing an ordinance that will comply with the minimum participating criteria of the National Flood Insurance Program (NFIP). It is recommended that a Community's attorney(s) consider necessary additions and include all required information and delegations to the model. It is not intended that this model, if adopted, will serve all of a Community's needs as related to floodplain management, land use, or zoning. Any Community may adopt standards that are more restrictive than the minimum NFIP participating standards.

The current version of the model ordinance is posted on the IDNR Division of Water Web site, <http://www.in.gov/dnr/water/files/IndianaModelOrdinance.pdf> . Prior to adoption, communities should submit a draft of a proposed floodplain ordinance to the Floodplain Management Section of the IDNR Division of Water for review.

XI. HAZARD MITIGATION

Hazard Mitigation is any action taken to reduce or permanently eliminate the long-term risk to human life and property from natural hazards.

A. Hazard Mitigation Grant Program (HMGP)

The HMGP was created in November 1988 by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Act. The HMGP assists states and local communities in implementing long-term hazard mitigation measures following a major disaster declaration.

The program's objectives are:

- to implement state and local hazard mitigation plans;
- prevent future losses of lives and property due to disasters;
- provide funding for previously identified mitigation measures that benefit the disaster area; and
- to enable mitigation measures to be implemented during immediate recovery from a disaster.

State and Local governments, certain private non-profit organizations or institutions, and Indian tribes or authorized tribal organizations are eligible to participate in the program. The HMGP can be used to fund projects to protect either public or private property. Some examples of these projects are: structural hazard control, such as debris basins or floodwalls; retrofitting, such as floodproofing to protect structures from future damage; acquisition and relocation of structures from hazard prone areas; and development of state or local standards to protect new and substantially improved structures from disaster damage.

To be eligible for the HMGP funds, the anticipated benefits of a proposed mitigation project must exceed the total project cost. Funding is based on 15% of the Federal funds spent on public and individual assistance programs (minus administrative expenses) for each disaster.

FEMA can fund up to 75% of the eligible costs of each project. State or local match does not need to be cash. For example, in-kind services may be used.

Once a community applies for HMGP funding, the Indiana Department of Homeland Security (IDHS) notifies the IDNR of the potential project. IDNR conducts a community assistance visit to evaluate the community and determine NFIP compliance. The findings of the Community Assistance Visit are provided to IDHS to incorporate in the evaluation procedure. Proposed projects must meet certain minimum criteria. These criteria are designed to ensure that the most cost effective and appropriate projects are selected for funding. For further information contact IDHS at 317-232-3831.

B. Flood Mitigation Assistance (FMA)

FMA assists states and communities in planning and developing projects to reduce claims against the NFIP. Unlike the HMGP, this program is not dependent upon a major disaster declaration.

The main objective of the FMA is to provide technical assistance in the planning and project implementation process of the acquisition of flood-prone structures. The program is funded through an annual allotment based on each state's flood insurance policy foundation. Like the HMGP, this assistance is a 75/25 cost share program. This program is also administered by the IDHS. For further information, contact IDHS at 317-232-3831.

C. Pre-Disaster Mitigation (PDM)

The Pre-Disaster Mitigation (PDM) program provides funds for hazard mitigation planning and projects on an annual basis. The PDM program was set in place to reduce overall risk to people and structures, while at the same time, also reducing reliance on federal funding if an actual disaster were to occur. Like others, this is a cost-share program where FEMA will provide no more than the standard 75 percent of the total eligible costs. It is also a competitive grant program. For further information, contact IDHS at 317-232-3831.

XII. APPENDIX

A. GLOSSARY

A-Zone: See “Zone A”

Base Flood Elevation (BFE): The elevation of the crest of the base flood.

Base Flood: The flood having a one percent chance of being equaled or exceeded in any given year (often called the one-percent annual chance flood, 100-year flood, or Regulatory Flood).

Basement: Any fully enclosed area of a building below grade on all sides.

Best Available Data: The most recent hydraulic and hydrologic information to show what the one-percent annual flood elevations and floodplain boundaries are for a particular area. (Unless the drainage area of the site is less than a square mile, this data should be reviewed and approved by the IDNR.)

Building: A structure that is principally above ground and is enclosed by walls and a roof including manufactured homes and prefabricated buildings. The term also includes recreational vehicles and travel trailers to be installed on a site for more than 180 days.

Code of Federal Regulations (CFR): A master coding system to identify the federal agency regulations that have been published in the Federal Register. 44 CFR includes all the regulations published by the Federal Emergency Management Agency.

Community Rating System (CRS): A program of the Federal Insurance Administration where communities who regulate floodplain areas above and beyond minimum NFIP requirements are rewarded for their efforts through reduced flood insurance premiums for the citizens of that community.

Development: Any man-made change to the ground that may affect flood flows. Development includes construction of buildings, filling, channel changes, dredging, grading, excavating and storage of materials.

Elevation Certificate: A form supplied by the Federal Emergency Management Agency (FEMA) used to document pertinent elevation information such as the lowest floor of a structure and its lowest adjacent grade.

Federal Emergency Management Agency (FEMA): The federal government agency that administers the NFIP.

Federal Insurance Administration (FIA): A component of FEMA which administers the NFIP.

Flood Insurance Study (FIS): A booklet which provides detailed information on a community's flood hazard areas. The FIS normally includes topographic information, floodplain and floodway data charts, study information, and stream profiles.

Flood Fringe: Those portions of the floodplain lying outside of the floodway.

Flood Boundary Floodway Map (FBFM): A detailed map delineating floodway from flood fringe.

Flood Hazard Boundary Map (FHBM): A FEMA map based on approximate data and identities, in general, the SFHAs within the community.

Flood Insurance Rate Map (FIRM): A FEMA map published after a FIS is completed for a community showing areas within the one-percent annual chance flood boundary.

Floodplain: The channel proper and the areas adjoining any wetland, lake or watercourse which have been or hereafter may be covered by the regulatory flood. The floodplain includes both the floodway and flood fringe.

Floodproofing: Measures taken to protect a building from flood damage that is not elevated above the FPG.

Floodproofing consists of ensuring that the walls and floor are watertight and capable of withstanding hydrostatic pressures and hydrodynamic forces.

Floodway: The channel of a river or stream and those portions of the floodplains adjoining the channel which are reasonably required to efficiently carry and discharge the peak flood flow of the regulatory flood of any river or stream.

Flood Protection Grade (FPG): The elevation of the regulatory flood plus two feet at any given location in the SFHA.

Hydrodynamic Forces: The forces on a structure from currents, waves, debris, ice, etc.

Hydrostatic Pressure: The pressure standing water places on the walls and floor of a structure. Hydrostatic pressure of 3-4 feet of standing water can collapse walls or buckle basement floors.

Local Floodplain Administrator: The person responsible for administering and enforcing a community's floodplain ordinance. Depending on the local ordinance, this person could be the city engineer, zoning administrator, building inspector, mayor, clerk, or other official.

Letter of Map Change (LOMC) is a general term used to refer to the several types of revisions and amendments to FEMA maps that can be accomplished by letter. They include Letter of Map Amendment (LOMA), Letter of Map Revision (LOMR), and Letter of Map Revision based on Fill (LOMR-F). The definitions are presented below:

Letter of Map Amendment (LOMA) means an amendment by letter to the currently effective FEMA map that establishes that a property is not located in an SFHA through the submittal of property specific elevation data. A LOMA is only issued by FEMA.

Letter of Map Revision (LOMR) means an official revision to the currently effective FEMA map. It is issued by FEMA and changes flood zones, delineations, and elevations.

Letter of Map Revision Based on Fill (LOMR-F) means an official revision by letter to an effective NFIP map. A LOMR-F provides FEMA's determination concerning whether a structure or parcel has been elevated on fill above the BFE and excluded from the SFHA.

National Flood Insurance Program (NFIP): A federal program enabling property owners to purchase insurance protection against losses from flooding. Participation in the NFIP is voluntary and based on an agreement between local communities and the federal government which states that if a community will implement and enforce measures to reduce future flood risks to new construction in SFHAs, the federal government will make flood insurance available within the community as a financial protection against flood losses which do occur.

One-percent annual chance flood is the flood that has a one percent (1%) chance of being equaled or exceeded in any given year. Any flood zone that begins with the letter A is subject to the one-percent annual chance flood. See "Regulatory Flood".

Special Flood Hazard Area (SFHA): Those lands within the jurisdiction of the city, town, or county that are subject to inundation by the regulatory flood.

Substantial Repair/Improvement: Repairs/improvements to a building whereby the cost of the repair/improvement equals or exceeds 50% of the market value of the building before the repair/improvement took place.

Zone A: The one-percent annual chance floodplain as shown on NFIP maps. There are seven types of A Zones:

- **A** Floodplain where no base flood elevation data is provided.
- **AE** Floodplain base flood elevations are provided.
- **A1-A30** Riverine SFHA where a Flood insurance Study provided base flood elevations.
- **AO** Floodplain with sheet flow or shallow flooding, base flood depths are provided.
- **AH** Floodplain characterized by shallow ponding, base flood depths are provided.
- **A99** Floodplain area which will ultimately be protected upon completion of an under construction federal flood protection system
- **AR** Areas that result from the decertification of a previously accredited flood protection system that is determined to be in the process of being restored to provide base flood protection. Mandatory flood insurance purchases requirements apply.

Zone B: The area depicted on Flood Insurance Rate Maps as between the limits of the one-percent annual chance and 0.2 percent annual chance flood zones.

Zone C: Areas of minimal flooding located outside of both the one-percent annual change and 0.2 percent annual chance flood zones.

Zone D: Unstudied areas where flood hazard are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Zone X: Areas determined on newer floodplain maps to be outside the one-percent annual chance flood zone (used instead of B and C zones on newer FEMA maps).

B. FORMS

1. SAMPLE APPLICATION FOR IMPROVEMENT LOCATION PERMIT (FLOODPLAIN PERMIT)

_____, INDIANA

Application for Improvement Location Permit

Application No.: _____ Date Filed: _____

Applicant: _____

Address: _____ Phone: _____

Owner: _____

Address: _____ Phone: _____

Location of Improvement or Construction Activity: _____

Other Description: _____

Is proposed "development" considered to be:

New construction

Substantial modifications

Other (provide description) _____

Present Use of Property:

Residential () Commercial () Industrial () Recreational ()

Property located in Zone _____ on FIRM dated _____

Location of proposed "development" is within:

Floodplain Limits of Floodway/Fringe not yet determined () Floodway Fringe () Floodway

Applicant must notify Department of Natural Resources in writing along with site plans for approval if located in floodway or undetermined floodplain areas:

Indiana Department of Natural Resources

Division of Water

402 W. Washington Street Rm. W264

Indianapolis, IN 46204

Attach a copy of IDNR permit or floodplain analysis and regulatory assessment (FARA or e-FARA).

Base Flood Elevation at the "development" site: _____ NAVD

Flood Protection Grade (FPG) at the site is: _____ NAVD

(FPG = base flood elevation + two feet)

If the “development” is residential, the lowest floor (including the basement) shall be constructed at an elevation of at least the Flood Protection Grade calculated.

If non-residential, the structure may be floodproofed as defined in the definition for “floodproofed structure”

Improvement Location Permit No. _____ Date _____

Denied _____ Date _____

Reason for denying permit: _____

Fees to accompany this application: \$_____

=====
I hereby certify that the application and accompanying site plan/floor plan are correct, and that any structure will not be used or occupied in any manner until a Certificate of Occupancy has been issued.

Applicant Signature Date _____

=====

Approved by: _____

_____ (Title of Official)

_____, Indiana (Name of Community)

=====

ADDITIONAL DOCUMENTATION REQUIRED

- 1. Copy of IDNR permit or floodplain analysis and regulatory assessment (FARA or e-FARA) if utilized to determine regulatory flood elevation and floodway boundary.
- 2. IDNR permit if construction activity is in floodway.
- 3. Once the lowest floor slab is installed, completed elevation certificate for all structures or completed floodproofing certificate, if utilized on non-residential buildings.

2. SAMPLE CERTIFICATE OF OCCUPANCY

_____, INDIANA

Certificate of Occupancy

Improvement (Floodplain) Location Permit No. _____

Certificate of Occupancy No. _____ Issued: _____, 19_____

Issued to: _____

This certifies that the action of work for which an Improvement Location Permit was issued for the premises identified as:

Address: _____

Other description as follows: _____

has been inspected and found to be in compliance with the applicable laws of the State of Indiana and the _____,
(Community's floodplain ordinance)

_____ (Title of Official)

_____, Indiana (Name of Community)

3. FEMA ELEVATION CERTIFICATE

The current link to the form:

http://www.fema.gov/media-library-data/20130726-1437-20490-3457/f_053_elevationcertificate_jan13.pdf

Please check on-line at [fema.gov](http://www.fema.gov) to ensure that you are using the most up-to-date form.

4. FEMA FLOODPROOFING CERTIFICATE

The current link to the form:

http://www.fema.gov/media-library-data/1406304445858-0888f8ef5a3bd55ff1815962caa9a12c/F-056_Floodproofing_NonRes_Jul12.

Please check on-line at [fema.gov](http://www.fema.gov) to ensure that you are using the most up-to-date form.

5. FEMA MT-EZ FORM

**The following is the form in effect at the time of this publication. The current link to the form:
<http://www.fema.gov/media-library/assets/documents/8001?id=2328>**

Please check on-line at fema.gov to ensure that you are using the most up-to-date form.

6. Sample Model Floodplain Variance and Appeals Record for Indiana

Model Floodplain Variance and Appeal Record for Indiana

A variance is a grant of relief given by a community from the terms of specific standards required in its floodplain regulations. The issuance of a variance is for floodplain management purposes only. Insurance premium rates are determined by the federal government according to actuarial risk and will not be modified by the granting of a variance. **ANY VARIANCE GRANTED BY A COMMUNITY MUST BE CONSISTENT WITH THE NFIP GUIDELINES AND WITH STATE AND LOCAL LAW.**

Name of Applicant: _____

Property Address: _____

Type of structure and intended use: _____

1. Floodplain Status (check which one applies)

Floodway _____

(Note: no variances for the construction of new residences in the floodway are allowed that are not in accordance with IC 14-28-1)

Floodway Fringe _____

The variance applicant must meet all criteria under Ordinance (Resolution) No. _____, IC 14-28-1, §60.6(a) of the Code of Federal Regulations (CFR), and in accordance with §60.3(d)(3) CFR, demonstrate that no increase in flood stages will result. If the applicant cannot meet all of the aforementioned codes and regulations, then do not grant the variance.

2. Has the applicant shown that there exists a good and sufficient cause for the requested variance?

Yes* _____ *(continue on to next question)*

No _____ *(variance should not be granted)*

*A variance request by an applicant that is based on good and sufficient cause is one that solely deals with the physical characteristics of the property, subdivision lot, or land parcel under question. For further explanation, please refer to FEMA's Variance Guidelines handbook.

Please state what the good and sufficient cause is: _____

3. Has the applicant shown that the strict application of the terms of Ordinance (Resolution) No. _____ will constitute an exceptional hardship?

Yes* _____ (continue on to next question)

No _____ (variance should not be granted)

*The hardship that would result from failure to grant a requested variance must be exceptional, unusual, and peculiar to the property involved. Economic or financial hardship, inconvenience, aesthetic considerations, physical handicaps, personal preferences, the disapproval of one's neighbors, or homeowners association restrictions likewise cannot, as a rule, qualify as exceptional hardship. For further explanation, please refer to Variance Guidelines.

Please state what the exceptional hardship is: _____

4. Has the applicant shown that the approval of the requested variance will not increase flood heights, create additional threats to public safety, cause additional public expense, create nuisances, cause fraud or victimization of the public or conflict with existing laws or ordinances?

Yes _____

No _____ (variance should not be granted)

*Please refer to the Variance Guidelines before answering this question.

Please state why the approval of the variance would not cause the occurrence of the aforementioned items in question #4: _____

If the proposed construction meets the requirements of question #1, and questions #2, #3, and #4 were all answered "yes", then the body of government responsible for granting appeals may issue a variance to the terms and provisions of Ordinance (Resolution) No. _____ subject to the following standards and conditions:

(Please refer to [Variance Guidelines](#) for assistance in meeting the following standards and conditions.):

1. *If the requested variance is an exception to the flood protection elevation requirements, the lot should be one-half acre or less in size and contiguous to and surrounded by lots with existing structures constructed below the flood protection elevation.*

(Reminder: If the lot is greater than one-half acre in size, applicant must submit technical justification. Please attach justification.)

2. *If the requested variance or exception is for the construction of a structure listed on the National Register of Historic Places or the State Historic Register, please attach a letter or appropriate documentation from either agency that shows that the structure is a historic building.*

3. *Variances are issued only to give the minimum relief necessary. Please describe what the applicant is required to do in order to provide the maximum practical flood protection. (i.e., raise all utilities to or above the base flood elevation, use flood resistant materials, and use watertight sealant)* _____

4. *The appointed body of government needs to issue a written notice to the petitioner of the variance or exception that the proposed construction will be subject to increased risks to life and property and could require payment of excessive flood premiums (Up to \$25 per \$100 for structural coverage). Please attach a copy of this notice.*

AN APPLICANT RECEIVING A VARIANCE TO BUILD A STRUCTURE WITH THE LOWEST FLOOR ELEVATION BELOW THE BASE FLOOD ELEVATION (One-percent Annual Chance/100-YEAR) IS HEREBY NOTIFIED THAT THE REDUCED FLOOR ELEVATION WILL RESULT IN INCREASED PREMIUM RATES FOR FLOOD INSURANCE UP TO AMOUNTS AS HIGH AS \$25 PER \$100 OF INSURANCE COVERAGE. CONSTRUCTION BELOW THE BASE FLOOD LEVEL INCREASES RISKS TO LIFE AND PROPERTY.

Applicant's Signature Date Administrator's Signature Date

RECORD OF VARIANCE ACTIONS

Variance request submitted to _____ on _____ (date) _____

In accordance with the criteria and guidelines of the floodplain regulations in Ordinance (Resolution) No. _____ the _____ (appeal board) _____ (community name) hereby approves [], denies [] the above request for variance.

By: _____ (Signature) _____, _____ Title _____

Date: _____

Decisions (vote) of the board: _____

Special provisions of Variance Approval: _____

Note: As provided in _____, those aggrieved by the decision of the appeal board may appeal such decisions to the _____.

7. FEMA Variance Guidelines Handbook

The Federal Emergency Management Agency

VARIANCE GUIDELINES

March 1998

INTRODUCTION

The Federal Emergency Management Agency (FEMA) does not set forth absolute criteria for granting variances from the floodplain management provisions of Title 44 CFR, § 60.3, § 60.4, and § 60.5. However, general variance criteria have been established in the NFIP regulations under § 60.6 (a). These criteria provide the basis for each community participating in the NFIP to determine if a structure qualifies for a variance from the local floodplain management regulations. The variance criteria are a compilation of standards most frequently found in State variance law, coupled with specific floodplain management standards.

In all cases, the responsibility to approve or disapprove a variance rests on the community, not FEMA. However, FEMA evaluates variances granted by a community to determine if they are consistent with the objective of sound floodplain management. The variance criteria are intended to inform participating communities of the guidelines that FEMA will use in such an evaluation.

To ensure consistency with sound floodplain management, communities should issue variances only on finding of good and sufficient cause, exceptional hardship, and a determination that variance will not result in 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. In addition, a variance should be the minimum necessary, considering the flood hazard, to afford relief.

If the criteria at § 60.6 (a) are closely adhered to, variances that completely waive the substantive NFIP requirements which provide protection to the one-percent annual chance (100-year) standard should be quite rare. In most cases some lower level of protection or alternative methods to provide comparable protection will be available.

DESCRIPTION AND INTENT OF THE REGULATIONS COVERING VARIANCES

The NFIP criteria are based on the general principal of zoning law that variances pertain to a piece of property and are not personal in nature. Though standards vary among States, in general a properly issued variance is granted for a parcel of property with physical characteristics so unusual that complying with the ordinance would create an exceptional hardship to the applicant or the surrounding property owners. Those characteristics must be unique to that property and not be shared by adjacent parcels. The unique characteristics must pertain to the land itself, not to the structure, its inhabitants or the property owners. Therefore, financial hardship or the health condition of the property owner alone is never sufficient causes for granting a variance.

It is common practice for some administrative bodies to grant variances for zoning, property setback, and non-health and safety regulations based on personal criteria and the character of the owner rather than the nature of the property. However, granting a variance from NFIP floodplain management standards on these grounds would rarely be an appropriate action. Such action would not be consistent with the community's need to ensure public safety.

Once the character of the owner changes (i.e. the property is sold, leased, etc.) the justification for a variance based on personal considerations no longer exists. Because the structure remains, future owner/occupants are exposed to the nonconforming nature of the property and whatever hazards and public safety problems are associated with it. This exposure to flood risk is unnecessary because the sole reason for granting the variance was for the personal condition of the previous owner.

The variance criteria in § 60.6 (a) must be read as a whole and not piecemeal. Variances can be granted for new construction and substantial improvements only if all criteria in § 60.6 (a) and the local ordinance are met. If any one of the criteria is not met, the variance should not be granted.

Floodways - §60.6 (a) (1)

The floodway is defined (§59.1) as:

“the channel of a river or other water course 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.”

It is important to reserve the floodway as a water conveyance area because any encroachments or obstructions place in the floodway will increase flood heights and consequently flood damages. Thus, at §60.6 (a) (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.”

The intent of this variance criterion is to prohibit non-conforming development that may increase flood levels, which in turn would increase potential flood damages to other property owners.

In most cases there will be alternative locations for the proposed development outside the floodway, or other actions can be taken to compensate for increased flood stages or the floodway can be modified through flood control measures. If there is no feasible or practical alternative site to locate the development and it must meet all criteria under § 60.6 (a) and, in accord with § 60.6 (d) (3), demonstrate that no increase in flood stages will result. Section 60.3 (d) (3) states that:

“ the community shall prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge.”

The only exceptions to this provision, located in §§ 60.3 (c) (13) and (d) (4) of the NFIP regulations, allow for the increases in flood levels under certain conditions and upon approval by the administrator.

In cases where all variance criteria in § 60.3 (a) are met and a “no-rise” analysis and certification has been approved, the community may find it appropriate to issue a variance. However, because of the potential hazards involved, many states and communities exceed minimum NFIP requirements by prohibiting the issuance of variances for floodway development altogether, regardless of whether all variance criteria are met and a “no-rise” certification was made. Therefore, a community may wish to prohibit all variance requests based on three potential flood hazards in the floodway:

1. The hazard to the development itself;
2. The increased hazard which the development may cause to other properties;
3. The risk to individuals stranded in isolated structures surrounded by what is in many cases rapidly flowing, debris-laden floodwaters, and the risk to the rescue workers.

For example, the granting of a variance, which allows the placement of a manufactured home below the BFE in a floodway, will place the lives of its inhabitants at risk because during a flood it is likely that the manufactured home will be totally demolished. Aside from this danger, experience has shown that a manufactured home can float into other manufactured or conventional homes and result in severe structural damage; or, become wedged in a bridge opening or culvert, which could in turn dramatically increase flood heights upstream and endanger other citizens. Also, local emergency service personnel may be endangered attempting to rescue the occupants before the manufactured home is carried downstream.

Because of the hazards of granting variances for development in the regulatory floodway, community officials should carefully consider all of the possible dangers created by the variance issuance. In most cases, a review will indicate that the benefits of allowing the development are outweighed by the costs of increased future flood damage and increased hazards to life.

Lots of One-Half Acre or Less - §§ 60.6 (a) and (a) (2)

“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.”

“Variances may be issued by a community for new construction and substantial improvement 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.”

A common, but unjustifiable argument for variance request on lots of less than ½ acre is one based on personal convenience or aesthetics; i.e., the height inconsistency that would result between adjacent structures if the middle one was elevated to or above the BFE. Aesthetics or other personal considerations should never be a consideration when making variance determinations on ½ acre lots. Section 60.6 (a) (2) only addresses the physical, not the aesthetic characteristics of a lot in relation in the adjacent lots. In balancing considerations for personal issues versus issues related to public health and safety such as minimum NFIP criteria, a community should always choose public safety and the protection of lives and property.

The intent of the above variance criteria has been misinterpreted to mean that variances can be systematically granted for all intermediate or “in-fill” lots of less than ½ acre. Variances on “in-fill” lots of less than ½ acre are not automatic. The intent of § 60.6 (a) (2) is not to place a lesser (or no) burden on ½ acre lots, but a greater burden on lots larger than ½ acre. Note that § 60.6 (a) specifically states that “as the lot size increases beyond ½ acre, the technical justification required for issuing a variances increases.”

The ½ acre threshold pertaining to lot size is meant to be a general cutoff point and, as § 60.6 (a) states, “deviations from that limitation may occur.” However, experience shows that for intermediate lots greater than ½ acre, a structure can, in nearly all instances, be elevated on fill to or above the BFE without causing measurable drainage impacts to the adjacent structures whose lowest floor elevations are at or below grade. Because of the additional storage and infiltration capacity provided by larger lots, and because of the flexibility in being able to choose a least-impactive location on a large lot, the technical justification required for issuing a variance based on potential drainage problems increases as the lot size increases beyond ½ acre. However, conditions will vary based on the size of the structure relative to the size of the lot, as well as the location of the structures relative to each other.

Many design and construction alternatives exist that will ease a hardship caused by potential drainage problems, while still allowing a structure in this situation to be built in full compliance with NFIP regulations. There are several acceptable elevation techniques that cause no more, and usually less disruption of drainage patterns than building a structure at ground level through a variance. Examples include: 1) elevation of the structure on pilings, columns, or extended foundation walls; 2) grading or landscaping the elevated fill pad to drain away from the adjoining properties; and 3) creation of natural or artificial infiltration fields or systems located at the intersection of the fill slope and the natural ground. Many of these type alternatives can be cost effective as well as visually appealing in the community, while still not creating drainage problems for adjacent structures.

In summary, the granting of variances for small lots where elevation on fill will pose an exceptional hardship due to drainage problems should be rare. Variances for “in-fill” lots of ½ acre or less should be granted on the basis of potential drainage problems only 1) if, as § 60.6 (a) (2) explicitly states, all other criteria [§§ 60.6 (a) (3), (4), (5), and (6)] are met, and 2) if a professional engineer or architect has prepared and certified data demonstrating that there are no technically feasible methods available to alleviate or mitigate the drainage problems.

Good and Sufficient Cause - § 60.6 (a) (3) (i)

“Variances shall only be issued by a community upon a showing of good and sufficient cause.”

A variance request by an applicant that is based on good and sufficient cause is one that deals solely with the physical characteristics of the property, subdivision lot, or land parcel under question. A rendering of a good and sufficient cause should never be based on the character of the planned construction or substantial improvement, the personal characteristics of the owner or inhabitants, or local provisions that regulate non-health and public safety standards (e.g., aesthetic restrictions of subdivision homeowner associations).

“Good and sufficient” cause means that by granting a variance there is substantial and legitimate benefit to be achieved by numerous other citizens, or the community as a whole. It is not merely based on the convenience or financial relief that the variance would afford the applicant. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, the disapproval of one’s neighbors, or homeowners’ association restrictions, likewise do not, as a rule, qualify as “good and sufficient” causes. “Good and sufficient” cause for a variance occurs when a parcel of property possesses physical characteristics so unusual that complying with NFIP regulation in a local ordinance would create an exceptional hardship to the applicant, the surrounding property owners, or the community in general. In addition, the unusual physical characteristics must be unique to that property and not be share by adjacent parcels or be typical of other lots in the community.

Physical conditions are inherent to the land or property and usually will not change or be significantly altered over time. Therefore, the justification for granting a variance based on physical characteristics will usually not be undermined over time. In contrast, personal

characteristics and intended uses of buildings can change dramatically with changes in ownership. Likewise, local aesthetic and other non-health and safety restrictions are frequently altered over short periods of time. Thus, the justification for granting variances based on characteristics other than the physical conditions of the property can be rapidly compromised.

Once the character of the owner changes (i.e. the property is sold, leased, etc. or the owner no longer suffers from financial hardship) the justification for the variance no longer exists, but the structure remains. Future owner/occupants are exposed to the nonconforming nature of the property and whatever hazards and public safety problems are associated with it. This exposure to property and personal risk from flood damage is unnecessary except for the personal condition of the previous owner.

A common misinterpretation of what constitutes “good and sufficient cause” for granting a variance is based on the financial status or other monetary circumstances of the owner. Financial hardship of the property owner is never a good and sufficient cause for granting a variance. Granting a variance for construction in a flood hazard area based on financial hardship only increases the probability that owners least able to afford it will suffer even greater monetary adversity (not to mention health and safety risks) when the structure is damaged during a flood.

Exceptional Hardship - §60.0 (a) (3) (ii)

“Variances shall only be issued by a community upon a determination that failure to grant the variance would result in exceptional hardship to the applicant.”

In determining whether or not an applicant has established an exceptional hardship sufficient to justify a variance, the variance or appeal board or other local governing body must weigh the applicant’s hardship against community goals and the purpose of their floodplain management ordinance. In the case of variances from NFIP flood elevation or floodproofing requirements, this would mean asking which is more serious: the hardship that this individual applicant would face, or the community’s need for strictly enforced regulations that protect its citizens from the dangers and damages of flooding? Only a truly exceptional, unique hardship relative to the physical character of a piece of property should persuade local officials to set aside provisions of an ordinance designed with the whole community’s safety in mind.

The hardship might not have to be so severe if the applicant were seeking a variance to a setback ordinance, for instance, which was intended merely to simplify street repair and modifications. In the course of considering variances to flood protection ordinances, however, variance boards continually must face the more difficult task of frequently having to deny requests from applicants whose personal circumstances evoke compassion, but whose hardships are simply not sufficient to justify deviation from community-wide flood damage prevention requirements.

The hardship that would result from failure to grant a requested variance must be exceptional, unusual, and peculiar to the property involved. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, the disapproval of one’s neighbors, or homeowners association restrictions likewise cannot, as a rule, qualify as exceptional hardships. All of these problems

can be resolved through other means, without granting a variance. This is so even if the alternative means are more expensive or complicated than building with a variance, or if they require the property owner to put the parcel to a different use than originally intended, or to build his or her home elsewhere.

For example, a situation in which it would cost a property owner several thousand dollars more to elevate a house to comply with the ordinance and an additional several thousand to build a wheelchair ramp or an elevator to provide access to that house for a handicapped member of the family might at first glance seem like the sort of problem that could be relieved by a variance. However, while financial considerations are always important to property owners and the needs of the handicapped person certainly must be accommodated, these difficulties do not put this situation in the category of “exceptional hardships” as they relate to variances. This is because the characteristics that result in the hardship are personal (the physical condition and financial situation of the people to propose to live on the property) rather than pertaining to the property itself. Also, the problem of day-to-day access to the building can be alleviated in any one of a number of ways (going to the additional expenses of building a ramp or elevator), without granting a variance. In fact, one method which facilitates the use of a structure for handicapped persons (especially those in wheel chairs) is to elevate the structure by means of earthen fill.

Third, the situation of handicapped persons occupying flood-prone housing raises a critical public safety concern. If a variance is granted and the building is constructed at grade, it will be absolutely critical that the handicapped or infirm person evacuate when flood waters begin to rise, yet he or she may be helpless to do so alone. Not only does this pose an unnecessary danger to handicapped persons but also it places an extra demand on the community’s emergency services personnel who may be called upon. If the building is properly elevated, the handicapped person can still be evacuated if there is sufficient warning and assistance available. If there is not, that person can, in all likelihood, survive the flood simply by remaining at home safely above the level of the flood waters.

More simply, the property owner’s difficulties would not really be relieved by the variance, but likely only postponed and perhaps ultimately increased. It would be more prudent over the long run for the property owner and the community if the variance were denied and the home built at the proper elevation with handicapped access. This will ensure the safety of all family members when floodwaters rise and also protect individual and community investment in the property, as discussed in the paragraphs on public safety and nuisances.

Another common argument for variances from the elevation requirement is the unaesthetic height differential with adjacent structures that would result. To promote architectural and aesthetic consistency, homeowners associations or subdivision boards frequently place restrictions on landscaping and construction practices, such as the total height to which structures can be built. The owner, and usually the prospective neighbors and local homeowners association, protest that the structure, if elevated, will be architecturally out of sync with the rest of the structures on the block and that property values will be decreased as a result.

Variance requests that claim exceptional hardships due to architectural considerations or conflicts with local subdivision regulations governing aesthetics should never be granted to waive regulations designed to protect the health and safety of residences. For the following reasons a community would be remiss in its responsibilities to its citizens if it placed appearance before public protection:

1. The hardship would be based on personal preference, not the property per se;
2. Most structures can be elevated such that they are aesthetically pleasing and architecturally consistent, despite the height difference;
3. Elevated structures are much less prone to flood damage, and therefore, actually increase in value relative to adjacent unprotected structures, especially after they are damaged in a flood;
4. The health and safety risks placed on occupants of the unprotected structures are unnecessary and avoidable.

Increased Flood Heights - § 60.6 (a) (3) (iii)

“Variances shall only be issued by a community upon a determination that the granting of a variance will not result in increased flood heights.”

A development for which a variance is to be granted must not in any way cause an increase in water surface elevations during floods of any magnitude, not just the base flood. Therefore, for a community to grant a variance, all other variance criteria in Section 60.6 (a) must be met, and the applicant must demonstrate through technical justification that the proposed development will not increase flood heights.

The underlying principal is that an increase in flood heights has the potential to cause flood damage to structures in the community that otherwise would not be flood-prone.. In addition, it has the potential to increase the depth of flooding, and thus the damage potential, of the structures that are already flood prone.

To allow increases in flood heights to occur unnecessarily is inconsistent with the objectives of sound floodplain management, and undermines the community’s previous efforts to protect structures by requiring elevation or floodproofing to or above the BFE. Increases in flood heights subtract from the level of protection provided by these requirements.

Public Safety and Nuisances - § 60.6 (a) (3) (iii)

“A variance will not cause additional threats to public safety or create nuisances.”

Variances must not result in additional threats to public safety or create nuisances. Local flood damage prevention ordinances (including elevation and floodproofing requirements) are intended

to help protect the health, safety, well-being, and property of the local citizens. This is a long range community effort usually made up of a combination of approaches such as adequate drainage systems, warning and evacuation plans, keeping new property (especially homes) above flood levels, and participating in an insurance program. These long-term goals can be met if exceptions to the laws are kept to a bare minimum.

Variances to allow the construction of habitable structures below the BFE, especially in the higher hazard areas such as floodways, places residents of those structures at much greater risk. The potential for loss of life is much greater in structures whose first floor is below the BFE, and where flood depths are greater than three feet or velocity is present. A community which grants variances to waive elevation requirements in these situations is doing a disservice to its citizens. In addition, a community may be held liable for personal injuries or loss of life, which occurs to occupants of structures for which a non-compliant variance has been granted.

It is often argued that variances to waive the elevation requirement should be granted to structures where handicapped or elderly persons will be occupants. The basis for this argument is that elevation of the structure will make wheelchair access difficult (i.e., long and expensive ramps) or that elderly people are not physically capable of climbing stairs. However, for the exact same reasons, handicapped and elderly people are much less able to quickly evacuate flood-prone structures. There are much more likely to become trapped inside structures if not aware of the imminent and worsening flood hazard or when flood waters rapidly rise. Therefore, it is difficult to imagine a case where a variance would be appropriate for structures when there is to be handicapped and/or elderly occupancy.

Not only does a community's public safety commitment apply to residents of structures located in flood hazard areas, but also to local emergency services personnel. Variances from the elevation requirement increase the risk exposure for personnel required to rescue residents of structures flooded because of the variance. Simply, if structures are elevated to or above the BFE, residents can in all likelihood survive the flood by remaining at home safely above the level of the waters. The necessity to rescue residents of elevated structures is not as great, and the local emergency services personnel can concentrate their efforts to areas of greater need.

Public Expense - § 60.6 (a) (3) (iii)

“Variances shall only be issued by a community upon a determination that the granting of a variance will not result in extraordinary public expense.”

The public expense is usually monetary (government funds), but can also be non-monetary. An example of extraordinary public expense is the repair or replacement of public facilities and infrastructure damaged by a flood because of a variance issuance. Another example is the construction of flood control projects or other public works to protect structures prone to flooding because of the issuance of variances. There are also public costs associated with emergency floodproofing measures such as sandbags and temporary floodwalls built (with public funds) to protect structures flooded because they were issued a variance from elevation requirement.

The time and equipment expended by emergency services personnel during the rescue of residents of flooded structures is significant public expense. This time and expense is unnecessary, and therefore “extraordinary”, if it is spent rescuing residents of structures for which variances were granted. There is also a significant “missed opportunity” (non monetary) public expense if an otherwise avoidable injury or death occurs while rescue personnel are busy evacuating structures for which variances were issued.

National expenditures in the form of various Federal disaster assistance programs (e.g., FEMA, SBA, etc.) non-government assistance (e.g., Red Cross), and other charity donations are also public expenses. Residents of structures flooded because of the issuance of variances may be entitled to one or more of these many forms of assistance; an increased public expense that, without a variance issuance, could be avoided. Specifically, residents of flooded structures (for which variances have been granted) may qualify for personal grants and monies to provide temporary housing under the terms of FEMA’s Disaster Assistance Program.

Another form of public expense occurs when owners of heavily damaged structures (for which variances were granted) cannot afford repairs, and abandon them. When local government is held responsible for repair or demolition (which is usually the case)’ the additional expense incurred by the public should be considered “extraordinary” because it would not have occurred had a variance not been issued.

Fraud and Victimization - § 60.6 (a) (3) (iii)

“Variances shall only be issued by a community upon a determination that the granting of a variance will not cause victimization of the public.”

When considering a variance request, local variance boards should consider the fact that every newly constructed building adds to the local government responsibilities and remains a part of the community for fifty or more years. Buildings that are permitted to be constructed below the base flood elevation are subject during all those years to increased risk of damage from floods, while future owners of the property and the community as a whole are subject to all the costs, inconvenience, danger, and suffering and that those increased flood damages bring.

One of the biggest potential problems involving variances is the change of ownership of a structure for which a variance has been granted. Future owners that purchase the property may unaware that it is subject to potential flood damages and can be insured only at very high flood insurance rates. Frequently, resale happens after the structure has been flooded. The original owner repairs the structure and removes all evidence of previous flooding. The structure is then put up for sale in an attempt to “unload” it on prospective buyers that are new to the area or who are otherwise unfamiliar with extent and nature of the local flood hazard.

An example of public victimization is the case of a variance request to waive elevation requirements for a mini-warehouse. The units or “bays” of the warehouse are rented to the

public for various personal uses such as the storage of excess furniture. Granting a variance in this case would create the potential for victimization of citizens who, unknowing of the flood hazard and the risk to their property, rent units to store their possessions. When the warehouse is flooded and its contents (which are not covered by flood damage by a homeowner's policy) are damaged, the owners may have no recourse for financial compensation. In addition, many stored possessions that are damaged may be family heirlooms, have sentimental or historic value, or otherwise be irreplaceable. Variances that have the potential to cause this type of victimization or fraud on the public should never be granted.

Existing Local Laws or Ordinances - § 60.6 (a) (3) (iii)

“Variances shall only be issued by a community upon a determination that the granting of a variance will not result in conflict with existing local laws or ordinances.”

A community is authorized to grant variances from their local floodplain ordinances provided that the variance is not in conflict with other existing Federal or State laws and regulations that, by statute, the community is required to obey and enforce. Examples are local laws protecting environmental and other natural resources. In addition, variances granted by a community must comply with the provisions of State zoning and enabling legislation and case law.

Minimum Necessary to Afford Relief - § 60.6 (a) (4)

The variance that is granted should be for the minimum deviation from the local requirements that will still alleviate the hardship. In the case of variances to an elevation requirement, this means the community need not grant permission for the applicant to build at grade or even to whatever elevation the applicant proposes, but only to that level that will both provide relief and preserve the integrity of the local ordinance.

For example, if the BFE is ten feet above natural grade, and only a three-foot waiver is necessary to avoid a legitimate hardship, then the community should require that the structure be elevated seven feet. Or, using this example, if the structure had to be built on grade to afford relief, the variance should still stipulate that all utilities and finished interior workings (and other damageable property) be elevated to or above the BFE (or to the maximum extent possible or practically feasible) in order to reduce the potential of flood damage.

The variance must be the absolute minimum necessary to relieve the hardship, which means the absolute maximum to prevent or reduce future flood damages. When a variance waiving the elevation/dry floodproofing requirements is granted, the “minimum necessary” includes the implementation of 1) “wet floodproofing” techniques and/or 2) provisions in § 60.3 (a) (3) which require the structure to:

“(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 material 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.”

In summary, very rarely will there be justification to grant a “blanket variance” which waives all NFIP requirements. There will almost always be something that can feasibly be done to the structure to reduce the potential for flood damages.

Disclosures - § 6.6 (a) (5), § 60.22 (c) (3) (ii)

Community officials must notify the applicant that the issuance of a variance to construct a structure below BFE will result in increased premium rates for flood insurance and that such construction below BFE increases risks to life and property.

Specifically, it is stated in § 60.0. (a) (5) that:

“a community shall notify the applicant in writing over the signature of the 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 for 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.”

In addition, under § 60.22 (c) (3) (ii), “Planning Considerations in Flood Prone Areas”, it is recommended that a community consider implementing:

“full disclosure to all prospective and interested parties (including but not limited to purchasers and renters) that variances have been granted for certain structure located within flood-prone areas.”

Such a disclosure is important and necessary to inform subsequent buyers of structures for which a variance was granted to build below BFE.

From a public safety standpoint, the prospective buyer has a right to know that the structure will be susceptible to flooding and its occupants subject to risk. From a financial standpoint, the prospective buyer has the right to know that the structure and its contents will be susceptible to damage. All prospective owners of these structures who desire flood insurance should be made aware, before closing, that the premium rates applied to these structures can be extreme, and possibly prohibitively high.

Often the variance applicant does not wish, or is not forced under mandatory purchase requirement, to purchase flood insurance at the time the variance is granted and high rates are not a problem. However, at some later date, especially after a structure has experienced flooding, there may be a desire by the owner to purchase flood insurance. In addition, prospective buyers

of a structure for which a variance has been granted may desire or be required to purchase flood insurance and may be discouraged from acquiring the structure because of the high rates. This situation can be compounded when an unsuspecting buyer purchases such a structure and discovers at a later date that insurance is required, but at a prohibitive cost. This can result in an economic hardship to an innocent party.

Functionally Depend Uses - § 60.6 (a) (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 [60.6] 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.”

As defined in § 59.1, a “functionally dependent use” means a use that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities that are necessary for the loading and unloading of cargo and passengers, and shipbuilding and repair facilities, but does not include the long-term storage or related manufactured facilities.

Long-term storage or related manufactured facilities can be located outside of the floodplain or fully comply with all NFIP requirements. These uses are therefore excluded from the definition of “functionally dependent use”. The intent of this is to limit variances only to the practical problems of building and repairing ships, of loading cargo and passengers from vessels, and moving the cargo onto other forms of transportation or to long-term storage facilities that fully comply with NFIP criteria.

In accordance with § 60.6 (a) (7), communities may grant variances for new construction or substantial improvement and for other development necessary for the conduct of functionally dependent uses. However, all variance criteria must be met and the structures or other development must be protected by methods, which minimize flood damages during the base flood.

When applied to some functionally dependent uses such as port facilities, the seafood industry or shipbuilding, NFIP floodplain management criteria can usually be met, with the industry still being able to operate as intended. An 1983 FEMA study entitled “*Effect of Floodplain Regulations on Inland Port Facilities*” identified few instances where ports could not be built in compliance with the regulations while several examples were given of ports that have met all standards.

However, because functionally dependent uses must be located on or adjacent to water to operate, there can be serious practical and operational difficulties resulting in exceptional hardship due to the physical characteristics of the property if a variance is not granted. Typically of concern to the port industry are the elevation and watertight floodproofing requirements in §

60.3 (d) (3). In addition, problems occasionally arise in dealing with various V-zone requirements in § 60.3 (e), especially those covering pile and column construction, breakaway walls, prohibition of fill for structural support, and location of new construction landward of mean high tide. Except for the floodway requirements, there are feasible alternative methods for creating no additional threats to public safety and achieving a comparable degree of protection from flood damages for the types of structures that normally accompany functionally dependent uses.

Therefore, in accordance with § 60.6 (a) (4), a variance can be used to address the unique problems of functionally dependent uses if it is for “the minimum necessary to afford relief considering the flood hazard” (§ 60.6 (a) (4)).

When evaluating variances for functionally dependent uses, the primary concerns should be that flood damages will be minimized during the base flood and that no additional threats to public safety will be created. A community that varies individual standards for functionally dependent uses, but still uses methods to reduce flood damages to the maximum extent possible or practically feasible does not jeopardize its NFIP eligibility.

As with existing variance criteria under § 60.3 (a) (1), no variances for functionally dependent uses may be issued within any designated regulatory floodway if any increases in flood levels would increase potential flood damages to other property owners. In many situations there will be feasible locations outside of the floodway for a functionally dependent use. In a functionally dependent use, there is no option but to locate in a floodway, the applicant must either demonstrate that no increase in flood stages will result or must provide additional floodway carrying capacity such as through channel improvements to ensure that no increase in flood stage will result. Communities should be instructed to contact FEMA regional offices for technical assistance if they encounter situations where functionally dependent uses must locate in a floodway, but cannot meet the no-increase-in-flood-stage requirement.

Historic Structures - § 60.6. (a)

“Variances may be issued for the repair or rehabilitation of historic structures upon a determination that (i) the purposed repair or rehabilitation will not preclude the structure’s continued designation as a historic structure and (ii) the variance is the minimum necessary to preserve the historic character and design of the structure.”

The original intent of providing special treatment to historic structures was to comply with the intent of the Historic Preservation Act of 1966 by 1) allowing historic structures to always maintain Pre-FIRM, subsidized insurance rates and, 2) minimizing the adverse impacts of NFIP requirements on the historic integrity of historic structures. However, it is stipulated under § 60.6 (a) that the variance be the minimum deviation necessary to preserve both the historic character of the structure and its designation as a historic building. It should be noted that communities that do not require historic structures to meet variance criteria may exempt historic structures through the substantial improvement requirement without requiring the minimum necessary to afford relief provision.

The granting of a variance should be based on a structure-by-structure review to determine whether elevation (or floodproofing if a non-residential structure is involved) to or above the BFE would destroy the historic character or design of the structure. If so, a variance for that structure may be granted. Variances should never be granted for portions of, or entire historic districts, but only for individual historic structures.

For example, if elevation of a historic structure would destroy its character and cause a loss of its Department of Interior (DOI) designation, a variance for the elevation requirement may be considered. However, the owner of the structure should still be required, in accordance with § 60.6 (a) (4), to do the following where feasible: 1) elevate all utilities and finished interior and exterior improvements wherever possible; and/or 2) raise the interior floors to or above the BFE or to the maximum extent possible (this is often technically feasible in older structures with high ceilings).

Physical alterations made to a “historic structure” which would otherwise constitute a substantial improvement must not result in the delisting of the structure from its DOI certified, state, or local inventory status. If such alterations cause the structure to lose its official listing or historic status, the structure would no longer be a “historic structure” for the purposes of the NFIP and would be considered a substantial improvement and therefore, comply with the NFIP requirements for new construction.

For further background on the pertinent regulations, procedures and adopted nomenclature of the DOI as they pertain to historic structures see **36 CFR 61.4, 61.5, 67.2, 67.4, 67.5, and 67.10.**

C. CONTACTS FOR ASSISTANCE

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