

Note: Participation by the City of Columbus and Bartholomew County in the National Flood Insurance Program (NFIP) requires the adoption of flood hazard regulations that meet certain minimum criteria. This Chapter is based on the Indiana Department of Natural Resources model flood hazard area ordinance, which has been developed to assist local governments in meeting the minimum NFIP criteria. Instances in which this Chapter differs from the IDNR model ordinance have been noted to assist with local administration.

Amendments:

Chapter 4.7 revised through City of Columbus Ord. 2-2013, effective 2.19.13, and Bartholomew County Ord. 1-2013, effective 2.25.13.

Chapter 4.7 revised through City of Columbus Ord. 41-2014, effective 12.9.14, and Bartholomew County Ord. 7-2014, effective 12.9.14.

4.7 Flood Hazard Area (FH-OL)

A. **Authority & Purpose:** The Indiana Legislature has in IC 36-7-4 granted the power to local government units to control land use within their jurisdictions. Therefore, the City of Columbus and Bartholomew County adopt the following floodplain management regulations.

1. **Findings of Fact:**

- a. *Flood Hazard Identified:* The flood hazard areas of the City of Columbus and Bartholomew County are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- b. *Flood Hazard Causes:* Causes for flood losses include the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities, and by the occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, inadequately flood-proofed, or otherwise unprotected from flood damages.

2. **Purpose:** It is the purpose of this Chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- a. Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, which result in damaging increases in erosion or in flood heights or velocities;
- b. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- c. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters;
- d. Control filling, grading, dredging, and other development which may increase erosion or flood damage;
- e. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and,
- f. Make federal flood insurance available for structures and their contents in the City of Columbus and Bartholomew County by fulfilling the requirements of the National Flood Insurance Program.

3. **Objectives:** The objectives of this Chapter are:

- a. To protect human life and health;
- b. To minimize expenditure of public money for costly flood control projects;

4.7 Flood Hazard Area (FH-OL) (cont.)

- c. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- d. To minimize prolonged business interruptions;
- e. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets, and bridges located in floodplains; and
- f. To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize flood blight areas.

B. **Definitions:** Unless specifically defined below, words or phrases used in this Chapter shall be defined by Article 14 of this Ordinance and interpreted so as to give them the meaning they have in common usage and to give this Chapter its most reasonable application.

A zone: means portions of the SFHA in which the principal source of flooding is runoff from rainfall, snowmelt, or a combination of both. In A zones, floodwaters may move slowly or rapidly, but waves are usually not a significant threat to buildings. These areas are labeled as Zone A, Zone AE, Zones A1-A30, Zone AO, Zone AH, Zone AR and Zone A99 on a FIRM. The definitions are presented below:

Zone A: Areas subject to inundation by the one-percent annual chance flood event. Because detailed hydraulic analyses have not been performed, no base flood elevation or depths are shown.

Zone AE and A1-A30: Areas subject to inundation by the one-percent annual chance flood event determined by detailed methods. Base flood elevations are shown within these zones. (Zone AE is on new and revised maps in place of Zones A1-A30.)

Zone AO: Areas subject to inundation by one-percent annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone.

Zone AH: Areas subject to inundation by one-percent annual chance shallow flooding (usually areas of ponding) where average depths are 1-3 feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone.

Zone 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.

Zone A99: Areas subject to inundation by the one-percent annual chance flood event, but which will ultimately be protected upon completion of an under-construction federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. Zone A99 may only be used when the flood protec-

4.7 Flood Hazard Area (FH-OL) (cont.)

tion system has reached specified statutory progress toward completion. No base flood elevations or depths are shown.

Accessory structure: (appurtenant structure) means a structure with a floor area 400 square feet or less that is located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Accessory structures should constitute a minimal initial investment, may not be used for human habitation, and be designed to have minimal flood damage potential. Examples of accessory structures are detached garages, carports, storage sheds, pole barns, and hay sheds.

Addition: (to an existing structure) means any walled and roofed expansion to the perimeter of a structure in which the addition is connected by a common load-bearing wall other than a firewall. Any walled and roofed addition, which is connected by a firewall or is separated by independent perimeter load-bearing walls, is new construction.

Appeal: means a request for a review of the floodplain administrator's interpretation of any provision of this Chapter.

Area of shallow flooding: means a designated AO or AH Zone on the community's Flood Insurance Rate Map (FIRM) with base flood depths from one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Base Flood: means the flood having a one percent chance of being equaled or exceeded in any given year.

Base Flood Elevation (BFE): means the elevation of the one-percent annual chance flood.

Basement: means that portion of a structure having its floor sub-grade (below ground level) on all sides.

Building: see "Structure."

Community: means a political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.

Community Rating System (CRS): means a program developed by the Federal Insurance Administration to provide incentives for those communities in the Regular Program that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

Critical facility: means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire, and emergency response installations, and installations which produce, use, or store hazardous materials or hazardous waste.

D Zone: means unstudied areas where flood hazards are undetermined, but flooding is possible. Flood insurance is available in participating communities but is not required by regulation in this zone.

4.7 Flood Hazard Area (FH-OL) (cont.)

Development: means any man-made change to improved or unimproved real estate including but not limited to:

- a. construction, reconstruction, or placement of a structure or any addition to a structure;
- b. 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;
- c. installing utilities, erection of walls and fences, construction of roads, or similar projects;
- d. construction of flood control structures such as levees, dikes, dams, channel improvements, etc.;
- e. mining, dredging, filling, grading, excavation, or drilling operations;
- f. construction and/or reconstruction of bridges or culverts;
- g. storage of materials; or
- h. 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 structures and facilities such as painting, reroofing; resurfacing roads; or gardening, plowing, and similar agricultural practices that do not involve filling, grading, excavation, or the construction of permanent structures.

Elevated structure: means a non-basement structure built to have the lowest floor elevated above the ground level by means of fill, solid foundation perimeter walls, filled stem wall foundations (also called chain walls), pilings, or columns (posts and piers).

Elevation Certificate: is a certified statement that verifies a structure’s elevation information.

Emergency Program: means the first phase under which a community participates in the NFIP. It is intended to provide a first layer amount of insurance at subsidized rates on all insurable structures in that community before the effective date of the initial FIRM.

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

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

FEMA: means the Federal Emergency Management Agency.

Five-hundred year flood (500-year flood): means the flood that has a 0.2 percent chance of being equaled or exceeded in any year.

4.7 Flood Hazard Area (FH-OL) (cont.)

Flood: means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow, the unusual and rapid accumulation, or the runoff of surface waters from any source.

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

Flood Insurance Study (FIS): is the official hydraulic and hydrologic report provided by FEMA. The report contains flood profiles, as well as the FIRM, FBFM (where applicable), and the water surface elevation of the base flood.

Flood Prone Area: means any land area acknowledged by a community as being susceptible to inundation by water from any source. (see “Flood”).

Floodplain: means 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 the fringe districts.

Floodplain management: means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including but not limited to emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

Floodplain management regulations: means this Chapter and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power which control development in flood-prone areas. This term describes federal, state, or local regulations in any combination thereof, which provide standards for preventing and reducing flood loss and damage. Floodplain management regulations are also referred to as floodplain regulations, floodplain ordinance, flood damage prevention ordinance, and floodplain management requirements.

Flood Protection Grade (FPG): is the elevation of the regulatory flood plus two feet at any given location in the SFHA. (see “Freeboard”)

Floodproofing (dry floodproofing): is a method of protecting a structure that ensures that the structure, together with attendant utilities and sanitary facilities, is watertight to the floodproofed design elevation with walls that are substantially impermeable to the passage of water. All structural components of these walls are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy, and anticipated debris impact forces.

Floodproofing certificate: is a form used to certify compliance for non-residential structures as an alternative to elevating structures to or above the FPG. This certification must be by a Registered Professional Engineer or Architect.

4.7 Flood Hazard Area (FH-OL) (cont.)



Floodway: is 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.

Freeboard: means a factor of safety, usually expressed in feet above the BFE, which is applied for the purposes of floodplain management. It is used to compensate for the many unknown factors that could contribute to flood heights greater than those calculated for the base flood.

Fringe: is those portions of the floodplain lying outside the floodway.

Hardship: (as related to variances of this Chapter) means the exceptional hardship that would result from a failure to grant the requested variance. The Board of Zoning Appeals of jurisdiction requires that the variance is exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is NOT exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, or the disapproval of one's neighbors likewise cannot, as a rule, qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

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

Historic structure: means any structure individually listed on the National Register of Historic Places or the Indiana State Register of Historic Sites and Structures.

Increased Cost of Compliance (ICC): means the cost to repair a substantially damaged structure that exceeds the minimal repair cost and that is required to bring a substantially damaged structure into compliance with the local flood damage prevention ordinance. Acceptable mitigation measures are elevation, relocation, demolition, or any combination thereof. All renewal and new business flood insurance policies with effective dates on or after June 1, 1997, will include ICC coverage.

Letter of Final Determination (LFD): means a letter issued by FEMA during the mapping update process which establishes final elevations and provides the new flood map and flood study to the community. The LFD initiates the six-month adoption period. The community must adopt or amend its floodplain management regulations during the six-month period unless the community has previously incorporated an automatic adoption clause.

4.7 Flood Hazard Area (FH-OL) (cont.)

Letter of Map Change (LOMC): is a general term used to refer to 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 a 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.

Lowest adjacent grade: means the lowest elevation, after completion of construction, of the ground, sidewalk, patio, deck support, or basement entryway immediately next to the structure.

Lowest floor: means the lowest elevation described among the following:

- a. the top of the lowest level of the structure;
- b. the top of the basement floor;
- c. the top of the garage floor, if the garage is the lowest level of the structure;
- d. the top of the first floor of a structure elevated on pilings or pillars;
- e. the top of the floor level of any enclosure, other than a basement, below an elevated structure where the walls of the enclosure provide any resistance to the flow of flood waters unless:
 - i. the walls are designed to automatically equalize the hydrostatic flood forces on the walls by allowing for the entry and exit of flood waters, by providing a minimum of two openings (in addition to doorways and windows) in a minimum of two exterior walls; if a structure has more than one enclosed area, each shall have openings on exterior walls;
 - ii. the total net area of all openings shall be at least one (1) square inch for every one square foot of enclosed area; the bottom of all such openings shall be no higher than one (1) foot above the exterior grade or the interior grade immediately beneath each opening, whichever is higher; and,
 - iii. such enclosed space shall be usable solely for the parking of vehicles and building access.

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

4.7 Flood Hazard Area (FH-OL) (cont.)

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

Market value: means the building value, excluding the land (as agreed to between a willing buyer and seller), as established by what the local real estate market will bear. Market value can be established by independent certified appraisal, replacement cost depreciated by age of building (actual cash value), or adjusted assessed values.

Mitigation: means sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects. The purpose of mitigation is two fold: to protect people and structures, and to minimize the cost of disaster response and recovery.

National Flood Insurance Program (NFIP): is the federal program that makes flood insurance available to owners of property in participating communities nationwide through the cooperative efforts of the Federal Government and the private insurance industry.

National Geodetic Vertical Datum (NGVD) of 1929: as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

New construction: means any structure for which the “start of construction” commenced after the effective date of the community’s first floodplain ordinance.

New manufactured home park or subdivision: means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the community’s first floodplain ordinance.

North American Vertical Datum of 1988 (NAVD 88): as adopted in 1993 is a vertical control datum used as a reference for establishing varying elevations within the floodplain.

Obstruction: includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, canalization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation, or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water; or due to its location, its propensity to snare or collect debris carried by the flow of water, or its likelihood of being carried downstream.

One-hundred year flood (100-year 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”.

Note: The Definition of "Placement of Fill" has been added in support of increased local regulations for floodways.

4.7 Flood Hazard Area (FH-OL) (cont.)

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”.

Physical Map Revision (PMR): is an official republication of a community’s FEMA map to effect changes to base (1-percent annual chance) flood elevations, floodplain boundary delineations, regulatory floodways, and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas, or correction to base flood elevations or SFHAs.

Placement of Fill: The locating on a property of any soil, rocks, or other material or items that has the effect of limiting, altering, or preventing the flow of floodwater. Placement of fill shall not include incidental earthwork associated with replacing flatwork, such as drive-ways or sidewalks, gardening, and other similar activities.

Post-FIRM construction: means construction or substantial improvement that started on or after the effective date of the initial FIRM of the community or after December 31, 1974, whichever is later.

Pre-FIRM construction: means construction or substantial improvement, which started on or before December 31, 1974, or before the effective date of the initial FIRM of the community, whichever is later.

Public safety and nuisance: means anything which is injurious to the safety or health of an entire community, neighborhood or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

Recreational vehicle: means a vehicle which is (1) built on a single chassis; (2) 400 square feet or less when measured at the largest horizontal projections; (3) designed to be selfpropelled or permanently towable by a light duty truck; and (4) designed primarily not for use as a permanent dwelling, but as quarters for recreational camping, travel, or seasonal use.

Regular program: means the phase of the community’s participation in the NFIP where more comprehensive floodplain management requirements are imposed and higher amounts of insurance are available based upon risk zones and elevations determined in a FIS.

Regulatory flood: means the flood having a one percent (1%) chance of being equaled or exceeded in any given year, as calculated by a method and procedure that is acceptable to and approved by the Indiana Department of Natural Resources and the Federal Emergency Management Agency. The regulatory flood elevation at any location is as defined in Section 4.7(C)(2) of this ordinance. The “Regulatory Flood” is also known by the term “Base Flood”, “One-Percent Annual Chance Flood”, and “100-Year Flood”.

4.7 Flood Hazard Area (FH-OL) (cont.)



Repetitive loss: means flood-related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equaled or exceeded 25% of the market value of the structure before the damage occurred.

Section 1316: is that section of the National Flood Insurance Act of 1968, as amended, which states that no new flood insurance coverage shall be provided for any property that the Administrator finds has been declared by a duly constituted state or local zoning authority or other authorized public body to be in violation of state or local laws, regulations, or ordinances that intended to discourage or otherwise restrict land development or occupancy in flood-prone areas.

Special Flood Hazard Area (SFHA): means those lands within the jurisdictions of the City of Columbus and Bartholomew County subject to inundation by the regulatory flood. The SFHAs of the City of Columbus and Bartholomew County are generally identified as such on the Bartholomew County, Indiana and Incorporated Areas Flood Insurance Rate Map dated December 9, 2014 as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date. (These areas are shown on a FIRM as Zone A, AE, A1- A30, AH, AR, A99, or AO).

Start of construction: includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within 180 days of the permit date. The actual start means either the first placement or permanent construction of a structure on a site, such as the pouring of a slabs or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, foundations, or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure: means 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.

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

4.7 Flood Hazard Area (FH-OL) (cont.)

Substantial improvement: means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures that have incurred “repetitive loss” or “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 structures continued designation as a “historic structure”.

Suspension: means the removal of a participating community from the NFIP because the community has not enacted and/or enforced the proper floodplain management regulations required for participation in the NFIP.

Variance: is a grant of relief from the requirements of this Chapter, which permits construction in a manner otherwise prohibited by this Chapter where specific enforcement would result in unnecessary hardship.

Violation: means the failure of a structure or other development to be fully compliant with this Chapter. A structure or other development without the elevation, other certification, or other evidence of compliance required in this Chapter is presumed to be in violation until such time as that documentation is provided.

Watercourse: means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

X zone: means the area where the flood hazard is less than that in the SFHA. Shaded X zones shown on recent FIRMs (B zones on older FIRMs) designate areas subject to inundation by the flood with a 0.2 percent chance of being equaled or exceeded (the 500-year flood). Unshaded X zones (C zones on older FIRMs) designate areas where the annual exceedance probability of flooding is less than 0.2 percent.

Zone: means a geographical area shown on a FIRM that reflects the severity or type of flooding in the area.

Zone A: (see definition for A zone)

Zone B, C, and X: means areas identified in the community as areas of moderate or minimal hazard from the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. Flood insurance is available in participating communities but is not required by regulation in these zones (Zone X is used on new and revised maps in place of Zones B and C).

4.7 Flood Hazard Area (FH-OL) (cont.)



C. **General Provisions:** The following general provisions shall apply to this Chapter.

1. **Applicability:** This Chapter shall apply to all SFHAs, 500-year floodplain areas, and known flood prone areas within the jurisdictions of the City of Columbus and Bartholomew County.
2. **Basis for Establishing Regulatory Flood Data:** This Chapter's protection standard is the regulatory flood. The best available regulatory flood data is listed below.
 - a. The regulatory flood elevation, floodway, and fringe limits for the studied SFHAs and 500-year floodplains within the jurisdictions of the City of Columbus and Bartholomew County shall be as delineated on the one-percent annual chance flood profiles in the Flood Insurance Study of Bartholomew County, Indiana and Incorporated Areas and the corresponding Flood Insurance Rate Map dated December 9, 2014 as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date.
 - b. The regulatory flood elevation, floodway, and fringe limits for each of the SFHAs within the jurisdictions of the City of Columbus and Bartholomew County delineated as an "A Zone" on the Bartholomew County, Indiana and Incorporated Areas Flood Insurance Rate Map dated December 9, 2014 as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date shall be according to the best data available as provided by the Indiana Department of Natural Resources; provided the upstream drainage area from the subject site is greater than one square mile (see also Section 4.7(K)). Whenever a party disagrees with the best available data, the party needs to replace existing data with better data that meets current engineering standards. To be considered, this data must be submitted to the Indiana Department of Natural Resources for review and subsequently approved..
 - c. In the absence of a published FEMA map, or absence of identification on a FEMA map, the regulatory flood elevation, floodway, and fringe limits of any watercourse in the community's known flood prone areas shall be according to the best data available as provided by the Indiana Department of Natural Resources; provided the upstream drainage area from the subject site is greater than one square mile (see also Section 4.7(K)).
 - d. Upon issuance of a Letter of Final Determination (LFD), any more restrictive data in the new (not yet effective) mapping / study shall be utilized for permitting and construction (development) purposes, replacing all previously effective less restrictive flood hazard data provided by FEMA.

Increased Requirement: *The IDNR model ordinance provides standards for flood hazard reduction in the SFHAs (100-year floodplains) only. This Chapter extends those same regulations (based on the 100-year BFEs and FPGs) to the 500-year flood fringe area as well.*

Overlay Zoning Districts

Note: The IDNR model ordinance refers only to a Floodplain Development Permit. Sub-sections 3(a) and 3(b) have been added to ensure a coordinated and efficient local review process.

4.7 Flood Hazard Area (FH-OL) (cont.)

3. Floodplain Development Permit: A Floodplain Development Permit shall be required in conformance with the provisions of this Chapter prior to the commencement of any development activities in areas of special flood hazard.
 - a. *Floodplain Alteration with other Construction*: The Floodplain Development Permit shall be included as an element of any Improvement Location Permit required by this Ordinance in all instances where floodplain alterations (filling, grading, etc.) and other improvements (construction of a structure, etc.) are to be permitted simultaneously.
 - b. *Floodplain Alteration without other Construction*: The Floodplain Development Permit shall follow the procedures for a Zoning Compliance Certificate when applied for independently of other improvements (such as the placement of fill or other alterations not immediately including construction of a structure).
4. Compliance: No structure shall be located, extended, converted or structurally altered within the SFHA or 500-year floodplain without full compliance with the terms of this Chapter and other applicable regulations. No land or stream within the SFHA or 500-year floodplain shall hereafter be altered without full compliance with the terms of this chapter and other applicable regulations.
5. Abrogation and Greater Restrictions: This Chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Chapter and other ordinances or regulations conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
6. Mapped Floodplain / Actual Ground Elevation Discrepancies: In cases where there is a discrepancy between the mapped floodplain on the FIRM and the actual ground elevations, the elevation provided on the profiles shall govern.
 - a. If the elevation of the site in question is below the base flood elevation, that site shall be included in the SFHA and regulated accordingly.
 - b. If the elevation (natural grade) of the site in question is above the base flood elevation and not located within the floodway, that site shall be considered outside the SFHA and the floodplain regulations will not be applied. The property owner should be advised to apply for a LOMA.
7. Interpretation: In the interpretation and application of this Chapter all provisions shall be:
 - a. considered as minimum requirements;
 - b. liberally construed in favor of the governing body; and,
 - c. deemed neither to limit nor repeal any other powers granted under state statutes.

4.7 Flood Hazard Area (FH-OL) (cont.)

8. **Warning and Disclaimer of Liability:** The degree of flood protection required by this Chapter is considered reasonable for regulatory purposes and is based on available information derived from engineering and scientific methods of study. Larger floods can and will occur on rare occasions. Therefore, this chapter does not create any liability on the part of the City of Columbus, Bartholomew County, the Indiana Department of Natural Resources, or the State of Indiana for any flood damage that results from reliance on this Chapter or any lawfully made administrative decision.
 9. **Violations:** Failure to obtain a Floodplain Development Permit in the SFHA or 500-year floodplain or failure to comply with the requirements of a Floodplain Development Permit or conditions of a variance shall be deemed to be a violation of this Ordinance. All violations shall be subject to the provisions of Article 13, Enforcement & Penalties of this Ordinance.
 - a. The floodplain administrators shall inform the property owner that any such violation is considered a willful act to increase flood damages and therefore may cause coverage by a Standard Flood Insurance Policy to be suspended.
 - b. Nothing in this Chapter shall prevent the City of Columbus or Bartholomew County from taking any other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person or persons responsible.
- D. Administration:** The Planning Director, the Chief Code Enforcement Officer, and their designees shall administer and implement the provisions of this Chapter and be referred to as the Floodplain Administrators. The Planning Director shall be responsible for the implementation of this Chapter with regard to subdivision requests and all construction, development, and land uses for which a Zoning Compliance Certificate is required by this Ordinance. The Chief Code Enforcement Officer shall be responsible for the implementation of this Chapter with regard to all 1 and 2 family residences and all other similar construction, development, and land uses for which a Zoning Compliance Certificate is not required.
1. **Floodplain Development Permit Procedures:** Application for a Floodplain Development Permit shall be made to the appropriate Floodplain Administrator on forms furnished by him or her prior to any development activities, and may include, but not be limited to, the following information drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing and/or proposed structures; earthen fill; storage of materials or equipment; and drainage facilities, and the location of the foregoing. Specifically the following information is required:

Note: The specific penalties for violations provided by the IDNR model ordinance have been omitted in favor of a reference to Article 13 of this Ordinance. This alteration is intended to ensure consistent enforcement of all requirements of this Ordinance.

Note: The division of duties between the Planning Director and the Chief Code Enforcement Officer is unique to Columbus and Bartholomew County. These statements supplement the text of the IDNR model ordinance.

4.7 Flood Hazard Area (FH-OL) (cont.)

Note: The Chief Code Enforcement Officer will integrate the needed inspections and certifications with the typical building inspection process.

- a. *Application Stage:*
 - i. A description of the proposed development;
 - ii. Location of the proposed development sufficient to accurately locate property and structure in relation to existing roads and streams;
 - iii. A legal description of the property site;
 - iv. A site plan showing existing and proposed development locations and existing and proposed land grades;
 - v. Elevation of the top of the planned lowest floor (including basement) of all proposed buildings. Elevation should be in NAVD 88 or NGVD 1929;
 - vi. Elevation (in NAVD 88 or NGVD 1929) to which any non-residential structure will be floodproofed; and
 - vii. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development. A hydrologic and hydraulic engineering study is required and any watercourse changes submitted to DNR for approval and then to FEMA as a Letter of Map Revision (See Section 4.7(D)(2)(f) for additional information).
- b. *Construction Stage:*
 - (i) Upon establishment of the lowest floor of an elevated structure or structure constructed on fill, it shall be the duty of the applicant to submit to the Floodplain Administrator a certification of the NAVD 88 or NGVD 1929 elevation of the lowest floor, as built. Said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by the same. The Floodplain Administrator shall review the lowest floor elevation survey data submitted. The applicant shall correct deficiencies detected by such review before any further work is allowed to proceed. Failure to submit the survey or failure to make said corrections required hereby shall be cause to issue a stop-work order for the project. Any work undertaken prior to submission of the elevation certification shall be at the applicant's risk.
 - (ii) Upon establishment of the floodproofed elevation of a floodproofed structure, it shall be the duty of the applicant to submit to the Floodplain Administrator a floodproofing certificate. Certification shall be prepared by or under the direct supervision of a registered professional engineer and certified by same. (The Floodplain Administrator shall review the floodproofing certification submitted.) The applicant shall correct any deficiencies detected by such review before any further work is allowed to proceed. Failure to submit the floodproofing

4.7 Flood Hazard Area (FH-OL) (cont.)

- certification or failure to make correction required shall be cause to issue a stop-work order for the project.
- c. *Completion Stage:* Upon completion of construction, an elevation certification which depicts the “as-built” lowest floor elevation is required to be submitted to the Floodplain Administrator. If the project includes a floodproofing measure, floodproofing certification is required to be submitted by the applicant to the Floodplain Administrator.
2. Duties and Responsibilities of the Floodplain Administrators: The Floodplain Administrators and/or designated staff is authorized and directed to enforce the provisions of this Chapter. The administrators are further authorized to render interpretations of this Chapter, which are consistent with its spirit and purpose. Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to:
- a. *Ensure Compliance:* Review all Floodplain Development Permits and certified plans and specifications to assure that the requirements of this Chapter have been satisfied;
 - b. *Determine Damage:* Inspect and inventory damaged structures in SFHAs and complete substantial damage determinations;
 - c. *Ensure Authorization:* Ensure that construction authorization has been granted by the Indiana Department of Natural Resources for all development projects subject to Sections 4.7(I) and K(1) of this Chapter, and maintain a record of such authorization (either copy of actual permit/authorization or floodplain analysis/regulatory assessment).
 - d. *Maintain Permits:* Ensure that all necessary federal and/or state permits have been received prior to issuance of the local Floodplain Development Permit. Copies of such permits/authorizations are to be maintained on file with the Floodplain Development Permit;
 - e. *Maintain Records:* Maintain and track permit records involving additions and improvements to residences located in the floodway.
 - f. *Provide Notice of Watercourse Relocation:* Notify adjacent communities and the State Floodplain Coordinator prior to any alteration or relocation of a watercourse, and submit copies of such notifications to FEMA;
 - g. *Provide Data:* Maintain for public inspection and furnish upon request local permit documents, damaged structure inventories, substantial damage determinations, regulatory flood data, SFHA maps, Letters of Map Change (LOMC) copies of DNR permits and floodplain analysis and regulatory assessments (letters of map amendment), letters of authorization, federal permit documents, and “as-built” elevation and

Note: The description of the duties of the administrators have been reorganized from the IDNR model ordinance to eliminate duplicate text.

Interpretation Note: IDNR has determined that structures that are 400 square feet or less are exempt from the General Standards for Flood Hazard Reduction and intended that exemption to be clear through the text provided in Section 4.7(F)(1)(a). Further, all instances in Section 4.7(E) that refer to “substantial improvements” shall not be construed as applying the definition for that term as provided by this Chapter. As used in this Section the term “substantial improvements” shall mean any alterations, repair, reconstruction or improvements to a structure.

4.7 Flood Hazard Area (FH-OL) (cont.)

floodproofing data for all buildings constructed subject to this Chapter;

- h. *Apply Map Revisions:* Utilize and enforce all Letters of Map Change (LOMC) or Physical Map Revisions (PMR) issued by FEMA for the currently effective SFHA maps of the community;
- i. *Assure Maintenance:* Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished;
- j. *Review Plans:* Review certified plans and specifications for compliance.
- k. *Verify Lowest Floor Elevations:* Verify and record the actual elevation of the lowest floor (including basement) of all new or substantially improved structures, in accordance with Section 4.7(D)(1); and
- l. *Verify Floodproofing:* Verify and record the actual elevation to which any new or substantially improved structures have been floodproofed, in accordance with Section 4.7(D)(1).

E. **General Standards for Flood Hazard Reduction:** In all SFHAs, known floodplain areas, and 500-year floodplain areas the following provisions are required.

1. **General Anchoring Required:** New construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
2. **Manufactured Home Anchoring Required:** 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. **Flood Resistance Required:** New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage below the FPG.
4. **Flood Damage Minimized:** New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage.
5. **Service Facilities Protected:** Electrical, heating, ventilation, plumbing, air conditioning equipment, utility meters, 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. **Water Supply Systems Protected:** New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

4.7 Flood Hazard Area (FH-OL) (cont.)

7. Sanitary Sewage Systems Protected: 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 Protected: On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
9. Alteration of Structures in Compliance: Any alteration, repair, reconstruction or improvements to a structure that is in compliance with the provisions of this Chapter shall meet the requirements of “new construction” as contained in this Chapter.

F. **Specific Standards for Flood Hazard Reduction:** In all SFHAs, and 500-year floodplain areas the following provisions are required:

1. Standards for all Structures: In addition to the requirements of Section 4.7(E), all applicable structures as described below shall be protected from flood damage below the FPG. This building protection requirement applies to the following situations:
 - a. Construction or placement of any 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 value of the existing structure (excluding the value of the land);
 - c. Reconstruction or repairs made to a damaged structure where the costs of restoring the structure to it's before damaged condition equals or exceeds 50% of the market value of the structure (excluding the value of the land) before damaged occurred;
 - d. Installing a travel trailer or recreational vehicle on a site for more than 180 days; and
 - e. Installing a manufactured home on a new site or a new manufactured home on an existing site. This ordinance does not apply to returning the existing manufactured home to the same site it lawfully occupied before it was removed to avoid flood damage; and
 - f. Reconstruction or repairs made to a repetitive loss structure.
 - g. Addition or improvement made to any existing structure with a previous addition or improvement constructed since the community's first floodplain ordinance for the applicable jurisdiction (City or County).
2. Residential Structures: 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 Section 4.7(F)(4).

Interpretation Note: IDNR interprets Section 4.7(F)(1) as follows: (a) indicates that all new structures with a floor area greater than 400 square feet shall be protected from flood damage below the FPG (elevated or floodproofed), (b) indicates that any addition (to an existing structure having an area over 400 square feet) for which the cost of the addition equals or exceeds 50% of the value of the existing structure (excluding the land), requires the addition, but not the existing structure, to be protected from flood damage below the FPG at the time the addition is made to that structure, (c) indicates that reconstruction or repairs (to any existing structure over 400 square feet) resulting from damage (by any cause) that equals or exceeds 50% of the value of the structure (excluding the land) shall only be conducted if the structure being reconstructed or repaired is protected from flood damage below the FPG (elevated or floodproofed), (g) indicates that any addition (to an existing structure having an area over 400 square feet) for which the addition is the second such addition (of any value) made to the structure since the local adoption of floodplain regulations, then the addition, but not the existing structure (including the first addition), must be protected from flood damage below the FPG at the time the addition is made to that structure.

Interpretation Note: IDNR interprets Sections 4.7(F)(2), (3), and (4) to only apply to structures greater than 400 square feet.

4.7 Flood Hazard Area (FH-OL) (cont.)

3. Non-Residential Structures: New construction or substantial improvement of any commercial, industrial, or non-residential structure (or manufactured home) shall either have the lowest floor, including basement, elevated to or above the FPG (two feet above the base flood elevation) or be floodproofed to or above the FPG. 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 Section 4.7(F)(4). Structures located in all “A Zones” and 500-year floodplain areas 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 Section 4.7(D)(2)(1).
 - 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.

4.7 Flood Hazard Area (FH-OL) (cont.)



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 either the Standard or Modified Proctor Test method. The results of the test showing compliance shall be retained in the permit file.
 - b. The fill shall extend ten feet beyond the foundation of the structure before sloping below the BFE.
 - 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.
 - d. The fill shall not adversely affect the flow of surface drainage from or onto neighboring properties.
 - e. The top of the lowest floor including basements shall be at or above the FPG.
6. 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 to be placed on a site outside a manufactured home park or subdivision; in a new manufactured home park or subdivision; in an expansion to an existing manufactured home park or subdivision; or in an existing manufactured home park or subdivision on which a manufactured home has incurred “substantial damage” as a result of a flood:
 - 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.
 - 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 Section 4.7(F)(4).
 - b. These requirements apply to all manufactured homes to be placed on a site in an existing manufactured home park or subdivision that has not been substantially damaged by a flood:
 - i. The manufactured home shall be elevated so that the lowest floor of the manufactured home chassis is supported by reinforced piers or other foundation elevations that are no less than 36 inches in height above grade and

4.7 Flood Hazard Area (FH-OL) (cont.)

- be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- 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 Section 4.7(F)(4).
 - c. 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 Chapter.
7. Accessory Structures: Relief to the elevation or dry floodproofing standards may be granted for accessory structures. 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. Service facilities such as electrical and heating equipment shall be 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 Section 4.7(F)(4).
8. Above Ground Gas or Liquid Storage Tanks: All above ground gas or liquid storage tanks shall be anchored to prevent flotation or lateral movement.
- G. Standards for Subdivision Proposals:** All subdivision proposals shall be consistent with the need to minimize flood damage.
1. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
 2. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards, and;
 3. Base flood elevation data shall be provided for subdivision proposals and other proposed development (including manufactured home parks and subdivisions), which is greater than the lesser of fifty lots or five acres.

4.7 Flood Hazard Area (FH-OL) (cont.)



- H. Standards for Critical and Potentially Harmful Facilities:** Critical facilities are those for which even the slightest risk from flooding is too great given the importance of the facility in responding to a flood event or the complexities of evacuating the facility's occupants during a flood event. Potential harmful facilities are those that include chemicals or other substances that are potentially harmful to water quality or public health in the event they are inundated by and mixed with flood waters. The Floodplain Administrators may determine if any uses not specifically listed below are also either a critical or potential harmful facility and regulate them accordingly. The determination of the Floodplain Administrators may be appealed to the Board of Zoning Appeals through the Administrative Appeal process.
1. **Critical Facilities:** The following critical facilities, including their access driveways, shall be prohibited from locating in the SFHA or 500-year floodplain. The expansion of buildings or other aspects of any of these uses that are pre-existing in an SFHA or 500-year floodplain shall be exempt from this prohibition, provided that all other applicable provisions of this Chapter are met.
 - a. nursing home / assisted living facility.
 - b. animal shelter.
 - c. correctional facility.
 - d. day-care center (child or adult).
 - e. hospital.
 - f. institution for the developmentally disabled / mentally ill.
 - g. police, fire, or rescue station.
 - h. school (grades pre-school through 12).
 2. **Potentially Harmful Facilities:** The following potentially harmful facilities, if permitted or conditional in the underlying zoning district or permitted through a use variance or other similar process, shall also be reviewed as a conditional use in the SFHA or 500-year floodplain for the purpose of scrutinizing plans for containment of all chemicals and other potential water-borne pollutants. The expansion of buildings or other aspects of any of these uses that are pre-existing in an SFHA or 500-year floodplain shall be exempt from this prohibition, provided that all other applicable provisions of this Chapter are met.
 - a. Farm (CFO/CAFO types I and II).
 - b. Sewage Treatment Plant.
 - c. Gas station (and other similar fueling facilities).
 - d. Dry cleaners (commercial).
 - e. Hazardous materials production and/or bulk storage.
 - f. Waste disposal facility.
- I. Standards for Identified Floodways:** Located within SFHAs, established in Section 4.7(C)(2), are areas designated as floodways. The floodway is an extremely hazardous area due to the velocity of floodwaters, which carry debris, potential projectiles, and have erosion potential.

Increased Requirement: The IDNR model ordinance contains only general standards for critical facilities. The City of Columbus and Bartholomew County have added specific standards for critical facilities and potentially harmful facilities.

Increased Requirement: The IDNR model ordinance does not specify or limit floodway uses or activities. The City of Columbus and Bartholomew County have added limitations on the types of uses and activities permitted in the floodway.

4.7 Flood Hazard Area (FH-OL) (cont.)

1. Use Restrictions: All development and land altering activities, including the construction of new buildings, the placement of fill, and the creation of any other potential obstructions to the flow of floodwater shall be prohibited in all floodways. The following activities and uses shall be exempt from this prohibition, provided that all necessary IDNR approvals are obtained and all other applicable provisions of this Chapter are met:
 - a. Expansion of buildings and uses that are pre-existing in the floodway.
 - b. Construction of buildings and use of pre-existing lots that have been previously, specifically established for development. “Established” is defined as having an approved and unexpired preliminary plat.
 - c. Agricultural uses (pasture land, fields, etc. excluding all structures).
 - d. Wellfields, utility transmission lines and related infrastructure.
 - e. Nature preserve / conservation areas.
 - f. Marinas, boat ramps, fishing piers and other similar water-related recreation facilities.
 - g. Streets, roads, bridges, pedestrian paths, and related infrastructure.
 - h. Mineral extraction operations.
 - i. Flood mitigation projects, regulated drain maintenance, and other drainage improvement projects undertaken by a government entity.
2. Review Procedure: If the site is in an identified floodway and the proposed activity is exempt from the prohibitions provided by Section 4.7(I)(1) above or permitted through a use variance or other similar process, the Floodplain Administrators shall require the applicant to forward the application, along with all pertinent plans and specifications, to the Indiana Department of Natural Resources and apply for a permit for construction in a floodway.
 - a. *IDNR Permit Required:* Under the provisions of IC 14-28-1 a permit for construction in a floodway from the Indiana Department of Natural Resources is required prior to the issuance of a local building permit for any excavation, deposit, construction or obstruction activity located in the floodway. This includes land preparation activities such as filling, grading, clearing and paving etc. undertaken before the actual start of construction of the structure. However, it does exclude non-substantial additions/improvements to existing (lawful) residences in a non-boundary river floodway. (IC 14-28-1-26 allows construction of non-substantial additions/improvements to residences in a non-boundary river floodway without obtaining a permit for construction in the floodway from the Indiana Department of Natural Resources). Please note that if fill is needed to elevate an addition above

4.7 Flood Hazard Area (FH-OL) (cont.)



the existing grade, prior approval (construction in a floodway permit) for the fill is required from the Indiana Department of Natural Resources.

- b. *Permit Procedure and Applicable Regulations:* No action shall be taken by the Floodplain Administrators until a permit or letter of authorization (when applicable) has been issued by the Indiana Department of Natural Resources granting approval for construction in the floodway. Once a permit for construction in a floodway or letter of authorization has been issued by the Indiana Department of Natural Resources, the Floodplain Administrator may issue the local Floodplain Development Permit, provided the provisions contained in Section 4.7(E) through (I)(1) of this ordinance have been met. The Floodplain Development Permit cannot be less restrictive than the permit for construction in a floodway issued by the Indiana Department of Natural Resources. However, a community's more restrictive regulations (if any) shall take precedence.
 - c. *Flood Increase Criteria & Determination:* No development shall be allowed which acting alone or in combination with existing or future development, that will adversely affect the efficiency of, or unduly restrict the capacity of the floodway. This adverse effect is defined as an increase in the elevation of the regulatory flood of at least fifteen-hundredths (0.15) of a foot as determined by comparing the regulatory flood elevation under the project condition to that under the natural or pre-floodway condition as proven with hydraulic analyses. The increase in the regulatory flood resulting from any development shall be determined by IDNR as an element of the permit review process. In no instance shall the City of Columbus or Bartholomew County be assumed to have responsibility for this determination.
 - d. *Procedures for Projects Involving Channel Modifications:* For all projects involving channel modifications or fill (including levees) the Floodplain Administrator shall submit the data and request that the Federal Emergency Management Agency revise the regulatory flood data per mapping standard regulations found at 44 §CFR 65.12. Such request shall be included in the community's biennial report submission to the Federal Emergency Management Agency.
- J. **Standards for Identified Fringe:** If the site is located in an identified fringe, then the Floodplain Administrator may issue the local Floodplain Development Permit provided the provisions contained in Section 4.7(E) through (H) of this Chapter have been met. The key provision is that the top of the lowest floor of any new or substantially improved structure shall be at or above the FPG.

Note: The last 2 sentences of Section 4.7(I)(2)(c) have been added to the IDNR model ordinance to clarify responsibility.

Note: The IDNR model ordinance indicates that the local community shall "submit the data" and request that FEMA revise the regulatory flood data in all instances of channel modifications or fill. The IDNR model ordinance contains no time frame or other parameters for this submittal. The model ordinance was modified for the purpose of clarity and consistency.

4.7 Flood Hazard Area (FH-OL) (cont.)

K. Standards for SFHAs Without Established Base Flood Elevation and/or Floodways/Fringes.

1. Significant Upstream Drainage: If the site is in an identified floodplain where the limits of the floodway and fringe have not yet been determined, and the drainage area upstream of the site is greater than one square mile, the Floodplain Administrator shall require the applicant to forward the application, along with all pertinent plans and specifications, to the Indiana Department of Natural Resources for review and comment.
 - a. No action shall be taken by the Floodplain Administrator until either a permit for construction in a floodway (including letters of authorization) or a floodplain analysis/regulatory assessment citing the one-percent annual chance flood elevation and the recommended Flood Protection Grade has been received from the Indiana Department of Natural Resources.
 - b. Once the Floodplain Administrator has received the proper permit for construction in a floodway (including letters of authorization) or floodplain analysis/regulatory assessment approving the proposed development, a Floodplain Development Permit may be issued provided the conditions of the Floodplain Development Permit are not less restrictive than the conditions received from the Indiana Department of Natural Resources and the provisions contained in Section 4.7(E) through (I)(1) of this Chapter have been met.
2. Insignificant Upstream Drainage: If the site is in an identified floodplain where the limits of the floodway and fringe have not yet been determined and the drainage area upstream of the site is less than one square mile, the Floodplain Administrator shall require the applicant to provide an engineering analysis showing the limits of the floodplain and one-percent annual chance flood elevation for the site. Upon receipt, the Floodplain Administrator may issue the local Floodplain Development Permit, provided the provisions contained in Section 4.7(E) through (H) of this Chapter have been met.
3. Review Criteria: The total cumulative effect of the proposed development, when combined with all other existing and anticipated development, shall not increase the regulatory flood more than 0.14 of one foot and shall not increase flood damages or potential flood damages. In no instance shall the City of Columbus or Bartholomew County be assumed to have responsibility for this determination.

Note: The last sentence of Section 4.7(K)(3) has been added to the IDNR model ordinance to clarify responsibility.

4.7 Flood Hazard Area (FH-OL) (cont.)

L. Standards for Other Flood Prone Areas: All development in known flood prone areas not identified on FEMA maps, or where no FEMA published map is available, shall meet general standards as required per Section 4.7(E) through (H). Any other flood prone areas subject to this provision shall be as specifically identified through supplemental floodplain maps adopted by the applicable jurisdiction (City or County, as appropriate).

M. Additional Standards for the Haw Creek Watershed (HUC #05120205060): The Haw Creek flood hazard modeling developed by Christopher B. Burke Engineering (CBBEL) in May of 2011, as updated periodically shall serve as a supplement to the FEMA-provided Flood Insurance Rate Maps for the Haw Creek watershed. This modeling, including updates, shall hereafter be referred to as the “base model”. The following additional standards shall apply to any development, construction, earth moving, or other similar activity that is proposed to occur in the Haw Creek watershed:

1. **Floodplain Mapping Supplemented:** All requirements for structures in the FEMA-identified SFHA and 500-year floodplains established by this Chapter (Chapter 4.7) shall be extended to the base model 500-year flood inundation limits as well, with the base model 100-year BFE as the basis for determining FPG. In all instances where the current Flood Insurance Rate Maps and Flood Insurance Studies prepared by the Federal Emergency Management Agency and the 500-year flood inundation limits and 100-year flood elevations identified on the base model are in conflict, that which provides for the maximum amount of protection from flooding shall control.
2. **Modeling Required and Obstruction Prohibited for Flood Flow Conveyance Paths:** Prior to the commencement of any development, construction, earth moving, or other similar activities to occur within the 500-year flood flow conveyance paths (as identified by the base model) the proposed activity shall be evaluated for its potential impacts. This modeling requirement includes all flood control measures, including those that are intended for temporary protection (such as sandbagging, etc.) that may potentially impact the 500-year flood flow conveyance paths. The Planning Director may, upon the advice of a qualified engineer, exempt from the modeling requirement development activities that are so minimal that any conceivable impact would also be minimal and likely not detectable. To the extent possible, these activities shall be included in the base model, consistent with Section 4.7(M)(2)(c).
 - a. The modeling shall be conducted and/or evaluated by a qualified consultant chosen and under contract by the City of Columbus and all costs associated with the modeling shall be incurred by the applicant and shall be paid to the City prior to the modeling.

Note: The last sentence of Section 4.7(L) was added to the IDNR model for the purpose of clarity.

Amendments:

Section 4.7(M) revised per City Ord. 26, 2011 (10.12.11) and City Ord. 2, 2013 (2.19.13).

4.7 Flood Hazard Area (FH-OL) (cont.)

- b. No development, construction, earth moving, or other similar activities shall result in any obstruction or loss of capacity in any 500-year flood flow conveyance path (as identified by the base model) unless the required modeling shows that the proposed project along with any proposed compensatory measure, acting alone or in combination with existing development will not increase the modeled 500-year flood elevations more than 0.14 foot. The amount of obstruction shall be measured cumulatively beginning October 12, 2011 (the effective date of this provision).
 - i. The maximum increase in 500-year flood elevations shall apply to all properties, streets, and other off-site locations in the watershed, but shall not apply to the property on which the development or similar activity is taking place. There shall be no limit to these self-imposed increases in flood elevations.
 - ii. Any self-imposed increases in flood elevations on property on which development or similar activity takes place shall not be counted toward calculating the cumulative increase in flood elevations on that same property as a result of development activity undertaken by others. The maximum flood elevation increase refers to the maximum amount of increase that a property owner or owners, over time, can cause to occur on adjacent properties. In no instance shall self-imposed increases prevent adjacent property owners from developing their properties to the maximum extent permitted.
 - iii. All calculations of the flood elevation increase shall be rounded to the nearest hundredths of a foot. Non-rounded results equaling 5 thousandths, 5 ten-thousands, etc. or more shall be rounded up to result in figures in the nearest hundredths of a foot. Similarly, all non-rounded results of less than 5 thousandths, ten-thousands, etc. shall be rounded down.
 - iv. At the time of modeling for any development or similar activity the base model shall be updated to reflect any improved topographic information and shall be adjusted to include any stormwater storage that previously occurred in a structure that is proposed to be protected and therefore no longer available for storage. Any increase in flood elevations that results from removal of stormwater storage from existing structures shall not count toward the maximum flood elevation increase.
 - v. All interpretations and calculations not expressly described in this Section shall follow Indiana Department of Natural Resources standards, policies, etc. for the review of development proposed in a floodway.

4.7 Flood Hazard Area (FH-OL) (cont.)

- c. At the discretion of the Planning Director, upon the advice of the qualified consultant, the applicant shall also be required to provide as-built plans for any completed development, construction, earth moving, or other similar activities and to incur the costs to update the base model to include that change. The as-built plans and model update cost shall be paid prior to occupancy or other similar use of the completed activity.

N. **Appeals and Variances:** The Board of Zoning Appeals of jurisdiction (the board) shall hear and decide appeals and requests for variances from the requirements of this Chapter.

1. **Appeals of Administrative Decisions:** The board shall hear and decide appeals when it is alleged that an error in any requirement, decision, or determination is made by the Floodplain Administrator in the enforcement or administration of this Chapter.
2. **Variance Considerations:** In considering any applications for variance from the requirements of this Chapter, the board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Chapter, as well as;
 - a. The danger to life and property due to flooding or erosion damage;
 - b. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - c. The importance of the services provided by the proposed facility to the community;
 - d. The necessity to the facility of a waterfront location, where applicable;
 - e. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - f. The compatibility of the proposed use with existing and anticipated development;
 - g. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 - h. The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - i. The expected height, velocity, duration, rate of rise, and sediment of transport of the floodwaters at the site; and,
 - j. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.
3. **Variance Conditions:** The following conditions shall apply to the consideration of applicants for variance from the requirements of this Chapter.

Note: The description of the standards for variance notification and the conditions for variances have been reorganized from the IDNR model ordinance to eliminate duplicate text.

4.7 Flood Hazard Area (FH-OL) (cont.)

- a. Variances shall only be issued when there is:
 - i. A showing of good and sufficient cause;
 - ii. A determination that failure to grant the variance would result in exceptional hardship; and,
 - iii. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud or victimization of the public, or conflict with existing laws or ordinances.
 - b. No variance for a residential use within a floodway subject to Section 4.7(I) or Section 4.7(K)(1) of this Chapter may be granted.
 - c. Any variance granted in a floodway subject to Section 4.7(I) or Section 4.7(K)(1) of this Chapter will require a permit from the Indiana Department of Natural Resources.
 - d. Variances to the requirements of Section 4.7(F), may be granted only when a new structure is to be located on a lot of one-half acre or less in size, contiguous to and surrounded by lots with existing structures constructed below the flood protection grade.
 - e. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - f. Variances may be issued for the repair or rehabilitation of “historic structures” upon a determination that the proposed repair or rehabilitation will not preclude the structure’s continued designation as an “historic structure” and the variance is the minimum to preserve the historic character and design of the structure. Historic structures are those listed individually on the National Register of Historic Places or the Indiana State Register of Historic Sites and Structures.
 - g. Upon the consideration of the factors listed in Section 4.7(N), and the purposes of this Chapter, the board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Chapter.
4. **Variance Notification:** Any applicant to whom a variance is granted that allows the lowest floor of a structure to be built below the flood protection grade shall be given written notice specifying the difference between the flood protection grade and the elevation to which the lowest floor is to be built and stating that the cost of the flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation. A written notice shall be signed by a community official. The written notice shall state that:
- a. The issuance of a variance to construct a structure below the flood protection grade will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage; and;

4.7 Flood Hazard Area (FH-OL) (cont.)

- b. Such construction below the flood protection grade increases risks to life and property.
5. Appeal and Variance Reporting: The Floodplain Administrator shall maintain the records of appeal actions and report any variances to the Federal Emergency Management Agency or the Indiana Department of Natural Resources upon request (see also Section 4.7(N)(4)). The Floodplain Administrator will also maintain a record of all variance actions, including justification for their issuance.

