

Floodplain Standards (FP)

5.32 FP-01: Floodplain Standards

This Floodplain Standards section applies to the following zoning districts:



The following standards apply:

A. Statutory Authorization, Findings of Fact, Purpose, and Objectives:

1. *Statutory Authorization:* 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 Richmond does hereby adopt the following floodplain management regulations:
2. *Findings of Fact:*
 - a. The flood hazard areas within the planning and zoning jurisdiction of the City are subject to periodic inundation which results 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. These flood losses are caused by 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, flood-proofed, or otherwise unprotected from flood damages.
3. *Purpose:* 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, flood heights, or flood velocities.
 - b. Require that uses vulnerable to floods, including facilities that 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 that are involved in the accommodation of floodwaters.
 - d. Control filling, grading, dredging, and other development that 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.
 - f. Make federally subsidized flood insurance available for structures and their contents in the planning and zoning jurisdiction of the City by fulfilling the requirements of the National Flood Insurance Program.
4. *Objectives:*
 - a. To protect human life and health.
 - b. To minimize expenditure of public money for costly flood control projects.
 - 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.
 - 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.
 - g. To ensure that potential home buyers are notified that property is in a flood area.

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B. General Provisions:

1. *Applicability:* This section shall apply to all Special Flood Hazard Areas within the planning and zoning jurisdiction of the City of Richmond.
2. *Basis for Establishing Regulatory Flood Data:* The protection standard is the regulatory flood. The best available regulatory flood data is listed in *Section 5.32(B)(2)(a)* and *5.32(B)(2)(b)* (see below). Whenever a party disagrees with the best available data, that party shall submit a detailed engineering study with better data to the Indiana Department of Natural Resources for review and approval.
 - a. The regulatory flood elevation, floodway, and fringe limits for the studied Special Flood Hazard Areas of the planning and zoning jurisdiction of the City shall be as delineated as "AH Zones" or "AO Zones" on the Flood Insurance Rate Map for the City dated August 16, 1982 and on the Flood Insurance Rate Map for Wayne County dated August 16, 1982 (for applicable extra-territorial areas), 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 unstudied Special Flood Hazard Areas of the planning and zoning jurisdiction of the City and delineated as an "A Zone" on the Flood Insurance Rate Map for the City dated August 16, 1982 and on the Flood Insurance Rate Map for Wayne County dated August 16, 1982 (for applicable extra-territorial areas), and shall be according to the best data available as provided by the Indiana Department of Natural Resources.
3. *Floodplain Development Permit:* A Floodplain Development Permit shall be required prior to the commencement of any development activities in Special Flood Hazard Areas.
4. *Compliance:*
 - a. No structure shall hereafter be located, extended, converted, or structurally altered within the Special Flood Hazard Area without full compliance with the terms of the Floodplain Standards and other applicable regulations.
 - b. No land or stream within Special Flood Hazard Areas shall be altered without full compliance with the terms of the Floodplain Standards and other applicable regulations.
5. *Discrepancy between Mapped Floodplain and Actual Ground Elevations:*
 - a. In cases where there is a discrepancy between the mapped Special Flood Hazard Areas on the Flood Insurance Rate Map and the actual ground elevations, the actual ground elevations shall govern.
 - b. If the elevation of the site in question is below the base flood elevation, that site shall be included in the Special Flood Hazard Area and regulated accordingly.
 - c. If the elevation of the site in question is above the base flood elevation, that site shall be considered outside the Special Flood Hazard Area and the floodplain regulations shall not be applied. The property owner should be advised to apply for a Letter of Map Amendment (LOMA).
6. *Interpretation:* In the interpretation and application of the Floodplain Standards all provisions shall be:
 - a. Considered as minimum requirements.
 - b. Liberally construed in favor of the City.
 - c. Deemed neither to limit nor repeal any other powers granted under State statutes.
7. *Warning and Disclaimer of Liability:* The degree of flood protection required by this Unified Development Ordinance 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, the Unified Development Ordinance does not create any liability on the part of the City, the County, the Indiana Department of Natural Resources, or the State of Indiana for any flood damage that results from reliance on the Unified Development Ordinance or any administrative decision made lawfully thereunder.

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8. *Penalties for Floodplain Standards Violation:* Failure to obtain a Floodplain Development Permit in the Special Flood Hazard Area, or failure to comply with the requirements of a Floodplain Development Permit or conditions of a Floodplain Standards Variance, shall be deemed a violation of the Unified Development Ordinance. All violations shall be considered a common nuisance and be treated as such in accordance with the provisions of *Article 10: Enforcement and Penalties* of the Unified Development Ordinance.
 - a. A separate offense shall be deemed to occur for each day the violation continues to exist.
 - b. The City shall inform the 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.
 - c. Nothing herein shall prevent the City from taking such other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person responsible.

C. Administration:

1. *Designation of Administrator:* The Common Council hereby appoints the City Engineer to administer and implement the provisions of the Floodplain Standards and is herein referred to as the “Floodplain Administrator.”
2. *Floodplain Development Permit Procedures:* Application for a Floodplain Development Permit shall be made to the Floodplain Administrator on forms furnished by him or her prior to any development activities, and shall include, but not be limited to, the following plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, earthen fill, storage of materials or equipment, drainage facilities, and the location of the foregoing. Specifically the following information shall be required:
 - 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 development plan showing existing and proposed development locations and existing and proposed land grades.
 - v. Elevation of the top of the lowest floor (including basement) of all proposed buildings. Elevation should be in National Geodetic Vertical Datum of 1929.
 - vi. Elevation, in National Geodetic Vertical Datum of 1929 to which any nonresidential structure will be flood-proofed.
 - vii. Description of the extent to which any watercourse will be altered or related as a result of proposed development.
 - b. *Construction Stage:* Upon placement of the lowest floor or flood-proofing, it shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the National Geodetic Vertical Datum of 1929 elevation of the lowest floor or flood-proofed elevation, 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. When flood-proofing is utilized for a particular structure, said certification shall be prepared by, or under the direct supervision of, a professional engineer or architect, and certified by same. Any work undertaken prior to submission of the certification shall be at the permit holders’ risk. (The Floodplain Administrator shall review the lowest floor and flood-proofing elevation survey data submitted.) The permit holder 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.

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D. Provisions for Flood Hazard Reduction:

1. *General Standards:* In all Special Flood Hazard Areas all of the following provisions shall be required.
 - a. New construction and substantial improvements shall be anchored to prevent flotation, collapse, or movement of the structure.
 - b. 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.
 - c. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage below the Flood Protection Grade (FPG).
 - d. New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage.
 - e. Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
 - f. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
 - g. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
 - h. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
 - i. Any alteration, repair, reconstruction, or improvements to a structure that is in compliance with the provisions of this section shall meet the requirements of “new construction” as contained herein.
 - j. Any alteration, repair, reconstruction, or improvement to a structure that is not in compliance with the provisions of this section shall be undertaken only if said nonconformity is not further extended or replaced.
 - k. Whenever any portion of the Special Flood Hazard Area is authorized for use, the volume of space that will be occupied by the authorized fill or structure below the Base Flood Elevation (BFE) shall be compensated for and balanced by an equivalent volume of excavation taken below the Base Flood Elevation. The excavation volume shall be at least equal to the volume of storage lost (i.e replacement ratio of one-to-one (1:1)) due to the fill or structure.
 - i. The excavation shall take place in the floodplain and in the same immediate watershed in which the authorized fill or structure is located.
 - ii. Under certain circumstances, the excavation may be allowed to take place outside, but adjacent to, the floodplain provided that the excavated volume meets all of the following criteria:
 - [a] Shall be below the regulatory flood elevation.
 - [b] Shall be in the same immediate watershed in which the authorized fill or structure is located.
 - [c] Shall be accessible to the regulatory floodwater.
 - [d] Shall not be subject to ponding when not inundated by flood water.
 - [e] Shall not be refilled.
 - iii. The fill or structure shall not obstruct a drainage way leading to the floodplain.
 - iv. The fill or structure shall be of a material deemed stable enough to remain firm and in place during periods of flooding and shall include provisions to protect adjacent property owners against any increased runoff or drainage resulting from its placement.
 - v. Plans depicting the areas to be excavated and filled shall be submitted prior to the actual start of construction or any site work; once site work is complete, but before the actual start of construction, the applicant shall provide to the Floodplain Administrator a certified survey of the excavation and fill sites demonstrating the fill and excavation comply with [Section 5.32\(D\) Provisions for Flood Hazard Reduction](#).

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2. *Specific Standards:* In all Special Flood Hazard Areas, the following provisions shall be required.
 - a. **Structure Protection:** In addition to the requirements of *Section 5.32(D)(1): General Standards*, all structures to be located in the Special Flood Hazard Area shall be protected from flood damage below the Flood Protection Grade. This structure protection requirement applies to each of the following situations:
 - i. Construction or placement of any new structure having a floor area greater than 400 square feet.
 - ii. Structural alterations made to:
 - [a] An existing (i.e. previously unaltered) structure, the cost of which equals or exceeds fifty percent (50%) of the value of the pre-altered structure, excluding the value of the lot.
 - [b] Any previously altered structure.
 - iii. Reconstruction or repairs made to a damaged structure that are valued at more than fifty percent (50%) of the market value of the structure, excluding the value of the lot, before damaged occurred.
 - iv. Installing a travel trailer or recreational vehicle on a site for more than 180 days.
 - v. Installing a manufactured home on a new site, or a new manufactured home on an existing site. The Floodplain Standards do not apply to returning the existing manufactured home to the same site it lawfully occupied before it was removed to avoid flood damage.
 - vi. Reconstruction or repairs made to a repetitive loss structure.
 - b. **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 Flood Protection Grade (i.e. two (2) 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 5.32(D)(2)(d): Elevated Structures*.
 - c. **Nonresidential Construction:** New construction or substantial improvement of any commercial, industrial, or nonresidential structure (or manufactured home) shall have the lowest floor, including basement, elevated to or above the Flood Protection Grade (i.e. two (2) feet above the base flood elevation). Structures located in all “A Zones” may be flood-proofed in lieu of being elevated if done in accordance with the following:
 - i. A registered professional engineer or licensed architect shall certify that the structure has been designed so that below the Flood Protection Grade, the structure and attendant utility facilities are watertight and capable of resisting the effects of the regulatory flood. The 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 Floodplain Administrator.
 - ii. Flood-proofing measures shall be operable without human intervention and without an outside source of electricity.

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- d. Elevated Structures: New construction or substantial improvements of elevated structures that include fully enclosed areas formed by foundation and other exterior walls below the base flood elevations 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.
 - i. Designs for complying with this requirement shall either be certified by a registered professional engineer or licensed architect or meet all of the following minimum criteria.
 - [a] Provide a minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding.
 - [b] The bottom of all openings shall be no higher than one (1) foot above foundation interior grade, which shall be equal to in elevation or higher than the exterior foundation grade.
 - [c] Openings may be equipped with screens, louvers, valves or other coverings or devices provided they allow 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 (e.g. stairway or elevator).
 - [e] The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.
 - [f] Where elevation requirements exceed six (6) feet above the highest adjacent grade, a copy of the legally recorded deed restriction prohibiting the conversion of the area below the lowest floor to a use or dimension contrary to the structure's originally approved design, shall be presented as a condition of issuance of the final Certificate of Occupancy.
- e. Structures Constructed on Fill: A residential or nonresidential structure may be constructed on a permanent land fill in accordance with the following:
 - i. The fill shall be placed in layers no greater than one (1) foot deep before compacting to ninety-five percent (95%) of the maximum density obtainable with the Standard Proctor Test method.
 - ii. The fill should extend at least ten (10) feet beyond the foundation of the structure before sloping below the flood protection grade.
 - iii. 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 three (3) horizontal to one (1) vertical.
 - iv. The fill shall not adversely affect the flow of surface drainage from or onto neighboring properties.
 - v. The top of the lowest floor including basements shall be at or above the flood protection grade.

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- f. Standards for Structures Constructed with a Crawlspace: A residential or nonresidential structure may be constructed with a crawlspace located below the flood protection grade provided that all of the following conditions are met.
 - i. The structure shall 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.
 - ii. Any enclosed area below the flood protection grade shall have openings that equalize hydrostatic pressures by allowing for the automatic entry and exit of floodwaters. A minimum of one (1) opening on each wall having a total net area of not less than one (1) square inch for every one (1) square foot of enclosed area. The bottom of the openings shall be no more than one (1) foot above grade.
 - iii. The interior grade of the crawlspace shall be at or above the base flood elevation.
 - iv. The interior height of the crawlspace measured from the interior grade of the crawlspace to the top of the foundation wall shall not exceed four (4) feet at any point.
 - v. An adequate drainage system shall be installed to remove floodwaters from the interior area of the crawlspace within a reasonable period of time after a flood event.
 - vi. Portions of the building below the flood protection grade shall be constructed with materials resistant to flood damage.
 - vii. Utility systems within the crawlspace shall be elevated above the flood protection grade.
- g. 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 shall meet one (1) of the following requirements:
 - i. The manufactured home shall be elevated on a permanent foundation such that the lowest floor shall be at or above the flood protection grade 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:
 - [a] Outside a manufactured home park or subdivision.
 - [b] In a new manufactured home park or subdivision.
 - [c] In an expansion to an existing manufactured home park or subdivision.
 - [d] In an existing manufactured home park or subdivision on which a manufactured home has incurred “substantial damage” as a result of a flood.
 - ii. 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 thirty-six (36) inches in height above grade, and be 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 in an existing manufactured home park or subdivision that has not been substantially damaged by a flood.
 - iii. Recreational vehicles placed on a site shall either:
 - [a] Be on site for less than 180 days; and
 - [b] 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
 - [c] Meet the requirements for “manufactured homes” as stated earlier in [Section 5.32\(D\)\(2\)\(g\): Standards for Manufactured Homes and Recreational Vehicles](#).

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3. *Critical Facility*: Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area. Construction of new critical facilities shall be permissible within the Special Flood Hazard Area if no feasible alternative site is available. Critical facilities constructed within the Special Flood Hazard Area shall have the lowest flood elevated to or above the flood protection grade at the site. Floodproofing and sealing measures shall be taken to ensure that toxic substances shall not be displaced by or released into floodwaters. Access routes elevated to or above the flood protection grade shall be provided to all critical facilities to the extent possible.
4. *Standards for Identified Floodways*: Located within Special Flood Hazard Areas, established in [Section 5.32\(B\)\(2\): Basis for Establishing Regulatory Flood Data](#), are areas designated as floodways. The floodway is an extremely hazardous area due to the velocity of floodwaters, which carry debris, potential projectiles, and has erosion potential.
 - a. If the site is in an identified floodway, 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 and apply for a Permit for Construction in a Floodway. 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 a Floodway from the Indiana Department of Natural Resources. Please note that if fill is needed to elevate an addition above the existing grade, prior approval for the fill is required from the Indiana Department of Natural Resources.)
 - b. The Floodplain Administrator shall take no action until a Permit for Construction in a Floodway (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 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 5.32\(D\): Provisions for Flood Hazard Reduction](#) 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, the City's more restrictive regulations (if any) shall take precedence.
 - c. No development shall be allowed which, acting alone or in combination with existing or future development, will increase the regulatory flood more than fourteen-hundredths (0.14) of one (1) foot; and
 - d. For all projects involving channel modifications or fill (including levees) the City shall submit the data and request that the Federal Emergency Management Agency revise the regulatory flood data.
5. *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 5.32\(D\): Provisions for Flood Hazard Reduction](#) 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 flood protection grade.

6. *Standards for Special Flood Hazard Areas Without Established Base Flood Elevation and/or Floodways/Fringes:*
 - a. Drainage area upstream of the site is greater than one (1) square mile:
 - i. 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 (1) 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.
 - ii. The Floodplain Administrator shall take no action until either a Permit for Construction in a Floodway or a floodplain analysis/regulatory assessment citing the 100-year flood elevation and the recommended Flood Protection Grade has been received from the Indiana Department of Natural Resources.
 - iii. Once the Floodplain Administrator has received the Permit for Construction in a Floodway or floodplain analysis/regulatory assessment from the Indiana Department of Natural Resources approving the proposed development, a Floodplain Development Permit shall 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 5.32(D): Provisions for Flood Hazard Reduction* have been met.
 - b. Drainage area upstream of the site is less than one (1) square mile:
 - i. 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 (1) square mile, the Floodplain Administrator shall require the applicant to provide an engineering analysis showing the limits of the floodway, fringe and 100-year flood elevation for the site.
 - ii. Upon receipt, the Floodplain Administrator shall issue the local Floodplain Development Permit, provided the provisions contained in *Section 5.32(D): Provisions for Flood Hazard Reduction* have been met.
 - c. 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 fourteen-hundredths (0.14) of one (1) foot, and shall not increase flood damages or potential flood damages.