

7.5 Flood Damage Prevention

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7.5.1 Purpose

(A) The Flood Hazard Area of the Town is subject to periodic inundation that could result in loss of life and property, hazards to public health and safety, disruption of commerce and governmental services, damage to and disruption of public utilities, 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. These losses and hazards are caused by the cumulative effect of obstructions in floodplains, which increase flood heights and velocities, and by the occupancy in flood-prone areas by uses that are vulnerable to floods, or hazardous to other properties, because they are inadequately elevated, flood proofed, or otherwise protected from flood damages.

Therefore, the regulations set forth in this section are designed to:

- (1)** Restrict or prohibit uses that are dangerous to health, safety, and property due to water or erosion or in flood heights or velocities;
- (2)** Require that uses that are vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- (3)** Control the alteration of natural floodplains, stream channels, and natural protective barriers that accommodate and restrain floodwaters;
- (4)** Prevent or control filling, grading, dredging, and other development that may increase erosion or flood damage;
- (5)** Prevent or regulate the construction of flood barriers that will unnaturally divert floodwaters or that may increase flood hazards to other lands;
- (6)** To ensure that potential homebuyers are notified that property is in a flood-prone area.

(B) The degree of flood protection required by this section is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This section does not imply that land outside the Flood Hazard Area will be free from flooding or flood damages. Neither shall this section create liability on the part of the Town or by any officer or employee thereof for any flood damages that result from reliance on this section or any administrative decision lawfully made hereunder.

(C) In the interpretation and application of this section, all provisions shall be considered as minimum requirements, shall be liberally construed in favor of the Town, and shall be deemed neither to limit nor repeal any other powers granted to the Town under state statutes.

7.5.2 Applicability

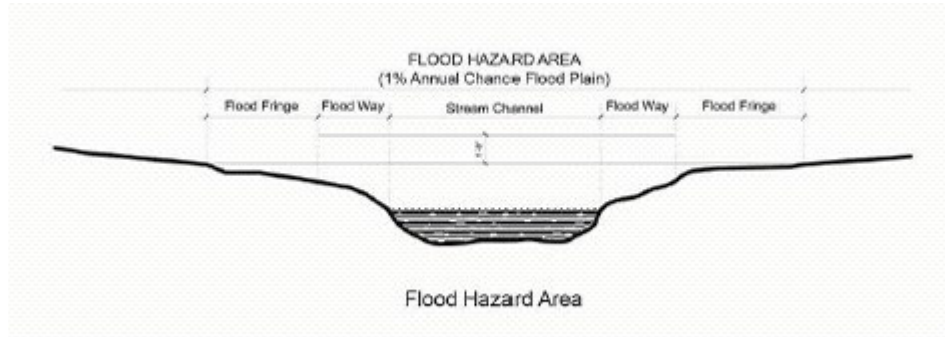
(A) Purpose

This section shall apply to all areas of flood hazard including one percent (1%) annual chance floodplain within the jurisdiction of this Ordinance, and all development in and near such areas shall comply with the requirements of this section. Areas of one percent (1%) annual chance floodplain include those Special Flood Hazard Areas and Future Conditions Flood Hazard Areas identified by:

- (1)** The Federal Emergency Management Agency (FEMA) or produced under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Hazard Boundary Map (FHBM) or Flood Insurance Study (FIS) and its accompanying flood maps such as the Flood Insurance Rate Map(s) (FIRM) and/or the Flood Boundary

Floodway Map(s) (FBFM), for Wake County dated May 2, 2006, which, are adopted by reference and declared to be a part of this ordinance. The Special Flood Hazard Areas also include those defined through standard engineering analysis for private developments or by governmental agencies, but which have not yet been incorporated in the FIRM

- (2) Residential development that contains a significant watercourse that has a contributory drainage area of fifty (50) acres or greater shall require the applicant to provide a signed and sealed engineered study prepared by a qualified professional that determines the extent of flooding limits experienced by the one percent (1%) annual chance flood event.



(B) Exemptions

- (1) All new residential construction and substantial residential improvements proposed on a parcel of land that has no buildable area outside the Special Flood Hazard Area or Future Conditions Flood Hazard Area, and that was recorded prior to June 1978, shall be exempt from the requirements for residential construction set forth in this section, but shall be developed in strict accordance with the requirements for non-residential construction.
- (2) Residential subdivisions submitted for review prior to May 10, 2001, shall be exempted from the requirements prohibiting the platting of lands located within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas, provided the section complies with the requirements in place prior to May 10, 2001.
- (3) Site and/or subdivision plans submitted prior to May 10, 2001, shall be exempted from the special use permit for filling in the flood fringe portion of Special Flood Hazard Areas or Future Conditions Flood Hazard Areas.

7.5.3 Development Restrictions and Related Standards In and Near the Flood Hazard Area

(A) Establishment of Floodplain Development Permit

A Floodplain Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas determined in accordance with Section 7.5.2(A) of this ordinance.

(B) Development Restrictions

In general, no development is allowed in Special Flood Hazard Areas or Future Conditions Flood Hazard Areas unless one or more of the following are met:

- (1) A special use is approved;
- (2) The property/use is exempted from this requirement; and/or
- (3) The development is for roads, greenways, pedestrian crossings, park-related equipment, or public utilities and facilities such as waste water, gas, electrical, and water systems that are located and constructed to minimize flood damage.

Structures for pedestrian crossings (e.g., footbridges, etc.), playground equipment, and other similar items may be permitted if the applicant provides certification by a professional registered engineer, architect, or landscape architect that these encroachments will not result in any increase in flood levels during the base flood.

(C) Development Standards

No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this ordinance and other applicable regulations.

If development or encroachments are permitted, the following standards shall apply in Special Flood Hazard Areas and Future Conditions Flood Hazard Areas.

- (1) All new non-residential construction and substantial improvements to existing non-residential construction shall be:
 - (a) Anchored to prevent flotation, collapse, or lateral movement of the structure; and
 - (b) Constructed with materials and utility equipment resistant to flood damage; and
 - (c) Constructed by methods and practices that minimize flood damage.
- (2) All new and replacement electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and constructed to prevent water from entering or accumulating in or on the components.
- (3) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- (4) New and replacement sanitary sewer systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharges from the system into flood waters.
- (5) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (6) Nothing in this ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the regulatory flood protection elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this ordinance.
- (7) New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted in Special Flood Hazard Areas or Future Conditions Flood Hazard Areas, except by variance as specified in Section 3.20. A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a Special Flood Hazard Area or a Future Conditions Flood Hazard Area only if the structure or tank is either elevated or floodproofed to at least the regulatory flood protection elevation and certified according to Section 7.5.2(E)(3)(a) of this ordinance.

(D) Additional Development Standards and Restrictions for Areas with Established Base Flood Elevation Data

- (1) **Residential Construction**
 - (a) New construction of or substantial improvements to any residential structure shall be located outside Special Flood Hazard Areas and Future Conditions Flood Hazard Areas and shall have the lowest floor, including basement, elevated no lower than the

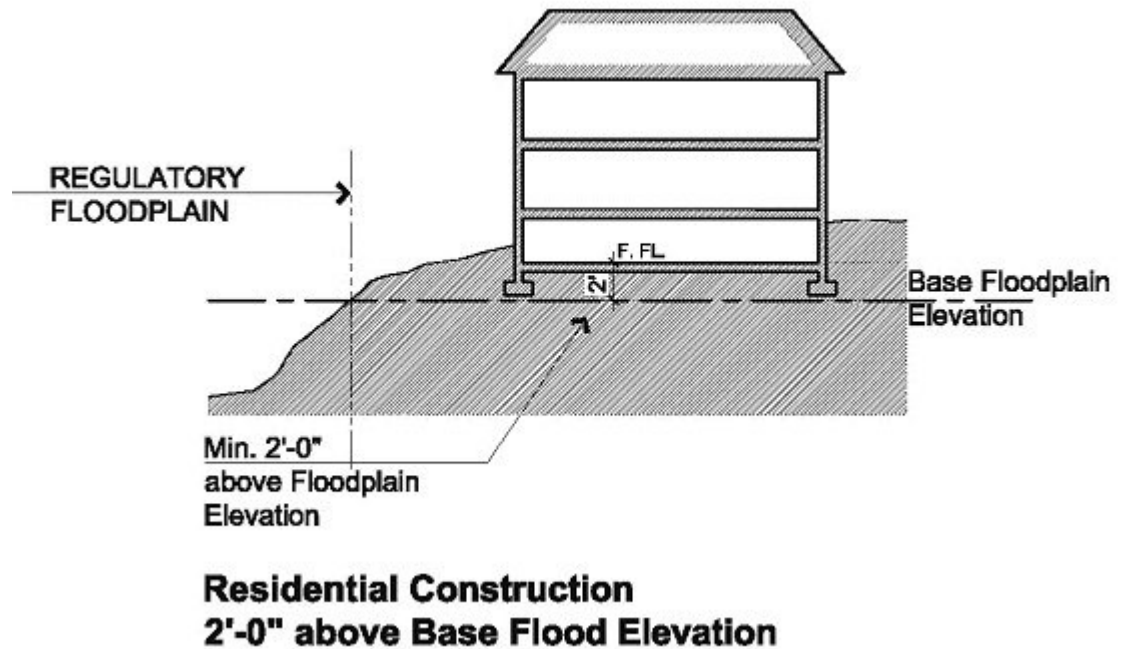
regulatory flood protection elevation as defined. "Substantial improvement" is defined in Chapter 12.

- (b) No proposed building lot that is wholly or partly subject to flooding shall be approved unless there is established on the final plat a line representing an actual contour as determined by field survey at elevation of the regulatory flood protection elevation as determined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, or by other studies approved by the Town. Such a line shall be known and identified on the site and/or subdivision plan and final plat as the "Building Restriction Floodline."
- (c) Placement of fill within the floodway, non-encroachment area, and/or flood fringe is prohibited unless such activities are authorized through a Special Use Permit.
- (d) Subdivisions submitted after May 10, 2001, may not plat house lots located within Special Flood Hazard Areas or Future Conditions Flood Hazard Areas unless one of the following exemptions are met:
 - 1. This requirement does not apply to subdivisions within Planned Developments provided that the master plan and/or conditions have exempted lots from this provision.
 - 2. The Town Council may allow these areas to be included in lots only when all of the following conditions are met:
 - a. The Special Flood Hazard Area or Future Conditions Flood Hazard Area impacts a limited section of the subdivision (i.e., less than ten percent (10%) of the total land area of the subdivision);
 - b. There is no other reason for the formation of a homeowner's association to retain ownership and maintenance responsibility for the Special Flood Hazard Area or Future Conditions Flood Hazard Area (e.g., covenant, other common areas);
 - c. The Special Flood Hazard Area or Future Conditions Flood Hazard Area is placed in a permanent maintenance easement prior to plat recordation.

(2) ***Non-Residential Construction Approved within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas***

- (a) New construction of or substantial improvements to any commercial, industrial, or other non-residential structure shall have the lowest floor, including basement, elevated no lower than the regulatory flood protection elevation as defined in Chapter 12, with attendant utilities and sanitary facilities flood-proofed.
- (b) For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on the exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must be certified by a registered Professional Engineer or architect, or must meet or exceed the following minimum criteria:
 - 1. 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 shall be provided;
 - 2. The bottom of all openings shall be no higher than one (1) foot above grade;
 - 3. Openings may be equipped with screens, louvers, or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters; and

4. A registered professional engineer or architect shall certify to the Town Manager that the standards of this section are satisfied.



(E) Application Requirements

- (1) Application for a Floodplain Development Permit shall be made to the floodplain administrator prior to any development activities located within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas. The following items shall be presented to the floodplain administrator to apply for a floodplain development permit:
 - (a) A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:
 1. the nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
 2. the boundary of the Special Flood Hazard Area or Future Conditions Flood Hazard Area as delineated on the FIRM or other flood map as determined in Section 7.5.2(A), or a statement that the entire lot is within the Special Flood Hazard Area or Future Conditions Flood Hazard Area;
 3. flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined in Section 7.5.2(A);
 4. the boundary of the floodway(s) or non-encroachment area(s) as determined in Section 7.5.2(A);
 5. the Base Flood Elevation (BFE) or Future Conditions Flood Elevation where provided as set forth in Section 7.5.2(A), Section 7.5.4;

6. the old and new location of any watercourse that will be altered or relocated as a result of proposed development;
 7. certification of the plot plan by a registered land surveyor or professional engineer.
- (b) Proposed elevation, and method thereof, of all development within a Special Flood Hazard Area or Future Conditions Flood Hazard Area including but not limited to:
1. Elevation in relation to mean sea level of the proposed reference level (including basement) of all structures;
 2. Elevation in relation to mean sea level to which any non-residential structure in Zone AE, A or X (Future) will be flood-proofed; and
 3. Elevation in relation to mean sea level to which any proposed utility systems will be elevated or floodproofed;
- (c) If floodproofing, a Floodproofing Certificate (*FEMA Form 81-65*) with supporting data and an operational plan that includes, but is not limited to, installation, exercise, and maintenance of floodproofing measures.
- (d) A Foundation Plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:
1. The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls);
 2. Openings to facilitate equalization of hydrostatic flood forces on walls in accordance with Section 7.5.3(D)(2)(b)1-4, when solid foundation perimeter walls are used in Zones A, AE and X (future);
- (e) Usage details of any enclosed areas below the regulatory flood protection elevation.
- (f) Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;
- (g) Copies of all other Local, State and Federal permits required prior to floodplain development permit issuance (Wetlands, Endangered Species, Erosion and Sedimentation Control, Mining, etc.)
- (h) Documentation for placement of Recreational Vehicles and/or Temporary Structures, when applicable, to ensure Section 7.5.3(G)(5)(b) ordinance are met.
- (i) A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.

(2) Permit Requirements

The Floodplain Development Permit shall include, but not be limited to:

- (a) A description of the development to be permitted under the floodplain development permit.
- (b) The Special Flood Hazard Area or Future Conditions Flood Hazard Area determination for the proposed development per available data specified in Section 7.5.3(A).

- (c) The regulatory flood protection elevation required for the reference level and all attendant utilities.
- (d) The regulatory flood protection elevation required for the protection of all public utilities.
- (e) All certification submittal requirements with timelines.
- (f) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse, as applicable.
- (g) The flood openings requirements, if in Zones A, AE or X (Future).

(3) Certification Requirements.

(a) Elevation Certificates

1. An Elevation Certificate (FEMA Form 81-31) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.
2. An Elevation Certificate (FEMA Form 81-31) is required after the reference level is established. Within seven (7) calendar days of establishment of the reference level elevation, it shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. Any work done within the seven (7) day calendar period and prior to submission of the certification shall be at the permit holder's risk. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being permitted to proceed. Failure to submit the certification or failure to make required corrections shall be cause to issue a stop-work order for the project.
3. A final as-built Elevation Certificate (FEMA Form 81-31) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy

(b) Floodproofing Certificate

If non-residential floodproofing is used to meet the regulatory flood protection elevation requirements, a Floodproofing Certificate (FEMA Form 81-65), with supporting data and an operational plan, is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to mean sea level. Floodproofing certification shall be prepared by or under the direct supervision of a professional engineer or architect

and certified by same. The floodplain administrator shall review the certificate data and plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.

- (c) If a manufactured home is placed within Zone A, AE or X (Future) and the elevation of the chassis is more than thirty-six (36) inches in height above grade, an engineered foundation certification is required per Section 7.5.7(A)(B) and (C)
- (d) If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.
- (e) *Certification Exemptions*

The following structures, if located within Zone A, AE or X (Future), are exempt from the elevation/floodproofing certification requirements specified in items (a) and (b) of this subsection:

1. recreational Vehicles meeting requirements of Section 7.5.4(F);
2. temporary Structures meeting requirements of Section 7.5.4(F); and
3. accessory Structures less than 150 square feet meeting requirements of Section 7.5.3(H).

(F) Additions/Improvements

(1) *Elevated Buildings*

Fully enclosed area, of new construction and substantially improved structures, which is below the lowest floor:

- (a) shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;
- (b) shall be constructed entirely of flood resistant materials below the regulatory flood protection elevation;
- (c) shall include, in Zones A, AE and X (Future), flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a qualified professional or meet or exceed the following minimum design criteria;
 1. a minimum of two (2) flood openings on different sides of each enclosed area subject to flooding;
 2. the total net area of all flood openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding;

3. if a building has more than one (1) enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
4. the bottom of all required flood openings shall be no higher than one (1) foot above the adjacent grade;
5. flood openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and
6. enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings as outlined above.

(G) Additions/Improvements

- (1) Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
 - (a) not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages and must not be any more non-conforming than the existing structure.
 - (b) a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
- (2) Additions to post-FIRM structures with no modifications to the existing structure other than a standard door in the common wall shall require only the addition to comply with the standards for new construction.
- (3) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
 - (a) not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction.
 - (b) a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
- (4) Where an independent perimeter load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and only the addition must comply with the standards for new construction.
- (5) **Recreational Vehicles**

Recreational vehicles shall either:

 - (a) be on site for fewer than one hundred and eighty (180) consecutive days and be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions); or
 - (b) meet all the requirements for new construction.

(6) Temporary Non-Residential Structures

Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the floodplain administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning

notification. The following information shall be submitted in writing to the floodplain administrator for review and written approval;

- (a) a specified time period for which the temporary use will be permitted. Time specified may not exceed three (3) months, renewable up to one (1) year;
- (b) the name, address, and phone number of the individual responsible for the removal of the temporary structure;
- (c) the time frame prior to the event at which a structure will be removed (i.e., minimum of seventy-two (72) hours before landfall of a hurricane or immediately upon flood warning notification);
- (d) a copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and
- (e) designation, accompanied by documentation, of a location outside the Special Flood Hazard Area or Future Conditions Flood Hazard Area, to which the temporary structure will be moved.

(H) Accessory Structures

When accessory structures (sheds, detached garages, etc.) are to be placed within a Special Flood Hazard Area or Future Conditions Flood Hazard Area, the following criteria shall be met:

- (1) Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);
- (2) Accessory structures shall not be temperature-controlled;
- (3) Accessory structures shall be designed to have low flood damage potential;
- (4) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
- (5) Accessory structures shall be firmly anchored in accordance with Section 7.5.4(c)(1);
- (6) All service facilities such as electrical shall be installed in accordance with Section 7.5.3(D)(2)(a);
- (7) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below regulatory flood protection elevation in conformance with Section 7.5.3(D)(2)(b)(1)-(4).

An accessory structure with a footprint less than one hundred and fifty (150) square feet that satisfies the criteria outlined above does not require an elevation or floodproofing certificate. Elevation or floodproofing certifications are required for all other accessory structures in accordance with Section 7.5.3(E)(3).

7.5.4 Limitations on Encroachments in Floodways and Non-Encroachment Areas

Floodways and non-encroachment areas, located within the Special Flood Hazard Area or Future Conditions Flood Hazard Areas, are extremely hazardous areas due to the velocity of flood waters that carry debris, potential projectiles, and the potential for erosion. Therefore, encroachments, including fill, in floodways or non-encroachment areas are permitted only in limited circumstances and only under the following restrictions:

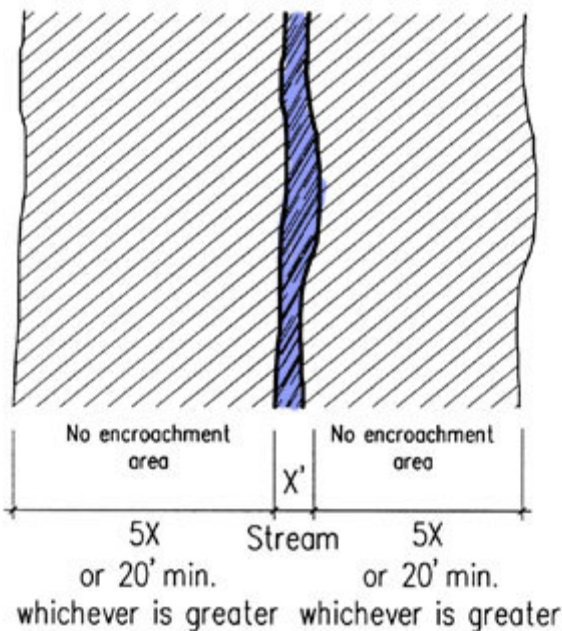
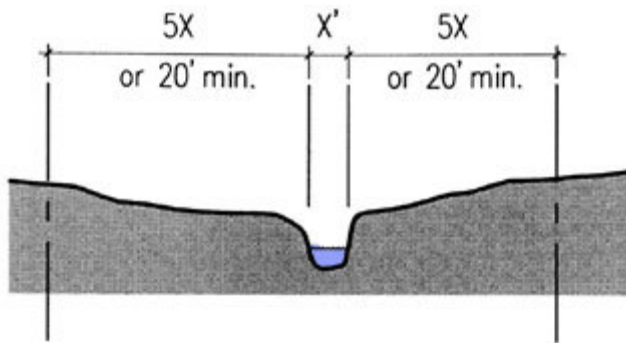
- (A) There shall be no encroachment, including fill, unless the applicant has received a Special Use Permit (see Section 3.8) or the use is permitted (see Section 7.5.3(A)). The applicant for a special use involving the floodway portion of a Special Flood Hazard Area or Future Conditions Flood

Hazard Area shall provide certification by a professional registered engineer, architect, or landscape architect that the encroachment will not result in any increase in flood levels during the discharge of the base flood or provide a Conditional Letter of Map Revision issued by the Federal Emergency Management Agency.

- (B) Once paragraph (A) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction requirements of this section.

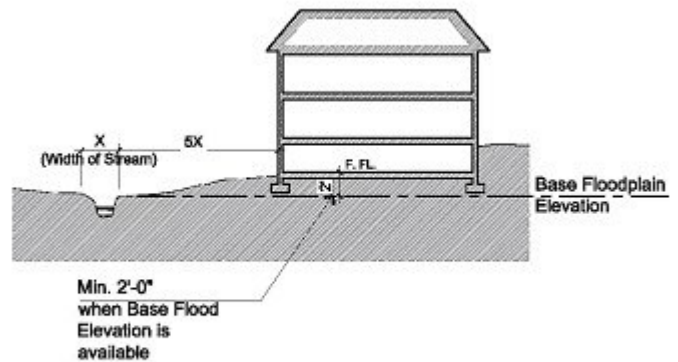
7.5.5 Standards for Streams without Established Base Flood Elevations

Located within the Flood Hazard Area are small streams where no base flood data has been provided or where no floodways have been identified. The following provisions apply within such areas:



Standards for Streams without Established Base Flood Elevations

- (A) No encroachments, including fill, new construction, substantial improvements, or new development, shall be permitted within a distance of the stream bank equal to five times the width of the stream at the top of the bank or twenty (20) feet each side from the top of the bank, whichever is greater, unless a special use is approved or the use is permitted.



New Construction near Streams

- (B) In cases where the streams lacking base flood data are USGS or County Soils Map streams, then the limitations upon encroachments shall apply to the entire area within the associated UTB's, or an area five times the width of the stream at the top of the bank, whichever is greater.
- (C) If paragraph (A) above is satisfied, and base flood elevation data is available from other sources, all new construction and substantial improvements within such areas shall comply with all applicable flood hazard ordinance provisions of this Section and shall be elevated or flood-proofed in accordance with elevations established under Section 7.5.2. When base flood elevation data is not available from a federal, state, or other source, the lowest floor, including basement, shall be elevated to or above the regulatory flood protection elevation as defined in Chapter 12.

Diagram of 7.5.5(C)
[Reserved]

7.5.6 Cross Drainage Area Standards and Restrictions

For any new proposed development subject to flooding which includes, but is not limited to, those lots along any significant watercourse, whether or not the stream or water course is enclosed with a pipe or culvert; the applicant shall make a determination of the crest elevation of the flood expected to be equaled or exceeded that has a one (1) percent chance of annual occurrence in accordance with generally accepted engineering practice, which is to be submitted with the seal and signature of a Professional Engineer to the Director of Engineering. Any new construction of, or substantial improvements (see Chapter 12, *Definitions*) to, any residential or non-residential structure shall comply with Section 7.5.3(C).

7.5.7 Special Requirements for Manufactured Homes

- (A) No manufactured home shall be placed in Special Flood Hazard Areas or Future Conditions Flood Hazard Areas, except when located within an existing manufactured home park. In existing manufactured home parks, all manufactured homes to be placed or substantially improved within Zones A1-30, AH and AE, as indicated on the Flood Insurance Rate Map, shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is no lower than the regulatory flood protection elevation as defined in Chapter 12 and shall be securely anchored to an adequate foundation system in accordance with the provisions of (e) below.
- (B) Manufactured homes may not be placed in the floodway.
- (C) All manufactured homes within Special Flood Hazard Areas or Future Conditions Flood Hazard Areas shall be anchored to resist flotation, collapse, or lateral movement in accordance with the Regulations for Mobile Homes and Modular Housing adopted by the Commissioner of Insurance pursuant to N.C. Gen. Stat. 143-15. Where the required elevation can be met by elevating the chassis no more than thirty-six (36) inches above grade at the site, the chassis shall be supported

by reinforced piers or other foundation of equivalent strength. When the elevation of the chassis is above thirty-six (36) inches in height an engineering certification is required.

7.5.8 Special Requirements for Development Proposals Requiring Site and/or Subdivision Plan Approval

For purposes of this section only, the boundaries of Special Flood Hazard Area or Future Conditions Flood Hazard Area for a subdivision or a discrete phase of a subdivision are established if all of the following conditions are met:

- (A) The subdivision is approved for construction through approval of a preliminary subdivision plan and all other applicable permits;
- (B) A substantial investment is made in constructing the subdivision.
- (C) In addition to satisfying the other requirements of this Ordinance, all proposals for subdivisions and site plans shall:
 - (1) Be consistent with the need to minimize flood damage;
 - (2) Have public utilities and facilities, such as wastewater, gas, electrical, and water systems, located and constructed so as to minimize flood damage;
 - (3) Have all proposed residential structures located outside the Special Flood Hazard Area or Future Conditions Flood Hazard Area, with the lowest floor, including basement, elevated at least two feet above the base flood elevation;
 - (4) Have all proposed non-residential structures located outside of the Special Flood Hazard Area or Future Conditions Flood Hazard Area, with the lowest floor, including basement, located at least two feet above the base flood elevation. (Note that an approved special use may permit structures in a flood fringe – see Section 3.12.3.)
 - (5) Have all drainage structures located within the Flood Hazard Area designed to accommodate the one percent (1%) annual chance flood without causing increased base flood elevations on properties other than that for which development approval is being requested;
 - (6) Shall provide base flood elevation data along with the subdivision plan or site plan, which is submitted to the Town for approval.

7.6 Nuisance and Hazard Control Standards

7.6.1 Purpose and Applicability

7.6.2 General Standards and Measures for Compliance

7.6.3 Performance Standards

7.6.4 Effects of Concurrent Operations on Different Properties

7.6.5 Determination of Violation of Performance Standards

7.6.1 Purpose and Applicability

This section is intended to ensure that industrial, research, and other business activities are established and maintained with proper appearance from streets and adjoining properties, and to ensure that such activities are good neighbors to adjoining properties by controlling the emission of noise, odors, glare, vibration, smoke, dust, liquid wastes, radiation, radioactivity, and similar pollutants. Accordingly, this section states the performance standards and conditions with which the Town expects the construction and operation of industrial, research, and other business activities to comply. These performance standards, like all other provisions of this Ordinance, are continuing obligations, and all industrial, research, and other business uses will be expected to operate in compliance with these standards. Any land use that fails to comply with these standards shall be in violation of this Ordinance.