

CHAPTER 5

FLOOD HAZARD REDUCTION

SECTION:

12-5-1 : General Standards

12-5-2: Specific Standards

12-5-3: Floodways

12-5-1 : **GENERAL STANDARDS:** In all areas of special flood hazard, the following standards are required:

A. Anchoring:

1. New Construction: All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
2. Manufactured Homes: All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over the top or frame ties to ground anchors (reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques).

B. Construction Materials And Methods:

1. Materials: All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
2. Methods: All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
3. Service Facilities: Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

C. Utilities:

1. Water Supply Systems: All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;
2. Sewage Systems: New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters; and
3. Waste Disposal Systems: On site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

D. Subdivision Proposals:

1. Minimizing Flood Damage: All subdivision proposals shall be consistent with the need to minimize flood damage;
2. Public Utilities: All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
3. Drainage: All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and
4. Elevation Data: Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least fifty (50) lots or five (5) acres (whichever is less).

- E. Review Of Building Permits: Where elevation data is not available either through the flood insurance study or from another authoritative source (subsection 12-4-3B of this title), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet (2') above grade in these zones may result in higher insurance rates. (Ord. 87-3, 3-23-1987)

12-5-2: **SPECIFIC STANDARDS:** In all areas of special flood hazard where base flood elevation data has been provided as set forth in section 12-3-2 or subsection 12-4-3B of this title, the following provisions are required:

A. Residential Construction:

1. **Lowest Floor:** New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above base flood elevation.
2. **Enclosed Areas Below Lowest Floor:** Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or 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 must meet or exceed the following minimum criteria:
 - a. **Openings Required:** A minimum of two (2) openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
 - b. **Height Of Openings:** The bottom of all openings shall be no higher than one foot (1 ') above grade.
 - c. **Coverings:** Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

B. **Nonresidential Construction:** New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

1. **Floodproofing:** Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
2. **Structural Components:** Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

3. Certification: Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in subsection 12-4-3C2 of this title;
 4. Elevated Structures: Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in subsection A2 of this section.
 5. Insurance Premiums: Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot (1 ') below the floodproofing level (e.g., a building constructed to the base flood level will be rated as 1 foot below that level).
- C. Manufactured Homes: All manufactured homes to be placed or substantially improved within zones A1-30, AH, and AE shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at or above the base flood elevation and be securely anchored to an adequately anchored foundation system in accordance with the provisions of subsection 12-5-1 A2 of this chapter. (Ord. 87-3, 3-23-1987)

12-5-3: **FLOODWAYS:** Located within areas of special flood hazard established in section 12-3-2 of this chapter are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- A. Encroachments: Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- B. Compliance With Chapter: If subsection A of this section is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this chapter. (Ord. 87-3, 3-23-1987)