

9.0 FLOODPLAIN GUIDELINES

9.1 General Standards

The following standards apply to all developments in Special Flood Hazard Areas, regardless of the type of proposed development or the Risk Zone of the proposed site:

- (1) All new and substantial construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- (2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
- (3) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;
- (4) All critical facilities constructed or substantially improved in Special Flood Hazard Areas (SFHA) must be constructed or modified to exceed 500-year flood protection standards or located outside the SFHA;
- (5) The placement or construction of all new structures must be in full compliance with the provisions of this Code;
- (6) For the purposes of this Code, all mixed-use structures are subject to the more stringent requirements of residential structures;
- (7) A substantial improvement or substantial damage to an existing structure triggers a requirement to bring the entire structure into full compliance with the provisions of this Code. The existing structure, as well as any reconstruction, rehabilitation, addition, or other improvement, must meet the standards of new construction in this Code;
- (8) Any improvement to an existing structure that is less than a substantial improvement requires the improvement, but not the existing structure, to be in full compliance with the provisions of this Code;
- (9) All manufactured homes to be placed within a Special Flood Hazard Area on a community's FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces. Screw augers or expanding anchors will not satisfy the requirement of this provision;
- (10) The design or location of electrical, heating, ventilation, plumbing, and air conditioning equipment for new structures, or for any improvements to an

existing structure, must be elevated one (1) foot above the Base Flood Elevation (BFE); (Ord. No. 10:099, § 1, 01-18-2011)

- (11) The design of all new and replacement water supply systems must minimize or eliminate infiltration of floodwaters into the system during base flood events;
- (12) The design of all new and replacement sanitary sewage systems must minimize or eliminate infiltration of floodwaters into the system during flooding events, and must prevent sewage discharge from the systems into floodwaters;
- (13) The placement of on-site waste disposal systems must avoid impairment to, or contamination from, the disposal system during base flood events;
- (14) Construction of basement foundations in any Special Flood Hazard Area is prohibited;
- (15) New construction and substantial improvements, with fully enclosed areas (such as garages and crawlspaces) below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are below the base flood elevation shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
 - (a) A minimum of two (2) openings on separate walls having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided;
 - (b) The bottom of all openings shall be no higher than one (1) foot above grade;
 - (c) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- (16) The placement of recreational vehicles (RV) in Special Flood Hazard Areas must either:
 - (a) Be temporary, as demonstrated by the RV being fully licensed, being on wheels or a jacking system, attached to the site only by quick disconnect type utilities and security devices, having no permanently attached additions, and being immobile for no more than 180 consecutive days; or else
 - (b) Meet all provisions of this Code applicable to manufactured home structures.
- (17) All proposals for the development of a residential subdivision, commercial business park or manufactured home park/subdivision must have public utilities

and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage;

- (18) All proposals for the development of a residential subdivision, commercial business park or a manufactured home park/subdivision must include an adequate drainage plan to reduce exposure to flood hazards; and,
- (19) All proposals for the development of a commercial business park or a manufactured home park/subdivision must include an adequate evacuation plan for the escape of citizens from affected nonresidential structures during flooding events.
- (20) A minimum of a ten (10) foot buffer shall be placed between any structure and the floodway.
- (21) The cost of any reconstruction, remodeling, addition or improvement to a structure in a Special Flood Hazard Area in the preceding three (3) years shall be considered as part of the current improvement costs in the substantial improvement determination, unless the specific improvements are otherwise excluded by definition. (Ord. No. 11:013, §1, 02-15-2011)

9.2 RISK ZONE SPECIFIC STANDARDS

In addition to the General Standards, the following standards apply to specific development types in specific Risk Zones. Risk Zones listed in this Code that do not appear on the current FIRM are not applicable.

- (1) **In AE Risk Zones:** Special Flood Hazard Areas with base floods determined
 - (a) For Residential Structures in Zone AE:
 1. For all new residential structures, the top surface of the lowest floor must have an elevation (1 foot or more) above the published BFE. This elevation must be documented on an Elevation Certificate properly completed by a Professional Engineer ~~or Surveyor, or Architect~~ licensed to practice in the State of Arkansas.
 2. For all substantial improvements or substantial damage to existing residential structures, the entire structure becomes subject to the requirements of a new residential structure.
 3. For any reconstruction, rehabilitation, addition, or other improvement to an existing residential structure that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new residential structure.

(b) For Nonresidential Structures in Zone AE:

1. All new commercial, industrial or other nonresidential structures must either:
 - a. have the lowest floor (including basement) elevated (1 foot or more) above the base flood level or
 - b. be floodproofed such that, together with attendant utility and sanitary facilities, be designed so that below (an elevation of 2 feet above) the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. (Ord. No. 11:059, §1, 09-20-2011)
 - c. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify on a Floodproofing Certificate that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator.
2. For all substantial improvements or substantial damage to existing commercial, industrial or other nonresidential structures the entire structure becomes subject to the requirements of a new nonresidential structure.
3. For any reconstruction, rehabilitation, addition, or other improvement to an existing nonresidential structure that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new nonresidential structure.

(c) For Manufactured Homes in Zone AE:

1. All manufactured homes that are placed or substantially improved on sites:
 - a. outside of 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, or
 - d. in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the

manufactured home is elevated (1 foot or more) above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

2. Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision on the community's FIRM that are not subject to the provisions of paragraph (1.) of this section be elevated so that either:
 - a. the lowest floor of the manufactured home is (1 foot or more) above the base flood elevation, or
 - b. the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
3. For all substantial improvements or substantial damage to existing manufactured home, the entire structure becomes subject to the requirements of a new manufactured home.
4. For any reconstruction, rehabilitation, addition, or other improvement to an existing manufactured home that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new manufactured home.

~~(d) Where FEMA has not established a regulatory floodway in Zone AE, no Floodplain Development Permit may be issued unless a detailed engineering analysis is submitted along with the application that demonstrates the increase in base floodwater elevation due to the proposed development and all cumulative developments since the publication of the current FIRM will be less than 1 foot.~~

When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other developments (including fill) shall be permitted within Zones AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more one (1) foot at any point within the community.

- (2) **Floodways** - High risk areas of stream channel and adjacent floodplain
 - (a) Developments in regulatory floodways are prohibited, unless:

1. A No-Rise Certificate, signed and stamped by a Professional Engineer licensed to practice in the State of Arkansas, is submitted to demonstrate through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed development would not result in any increase in flood levels within the community during the occurrence of a base flood event; or
 2. All requirements of 44 CFR §65.12 are first met.
- (b) No Manufactured Home may be placed in a regulatory floodway, regardless of elevation height, anchoring methods, or No-Rise Certification.
- (3) **In AH or AO Risk Zones:** Special Flood Hazard Areas of shallow flooding
- (a) For Residential Structures in Zones AH or AO:
1. All new residential structures must be constructed with the top surface of the lowest floor elevated (1 feet or more) above the published BFE, or (2 feet or more) above the highest adjacent grade in addition to the depth number specified (at least 2 feet if no depth number is specified) on the community's FIRM. This elevation must be documented on an Elevation Certificate properly completed by a Professional Engineer ~~or Surveyor~~ ~~or Architect~~ licensed to practice in the State of Arkansas.
 2. For all substantial improvements or substantial damage to existing residential structures the entire structure becomes subject to the requirements of a new residential structure.
 3. For any reconstruction, rehabilitation, addition, or other improvement to an existing residential structure that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new residential structure
- (b) For Nonresidential Structures in Zones AH or AO:
1. All new commercial, industrial or other nonresidential structure must either:
 - a. have the top surface of the lowest floor elevated (1 feet or more) above the published BFE, or (2 feet or more) above the highest adjacent grade in addition to the depth number specified (at least 2 feet if no depth number is specified) on the community's FIRM, with documentation on an Elevation Certificate properly completed by a Professional Engineer ~~or Surveyor~~ ~~or Architect~~ licensed to practice in the State of Arkansas; or

- b. be floodproofed such that the structure, together with attendant utility and sanitary facilities be designed so that below (2 feet or more) above the published BFE in Zone AH, or (2 feet or more) above the base specified flood depth in an AO Zone, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy. (Ord. No. 11:059, § 1, 09-20-2011)
 2. For all substantial improvements or substantial damage to existing commercial, industrial or other nonresidential structures the entire structure becomes subject to the requirements of a new nonresidential structure.
 3. For any reconstruction, rehabilitation, addition, or other improvement to an existing nonresidential structure that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new nonresidential structure.
- (c) For Manufactured Homes in Zones AH or AO:
 1. All manufactured homes that are placed or substantially improved on sites:
 - a. outside of 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, or
 - d. in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated (1 feet or more) above the published BFE, or (2 feet or more) above the highest adjacent grade in addition to the depth number specified (at least 2 feet if no depth number is specified) on the community's FIRM, and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
 2. Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision on the community's FIRM that are not subject to the provisions of paragraph 1. of this section be elevated so that either:
 - a. the lowest floor of the manufactured home meets the elevation standard of paragraph 1., or

- b. the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
 - 3. For all substantial improvements or substantial damage to existing manufactured home, the entire structure becomes subject to the requirements of a new manufactured home.
 - 4. For any reconstruction, rehabilitation, addition, or other improvement to an existing manufactured home that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new manufactured home.
- (d) Where FEMA has not established a regulatory floodway in Zones AH or AO, no Floodplain Development Permit may be issued unless a detailed engineering analysis is submitted along with the application that demonstrates the increase in base floodwater elevation due to the proposed development and all cumulative developments since the publication of the current FIRM will be less than 1 foot.
- (e) Require adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.
- (4) **In "A" Risk Zones:** Special Flood Hazard Areas with no base flood elevations determined
 - (a) In Zone A, The applicant or the applicant's agent must determine a base flood elevation prior to construction. The BFE will be based on a source or method approved by the local Floodplain Administrator.
 - (b) For Residential Structures in Zone A:
 - 1. For all new residential structures, the top surface of the lowest floor must have an elevation (1 feet or more) above the BFE. This elevation must be documented on an Elevation Certificate properly completed by a Professional Engineer ~~or~~ Surveyor ~~or~~ ~~Architect~~ licensed to practice in the State of Arkansas.
 - 2. For all substantial improvements or substantial damage to existing residential structures, the entire structure becomes subject to the requirements of a new residential structure.
 - 3. For any reconstruction, rehabilitation, addition, or other improvement to an existing residential structure that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new residential structure.

(c) For Nonresidential Structures in Zone A:

1. All new commercial, industrial or other nonresidential structures must either:
 - a. have the lowest floor (including basement) elevated (1 foot or more) above the base flood level or
 - b. be floodproofed such that, together with attendant utility and sanitary facilities, be designed so that below (an elevation of 2 feet above)the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. (Ord. No. 11:059, § 1, 09-20-2011)
 - c. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify on a Floodproofing Certificate that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator.
2. For all substantial improvements or substantial damage to existing commercial, industrial or other nonresidential structures the entire structure becomes subject to the requirements of a new nonresidential structure.
3. For any reconstruction, rehabilitation, addition, or other improvement to an existing nonresidential structure that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new nonresidential structure.

(d) For Manufactured Homes in Zone A:

1. All manufactured homes that are placed or substantially improved on sites:
 - a. outside of 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, or
 - d. in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the

manufactured home is elevated (1 foot or more) above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

2. Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision on the community's FIRM that are not subject to the provisions of paragraph (1.) of this section be elevated so that either:
 - a. the lowest floor of the manufactured home is (1 foot or more) above the base flood elevation, or
 - b. the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
 3. For all substantial improvements or substantial damage to existing manufactured home, the entire structure becomes subject to the requirements of a new manufactured home.
 4. For any reconstruction, rehabilitation, addition, or other improvement to an existing manufactured home that is less than a substantial improvement, only the improved area, but not the entire structure, becomes subject to the requirements of a new manufactured home.
- (e) Base flood elevation data and a regulatory floodway, utilizing accepted engineering practices, shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or 5 acres, whichever is lesser, if not otherwise provided.