

CONSTRUCTING IN A FLOODPLAIN GUIDE

If you have this flyer, you are probably in a floodplain. This means that according to the Federal Insurance Rate Map (FIRM) all or a portion of your property is in the 1% floodplain. In order to build on your lot, you will have to follow some specific requirements, which have been passed down from the Federal and State levels.

The first thing to do is to explain a little about the Special Flood Hazard Area (SFHA) floodplain. There are several terms used for the 1% floodplain (all of which can be used interchangeably), Base Flood Elevation, Floodplain, or Floodway Fringe. A 1 % floodplain means that over the life of a 30 year mortgage, a home has a 26% chance of flooding. To build in a floodplain, several stipulations on the type of construction and the procedure followed for construction must be met. Regulation of construction in a special flood hazard area serves multiple purposes;

1. Where as flood insurance is not required on every property within a SFHA by building or retrofitting a structure flood insurance premiums should be lower.
2. Constructing or retrofitting a structure to meet the flood requirements should help minimize/or eliminate the amount of damage and associate problems that may come from a flood.

Below are the standard requirements for most construction. In some instances there may be additional requirements that are not covered below. Please note for a full detail of the requirements you should reference the Kosciusko County Flood Control Ordinance.

Existing Structures

If a house existed prior to February 4, 1987, which is the FIRM date for Kosciusko County, and you want to add an addition/remodel/or repair damage (whether it is a porch, attached garage, room, interior remodel or an addition to a detached accessory structure), you have two options:

1. If the construction is considered a non-substantial improvement then an improvement may be constructed assuming the following documentation can be provided;
 - a. A detailed quote of the full scope of the project including but not exceeding materials and labor. Attached is a list of items that the quote should include.

Please note that values are based on a cumulative approach over the life of the structure, once a structure has exceeded its allowed cumulative values all future improvements (additions/remodels/reconstructions) will be required to comply with all criteria for the specific flood area. In cases where the improvement is a 2nd story the entire structure will be required to meet the 1st floor elevations and where applicable the crawl space will need to be retrofitted. This includes garage floors and mechanicals. The non-substantial improvement criteria does

not apply to structures considered a repetitive loss under the Kosciusko County Flood Control Ordinance.

2. However, if the property has already utilized all of its non-substantial improvements (see above), the improvement (reconstruction/remodel/reconstruction) will exceed the 50% threshold (is substantial), or the structure is considered a repetitive loss, then any and all construction will have to meet all requirements of the Kosciusko County Flood Control Ordinance. (see Elevate Your Structure below for the steps to elevate).

Repetitive loss means flood-related damages sustained by a structure on two separate occasions during a 10-year period ending on the date of the event for which the second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25% of the market value of the structure at the time of each such flood event.

Substantial damage means damage of any origin sustained by a structure whereby the costs of restoring the structure to its before damaged condition equals or exceeds 50% of the market value cumulatively over the life of the structure (excluding the value of the land) before the damage occurred.

Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, in which the cumulative cost of improvements over the life of the structure equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures that have incurred "substantial damage" or repetitive loss 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 structures continued designation as a "historic structure".

New Construction/Substantial Construction

If the construction is a new structure, substantial improvement/repair, or a reparative loss structure then it will have to be elevated and brought entirely into compliance with the Kosciusko County Flood Control Ordinance. Please note that in addition to living area porches, garage floors and all mechanicals (including duct work) must also meet the required 1st floor elevation. Crawl space floors must be no lower than the base flood elevation and must have proper openings. Attached is a portion of the Kosciusko County Flood Control Ordinance relating to different types of construction.

Elevating Your Structure

When you are required to elevate a structure, there are several guidelines that must be followed.

1. A new benchmark must be set or an existing benchmark must be confirmed by a surveyor. You must provide our office, Kosciusko County Area Plan Commission, with a document on a surveyor's letterhead stating that a benchmark has been set at a specified elevation in a specific location.
2. Once this document is presented along with all other required paper work for an Improvement Location Permit the permit will be issued and at that time a blank FEMA elevation certificate will be provided.

3. Within six months after the permit is issued a completed FEMA elevation certificate, based on completed construction (if construction is not completed please contact our office), must be returned to the Kosciusko County Area Plan Commission. It is the responsibility of the individual to contact the surveyor and have them go back out to the site, complete the elevation certificate and return the completed certificate to our office. The elevation certificate is used to document that the structure was built in compliance with the Kosciusko County Flood Control Ordinance (if the certificate is not properly completed it will be considered incomplete, in violation, and will be returned to both the property owner and professional that completed it).

If the Area Plan Office does not receive the elevation certificate from you within six months of the date of issue for the permit, a reminder will be sent.

ADDITIONAL INFORMATION:

1. Prior to construction of a boathouse/ boat garages covering water (i.e. boat well) a permit must be obtained from Department of Natural Resources: Division of Water.
2. Mobile homes, small accessory structures, and propane tanks must all be properly anchored to resist flotation.
3. The following construction projects are exempt from elevating to the required 1st floor elevations;
 - a. The construction or placement of any new non residential building having a floor area of 400 sq. feet or less. However if there are mechanicals in said structure those must meet the required elevations and the structure must be anchored to resist flotation.
 - b. Above and below ground pools (all non-water proof equipment must be elevated).
 - c. Accessory structures that are entirely open no matter size (including but not limited to platforms, stairs, retaining walls, fences, billboards, carports, open decks, satellite dishes, and swimming pools.).

*** For a full detail of what is required in a Special Flood Hazard Area you should refer to the Kosciusko County Flood Control Ordinance.**

Items Include in determining Substantial Improvement/Repair

All Structural Elements, Including	All Interior Finish Elements, including	All Utility and Service Equipment, including	Other
<ul style="list-style-type: none"> • Spread or continuous foundation footings and pilings • Monolithic or other types of concrete slabs • All walls, tie beams, and trusses • Wood or reinforced concrete decking or roofing • Floors and ceilings • Attached decks and porches • Interior partition walls • Exterior wall finishes (e.g., brick, stucco, or siding) including painting and decorative moldings • Windows and doors • Re-shingling or retiling a roof • Hardware 	<ul style="list-style-type: none"> • Tiling, linoleum, stone, or carpet over sub flooring • Bathroom tiling and fixtures • Wall finishes, including dry wall, painting, stucco, plaster, paneling, marble, or other decorative finishes • Kitchen, utility, and bathroom cabinets • Hardware • Ornamental work 	<ul style="list-style-type: none"> • HVAC equipment • Repair or reconstruction of plumbing and electrical services • Light fixtures and ceiling fans • Security systems • Built-in kitchen appliances • Built-in washer/dryer • Central vacuum systems • Water filtration, conditioning, or recirculation systems 	<ul style="list-style-type: none"> • Labor and other costs associated with demolishing, removing, or altering building components • Construction management/supervision • Overhead and profit • Equivalent cost for: <ul style="list-style-type: none"> ○ Donated Materials ○ Volunteered labor (including owners') • Any improvements beyond pre-damaged condition

Items Excluded in determining Substantial Improvement/repair

<ul style="list-style-type: none"> • Plans and specifications • Survey Costs • Permit Fees • Debris removal (e.g. removal of debris from building or lot, dumpster rental, transport fees to landfill, and landfill tipping fees), and cleanup (e.g. dirt and mud removal, building dry-out, etc.) 	<ul style="list-style-type: none"> • Items not considered real property, such as throw rugs, furniture not built-in, appliances • Outside improvements, including: <ul style="list-style-type: none"> ○ Landscaping ○ Sidewalks ○ Fences ○ Yard Lights ○ Swimming Pools ○ Screened pool enclosures
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	<ul style="list-style-type: none">○ Sheds○ Gazebos○ Detached structures (including garages)○ Landscape irrigation system
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Note: This list is intended for guidance only, and may not be all-inclusive

Article 5 Provisions for Flood Hazard Reduction.

Section A. General Standards.

In all SFHAs and known flood prone areas the following provisions are required:

- (1) New construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure;
- (2) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state requirements for resisting wind forces;
- (3) New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage below the FPG;
- (4) New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;
- (5) Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities shall be located at/above the FPG or designed so as to prevent water from entering or accumulating within the components below the FPG. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the FPG;
- (6) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (7) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (8) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;
- (9) Any alteration, repair, reconstruction or improvements to a structure that is in compliance with the provisions of this ordinance shall meet the requirements of "new construction" as contained in this ordinance; and,

Section B. Specific Standards

In all SFHAs, the following provisions are required:

- (1) In addition to the requirements of Article 5, Section A, all structures to be located in the SFHA shall be protected from flood damage below the FPG. This building protection requirement applies to the following situations:
 - a.) Construction or placement of any new structure having a floor area greater than 400 square feet;
 - b.) Addition or improvement made to any existing structure where the cost of the addition or improvement equals or exceeds 50% of the market value cumulatively over the life of the structure (excluding the value of the land)

c.) Reconstruction or repairs made to a damaged structure where the costs of restoring the structure to its before damaged condition equals or exceeds 50% of the market value cumulatively over the life of the structure (excluding the value of the land) before the damage occurred.

d.) Installing a travel trailer or recreational vehicle on a site for more than 180 days;

e.) Installing a manufactured home on a new site or a new manufactured home on an existing site.

f.) Reconstruction or repairs made to a repetitive loss structure.

(2) **Residential Construction.** New construction or substantial improvement of any residential structure (or manufactured home) shall have the lowest floor, including basement, at or above the FPG (two feet above the base flood elevation). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with the standards of Article 5, Section B (4).

(3) **Non-Residential Construction.** New construction or substantial improvement of any commercial, industrial, or non-residential structure (or manufactured home) shall have the lowest floor, including basement, elevated to or above the FPG (two feet above the base flood elevation). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with the standards of Article 5, Section B (4). Structures located in all "A Zones" may be floodproofed in lieu of being elevated if done in accordance with the following:

a). A Registered Professional Engineer or Architect shall certify that the structure has been designed so that below the FPG, the structure and attendant utility facilities are watertight and capable of resisting the effects of the regulatory flood. The structure design shall take into account flood velocities, duration, rate of rise, hydrostatic pressures, and impacts from debris or ice. Such certification shall be provided to the official as set forth in Article 4, Section C (11).

b). Floodproofing measures shall be operable without human intervention and without an outside source of electricity.

(4.) **Elevated Structures.** New construction or substantial improvements of elevated structures shall have the lowest floor at or above the FPG.

Elevated structures with fully enclosed areas formed by foundation and other exterior walls below the flood protection grade shall be designed to preclude finished living space and designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls. Designs must meet the following minimum criteria:

a) Provide a minimum of two openings located in a minimum of two exterior walls (having a total net area of not less than one square inch for every one square foot of enclosed area).

b) The bottom of all openings shall be no more than one foot above the exterior grade or the interior grade immediately beneath each opening, whichever is higher.

c) Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.

d) Access to the enclosed area shall be the minimum necessary to allow for parking for vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator).

- e) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.
- f) The interior grade of such enclosed area shall be at an elevation at or higher than the exterior grade.
- g) If utilizing “engineered” openings proper certification must be submitted stating that said openings are designed to allow for the automatic equalization of hydrostatic flood forces on exterior walls. Said certification shall be kept on file.
- (h). Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities shall be located at/above the FPG or designed so as to prevent water from entering or accumulating within the components below the FPG. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the FPG
- (i) The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy; and

(5) Structures Constructed on Fill. A residential or nonresidential structure may be constructed on a permanent land fill in accordance with the following:

- a.) The fill shall be placed in layers no greater than 1 foot deep before compacting to 95% of the maximum density obtainable with the Standard Proctor Test method. The results of the test showing compliance shall be retained in the permit file.
- b.) The fill shall extend at least ten feet beyond the foundation of the structure before sloping below the FPG.
- c.) The fill shall be protected against erosion and scour during flooding by vegetative cover, riprap, or bulkheading. If vegetative cover is used, the slopes shall be no steeper than 3 horizontal to 1 vertical.
- a.) The fill shall not adversely affect the flow of surface drainage from or onto neighboring properties.
- b.) The top of the lowest floor including basements shall be at or above the FPG.

(6) Standards for Manufactured Homes and Recreational Vehicles. Manufactured homes and recreational vehicles to be installed or substantially improved on a site for more than 180 days must meet one of the following requirements:

- (a) These requirements apply to all manufactured homes and recreational vehicles regardless of location;
 - (i) The manufactured home shall be elevated on a permanent foundation such that the lowest floor shall be at or above the FPG and securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. This requirement applies to all manufactured homes to be placed on a site.
 - (ii) Fully enclosed areas formed by foundation and other exterior walls below the FPG shall be designed to preclude finished living space and designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls as required for elevated structures in Article 5, Section B. 4.

(iii.) Flexible skirting and rigid skirting not attached to the frame or foundation of a manufactured home are not required to have openings.

b.) Recreational vehicles placed on a site shall either:

- (i) be on site for less than 180 days; and,
- (ii) be fully licensed and ready for highway use (defined as being on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions); or
- (iii) meet the requirements for “manufactured homes” as stated earlier in this section.

(7). Above Ground Gas or Liquid Storage Tanks. All above ground gas or liquid storage tanks shall be anchored to prevent flotation or lateral movement.

(8). Accessory Structures: Relief to the elevation or dry floodproofing standards may be granted for accessory structures as defined in this ordinance. Such structures must meet the following standards:

- a) Shall not be used for human habitation.
- b) Shall be constructed of flood resistant materials.
- c) Shall be constructed and placed on the lot to offer the minimum resistance to the flow of floodwaters.
- d) Shall be firmly anchored to prevent flotation.
- e) Shall have service facilities such as electrical and heating equipment elevated or floodproofed to or above the FPG.
- f) Shall be designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls as required for elevated structures in Article 5, Section B. 4
- g) Shall obtain a letter of authorization from the Indiana Department of Natural Resources granting approval for construction in a floodway where applicable.

<u>Structure</u>	General Example Elevations:	<u>Required Elevation</u>
Residence Main Floor:		two (2) feet above BFE
Attached Garage Floor:		two (2) feet above BFE
Detached Accessory building over 400 sq. ft.:		two (2) feet above BFE
Mechanicals, including but not limited to A/C units, duct work, and furnaces		two (2) feet above BFE
Crawl Space without openings:		two (2) feet above BFE