

## STAFF REPORT

**DOCKET #** UDO-191  
**STAFF:** [Kirk Ericson](#)

### **REQUEST**

This UDO text amendment is proposed by City-County Planning and Inspections staff. It would revise chapters A, B, C, and D of the Unified Development Ordinances concerning flood damage prevention regulations to be consistent with current National Flood Insurance Program standards. Associated with this text amendment, the mapping of flood hazard areas is also being amended to reflect updates and revisions.

### **BACKGROUND**

Counties and municipalities across the state of North Carolina are required to adopt newly revised Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) as these maps become available. FEMA FIRMs are revised periodically to reflect changes to local floodplains which result from development or environmental changes in an area. Revised flood maps are to become effective for Forsyth County and its municipalities on January 2, 2009. In order for local governments to maintain eligibility for FEMA disaster assistance and to allow homeowners in these jurisdictions the opportunity to purchase flood insurance, updated FIRMs must be adopted by this time. FIRMs are adopted as a component of a jurisdiction's flood prevention ordinance.

Concurrent with the updating of the maps by FEMA, City-County staff has worked with the National Flood Insurance Program (NFIP) planner for North Carolina to incorporate the requirements of the revised state model flood prevention ordinance into our existing UDO framework.

### **ANALYSIS**

Staff has deleted the outdated existing definitions and ordinance language in the UDO relating to flood damage prevention and has included new definitions and ordinance language reflecting changes to the state model ordinance.

While specific terminology and the organizational structure of the ordinance has changed, only one substantive change has been made to the flood prevention component of the ordinance. Currently, the UDO requires structures built within the boundaries of the floodplain to be elevated at least one foot above the Base Flood Elevation (BFE). The BFE is the elevation which the water surface would rise in a Base Flood, or a flood having a one percent chance of being equaled or exceeded in any given year (also known as the one hundred year flood elevation). As recommended in the state model ordinance, the proposed ordinance recommends that structures be built at least two feet above the BFE. While an additional foot of building construction adds to the initial cost of development, it reduces the long-term cost of obtaining and maintaining flood insurance for a property. Also, the existing ordinance provision limiting fill in the floodway fringe to fifty percent of that area of a development has been retained in the new ordinance language.

NOTE: Items to be deleted are indicated with a ~~strikeout~~; items to be added are indicated with an underscore.  
UDO-191 November 2008

Revised maps of flood hazard areas will be adopted by reference with the adoption of this text amendment, as stated in Section B.2-1.6 of the attached ordinance.

Staff recommends adoption of the proposed text amendment so that Federal disaster assistance and flood insurance will remain available to the citizens of Forsyth County.

**RECOMMENDATION**

**APPROVAL**

**UDO-191**  
**AN ORDINANCE AMENDING**  
**CHAPTERS A, B, C, AND D OF THE *UNIFIED DEVELOPMENT ORDINANCES***  
**TO AMEND REGULATIONS CONCERNING FLOOD DAMAGE PREVENTION**

Be it ordained by the \_\_\_\_\_, North Carolina, that the *Unified Development Ordinances* is hereby amended as follows:

**Section 1.** Chapter A, Article II of the UDO is amended as follows:

## **Chapter A - Definitions Ordinance**

### **Article II – Definitions**

~~**BASE FLOOD.** A flood having a one percent (1%) chance of being equaled or exceeded in any given year. See also Flood, One Hundred Year.~~

~~**BASE FLOOD ELEVATION.** The elevation of the reach of the one hundred year flood waters.~~

~~**FLOOD BOUNDARY AND FLOODWAY MAP.** An official map on which the Federal Emergency Management Agency has delineated both the floodway and floodway fringe areas. Said maps also contain cross sectional information relevant to both the floodway and floodway fringe areas with data available in official reports supplied by the Federal Emergency Management Agency.~~

~~**FLOOD INSURANCE RATE MAP (FIRM).** An official map of Winston-Salem/Forsyth County on which the Federal Emergency Management Agency has delineated both the areas of special flood hazard and the risk premium zones applicable to the county.~~

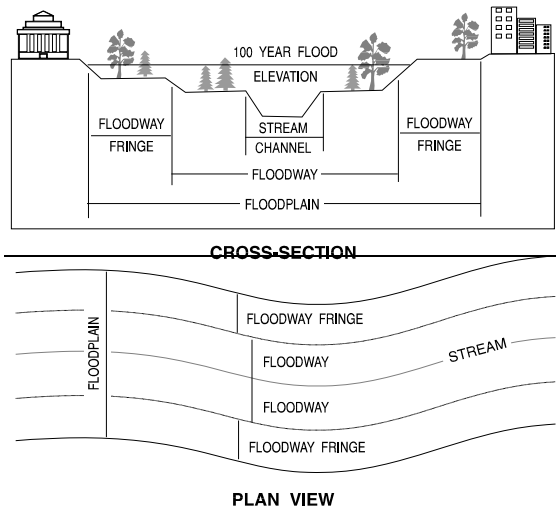
~~**FLOOD, ONE HUNDRED YEAR.** A flood predicted by the United States Army Corps of Engineers, the Soil Conservation Service of the United States Department of Agriculture, or the Federal Insurance Administration to be of the magnitude as may be expected to occur on an average of once every one hundred (100) years.~~

~~**FLOODPLAIN.** The channel and area abutting a watercourse, which would be covered with water during a one hundred year flood as designated by reports and data provided by the Federal Emergency Management Agency. Along the Yadkin River, the floodplain is indicated as the limit of the flood prone area on Forsyth County Land Records Information System maps.~~

~~**FLOODPROOFING.** Any structural or nonstructural addition, change, or adjustment to a structure for the prevention of flood damage to the structure and its contents, sanitary facilities, and utilities.~~

~~**FLOODWAY.** The portion of the channel and floodplain of a stream designated by Federal Emergency Management Agency reports and data as adequate to provide passage for the one hundred year flood, without increasing the elevation of that flood at any point by more than one foot.~~

~~**FLOODWAY FRINGE.** An area lying outside the floodway, but within the floodplain.~~



~~ONE HUNDRED YEAR FLOOD.~~ See Flood, One Hundred Year.

Section 2. Chapter B, Article II of the UDO is amended as follows:

## Chapter B - Zoning Ordinance

### Article II – Zoning Districts, *Official Zoning Maps*, and Uses

#### 2-3 APPLICATION OF DISTRICT REGULATIONS

##### 2-3.6 SUBDIVIDED ZONING LOTS WITH WRITTEN AGREEMENTS

When a zoning lot existing as of the effective date of this Ordinance is proposed to be subdivided into two or more zoning lots, the other requirements of the *Unified Development Ordinances* shall be applied to each of the subdivided lots, provided, however, that the residential density requirements of this Ordinance and the limits of floodway fringe encroachment provisions of Section ~~C.2-3.1(B)(3)(b)(i)~~ C.2-3.2(A) may be applied, in whole or in part, to any one or more of the subdivided lots and not to the other lot(s) when such original zoning lot is subdivided under the following conditions:

- (A) **Floodplain**  
The original zoning lot encompasses property with designated floodplain area per Section C.2.
- (B) **GMA**s  
The original zoning lot lies partially or completely within GMAs 1, 2, 3 or 4 as designated in *Legacy*.
- (C) **Allocation of Development Rights Between Seller and Purchaser**  
The owner of the original zoning lot and the purchaser(s) of a subdivided part have in writing allocated development rights between or among themselves concerning the development of the original zoning lot whereby a right, or any portion thereof, to develop

all, or any portion of, a subdivided part of the original zoning lot as permitted in this Ordinance is transferred to, or is retained by, the remaining portion of the original zoning lot. Development of each subdivided part pursuant to the terms of the writing shall meet or exceed the requirements of this Ordinance. The writing shall further provide that the allocation of development rights shall be appurtenant to and run with the land so benefited and have the effect of imposing a negative easement or restriction upon the servient land.

**(D) Director of Inspections Approval of Plat**

The writing constituting the reallocation of development rights must include, or be represented by, a plat illustrating the reallocation. To be effective, the writing and plat shall be reviewed for compliance with this Ordinance by the Director of Inspections, and if the writing and plat complies with this Ordinance, the Director of Inspections shall stamp his approval upon its face, and the writing and plat must then be recorded at the Forsyth County Register of Deeds. A violation of these requirements shall be a violation of this Ordinance and unlawful.

**Section 3.** Chapter B, Article III of the UDO is amended as follows:

**Chapter B - Zoning Ordinance**  
**Article III - Other Development Standards**

**3-1 DIMENSIONAL REQUIREMENTS**

**3-1.1 GENERAL REQUIREMENTS**

**(D) Subdivided Zoning Lots With Written Agreements**

When a zoning lot existing as of the effective date of this Ordinance is proposed to be subdivided into two or more zoning lots, the other requirements of the *Unified Development Ordinances* shall be applied to each of the subdivided lots, provided, however, that the residential density requirements and the limits of floodway fringe encroachment provisions of Section ~~C.2-3.1(B)(3)(b)(i)~~ C.2-3.2(A) may be applied, in whole or in part, to any one or more of the subdivided lots and not to the other lot(s) when such original zoning lot is subdivided under the following conditions:

- (1) Floodplain.** The original zoning lot encompasses property with designated floodplain area per Section C.2.
- (2) GMAs.** The original zoning lot lies partially or completely within GMAs 1, 2, 3 or 4, as designated in *Legacy*.
- (3) Allocation of Development Rights Between Seller and Purchaser.** The owner of the original zoning lot and the purchaser(s) of a subdivided part have in writing allocated development rights between or among themselves concerning the development of the original zoning lot whereby a right, or any portion thereof, to develop all, or any portion of, a subdivided part of the original zoning lot as permitted in this Ordinance is transferred to, or is retained by, the remaining portion of the original zoning lot. Development of each subdivided part pursuant to the terms of the writing shall meet or exceed the requirements of

this Ordinance. The writing shall further provide that the allocation of development rights shall be appurtenant to and run with the land so benefitted and have the effect of imposing a negative easement or restriction upon the servient land.

- (4) **Director of Inspections Approval of Plat.** The writing constituting the reallocation of development rights must include, or be represented by, a plat illustrating the reallocation. To be effective, the writing and plat shall be reviewed for compliance with this Ordinance by the Director of Inspections, and if the writing and plat complies with this Ordinance, the Director of Inspections shall stamp his approval upon its face, and the writing and plat must then be recorded at the Forsyth County Register of Deeds. A violation of these requirements shall be a violation of this Ordinance and unlawful.

**Section 4.** Chapter C, Article II of the UDO is amended as follows:

**THE EXISTING CHAPTER C, ARTICLE II OF THE UDO SHALL BE COMPLETELY DELETED AND REPLACED WITH THE FOLLOWING:**

## **Chapter C - Environmental Ordinance**

### **Article II - Floodway and Floodway Fringe Regulations**

#### **2-1 GENERAL**

##### **2-1.1 FINDINGS OF FACT**

- (A) The flood prone areas within the jurisdictions of Winston-Salem and Forsyth County are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of 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 prone areas of uses vulnerable to floods or other hazards.

##### **2-1.2 STATEMENT OF PURPOSE**

It is the purpose of this ordinance to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions within flood prone areas by provisions designed to:

- (A) Restrict or prohibit uses that are dangerous to health, safety, and property due to water or erosion hazards or that result in damaging increases in erosion, flood heights or 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, which are involved in the accommodation of floodwaters;
- (D) Control filling, grading, dredging, and all other development that may increase erosion or flood damage; and
- (E) Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands.

### **2-1.3 OBJECTIVES**

The objectives of this chapter are:

- (A) Protect human life, safety, and health;
- (B) Minimize expenditure of public money for costly flood control projects;
- (C) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (D) Minimize prolonged business losses and interruptions;
- (E) Minimize damage to public facilities and utilities (i.e. water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges) that are located in flood prone areas;
- (F) Help maintain a stable tax base by providing for the sound use and development of flood prone areas; and
- (G) Ensure that potential buyers are aware that property is in a Special Flood Hazard Area.

### **2-1.4 DEFINITIONS**

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in Chapter A, Article II (Definitions) or in common usage, and to give this ordinance its most reasonable application. In the event of conflict with Chapter A, Article II (Definitions), the definitions below shall control.

**Accessory Structure (Appurtenant Structure)** means a structure located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

**Addition (to an existing building)** means an extension or increase in the floor area or height of a building or structure.

**Appeal** means a request for a review of the Floodplain Administrator's interpretation of any provision of this ordinance.

**Area of Shallow Flooding** means a designated Zone AO on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one (1) to three (3) feet. These areas

are located where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

**Area of Special Flood Hazard** see Special Flood Hazard Area (SFHA)

**Base Flood** means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

**Base Flood Elevation (BFE)** means a determination of the water surface elevations of the base flood as published in the Flood Insurance Study. When the BFE has not been provided in a Special Flood Hazard Area, it may be obtained from engineering studies available from a Federal, State, or other source using FEMA approved engineering methodologies. This elevation, when combined with the Freeboard, establishes the Regulatory Flood Protection Elevation.

**Basement** means any area of the building having its floor subgrade (below ground level) on all sides.

**Building** see Structure.

**Chemical Storage Facility** means a building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.

**Development** means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

**Disposal** means, as defined in NCGS 130A-290(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

**Elevated Building** means a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

**Encroachment** means the advance or infringement of uses, fill, excavation, buildings, structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

**Existing Manufactured Home Park or Manufactured Home Subdivision** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before the initial effective date of the floodplain management regulations adopted by the community.

**Flood or Flooding** means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) The overflow of inland or tidal waters; and/or
- (2) The unusual and rapid accumulation or runoff of surface waters from any source.

**Flood Boundary and Floodway Map (FBFM)** means an official map of a community, issued by the Federal Emergency Management Agency, on which the Special Flood Hazard Areas and the



floodways are delineated. This official map is a supplement to and shall be used in conjunction with the Flood Insurance Rate Map (FIRM).

**Flood Hazard Boundary Map (FHBM)** means an official map of a community, issued by the Federal Emergency Management Agency, where the boundaries of the Special Flood Hazard Areas have been defined as Zone A.

**Flood Insurance** means the insurance coverage provided under the National Flood Insurance Program.

**Flood Insurance Rate Map (FIRM)** means an official map of a community, issued by the Federal Emergency Management Agency, on which both the Special Flood Hazard Areas and the risk premium zones applicable to the community are delineated.

**Flood Insurance Study (FIS)** means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the Federal Emergency Management Agency. The Flood Insurance Study report includes Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), if published.

**Flood Prone Area** see Floodplain

**Flood Zone** means a geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

**Floodplain** means any land area susceptible to being inundated by water from any source.

**Floodplain Administrator** is the individual appointed to administer and enforce the floodplain management regulations.

**Floodplain Development Permit** means any type of permit that is required in conformance with the provisions of this ordinance, prior to the commencement of any development activity.

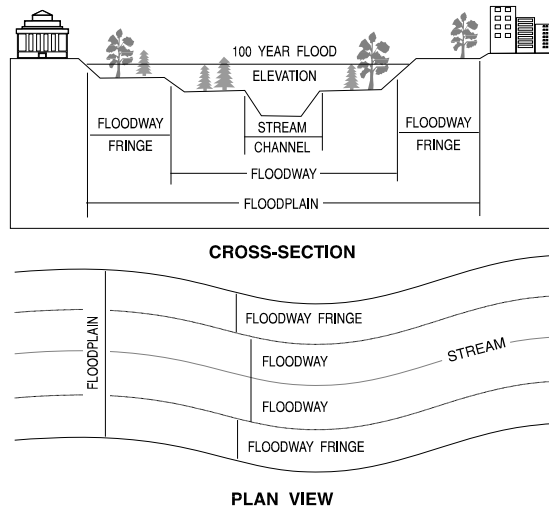
**Floodplain Management** means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain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

**Floodplain Management Regulations** means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power. This term describes Federal, State or local regulations, in any combination thereof, which provide standards for preventing and reducing flood loss and damage.

**Floodproofing** means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

**Floodway** means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

**Floodway Fringe** means an area lying outside the floodway, but within the floodplain.



**Freeboard** means the height added to the Base Flood Elevation (BFE) to account for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, blockage of bridge openings, and the hydrological effect of urbanization of the watershed. The Base Flood Elevation (BFE) plus the freeboard establishes the Regulatory Flood Protection Elevation.

**Functionally Dependent Facility** means a facility which cannot be used for its intended purpose unless it is located in close proximity to water, limited to a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.

**Highest Adjacent Grade (HAG)** means the highest natural elevation of the ground surface, prior to construction, immediately next to the proposed walls of the structure.

**Historic Structure** means any structure that is:

- (A) Listed individually in the National Register of Historic Places (a listing maintained by the US Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register;
- (B) certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (C) Individually listed on a local inventory of historic landmarks in communities with a Certified Local Government (CLG) Program; or
- (D) Certified as contributing to the historical significance of a historic district designated by a community with a Certified Local Government (CLG) Program.

Certified Local Government (CLG) Programs are approved by the US Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State Historic Preservation Officer as having met the requirements of the National Historic Preservation Act of 1966 as amended in 1980.

**Lowest Adjacent Grade (LAG)** means the elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

**Lowest Floor** means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in an area other than a basement area is not considered a building's lowest floor, provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

**Manufactured Home** means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term manufactured home does not include a recreational vehicle.

**Manufactured Home Park or Subdivision** means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

**Market Value** means the building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal; replacement cost depreciated for age of building and quality of construction (Actual Cash Value); or adjusted tax assessed values.

**Mean Sea Level** means, for purposes of this ordinance, the National Geodetic Vertical Datum (NGVD) as corrected in 1929, the North American Vertical Datum (NAVD) as corrected in 1988, or other vertical control datum used as a reference for establishing varying elevations within the floodplain, to which Base Flood Elevations (BFEs) shown on a FIRM are referenced. Refer to each FIRM panel to determine datum used.

**New Construction** means structures for which the start of construction commenced on or after the effective date of the initial floodplain management regulations and includes any subsequent improvements to such structures.

**Non-Encroachment Area** means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot as designated in the Flood Insurance Study report.

**One Hundred Year Flood** see **Special Flood Hazard Area (SFHA)**

**Post-FIRM** means construction or other development for which the start of construction occurred on or after the effective date of the initial Flood Insurance Rate Map.

**Pre-FIRM** means construction or other development for which the start of construction occurred before the effective date of the initial Flood Insurance Rate Map.

**Principally Above Ground** means that at least 51% of the actual cash value of the structure is above ground.

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

**Recreational Vehicle (RV)** means a vehicle, which is:

- (A) built on a single chassis;
- (B) 400 square feet or less when measured at the largest horizontal projection;
- (C) designed to be self-propelled or permanently towable by a light duty truck; and
- (D) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use.

**Reference Level** is the top of the lowest floor for structures within Special Flood Hazard Areas designated as Zone A1-A30, AE, A, A99 or AO.

**Regulatory Flood Protection Elevation** means the Base Flood Elevation plus the Freeboard. In Special Flood Hazard Areas where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus two (2) feet of freeboard. In Special Flood Hazard Areas where no BFE has been established, this elevation shall be at least two (2) feet above the highest adjacent grade.

**Remedy a Violation** means to bring the structure or other development into compliance with State and community floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

**Riverine** means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

**Salvage Yard** means any non-residential property used for the storage, collection, and/or recycling of any type of equipment, and including but not limited to vehicles, appliances and related machinery.

**Solid Waste Disposal Facility** means any facility involved in the disposal of solid waste, as defined in NCGS 130A-290(a)(35).

**Solid Waste Disposal Site** means, as defined in NCGS 130A-290(a)(36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

**Special Flood Hazard Area (SFHA)** means the land in the floodplain subject to a one percent (1%) or greater chance of being flooded in any given year, as determined in Section C.2-1.6 of this ordinance. The Special Flood Hazard Area can also be referred to as the one hundred year flood.

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

construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

**Structure** means a walled and roofed building, a manufactured home, or a gas, liquid, or liquefied gas storage tank that is principally above ground.

**Substantial Damage** means damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. See definition of substantial improvement. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

**Substantial Improvement** means any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

- (A) any correction of existing violations of State or community health, sanitary, or safety code specifications which have been identified by the community code enforcement official and which are the minimum necessary to assure safe living conditions; or
- (B) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

**Variance** is a grant of relief from the requirements of this ordinance.

**Violation** means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Sections C.2-2 and C.2-3 is presumed to be in violation until such time as that documentation is provided.

**Water Surface Elevation (WSE)** means the height, in relation to mean sea level, of floods of various magnitudes and frequencies in the floodplains of riverine areas.

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

## **2-1.5 LANDS TO WHICH THIS CHAPTER APPLIES**

This ordinance shall apply to all Special Flood Hazard Areas within the jurisdiction of Forsyth County and within the jurisdiction of any other community whose governing body agrees, by resolution, to such applicability.

## **2-1.6 BASIS FOR ESTABLISHING THE SPECIAL FLOOD HAZARD AREAS.**

The Special Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Insurance Study

(FIS) and its accompanying Flood Insurance Rate Maps (FIRM), for Forsyth County dated January 2, 2009, which are adopted by reference and declared to be a part of this ordinance.

The initial Flood Insurance Rate Maps are as follows for the jurisdictional areas at the initial date: Forsyth County Unincorporated Area, dated September 1, 1972; the City of Winston-Salem, dated August 31, 1972; the Town of Bethania, dated October 20, 1998; the Town of Rural Hall, dated September 1, 1972; and the Village of Tobacoville, dated September 1, 1972.

### **2-1.7 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 determined in accordance with the provisions of Section C.2-1.6.

### **2-1.8 COMPLIANCE**

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.

### **2-1.9 ABROGATION AND GREATER RESTRICTIONS**

This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

### **2-1.10 INTERPRETATION**

In the interpretation and application of this ordinance, all provisions shall be:

- (A) Considered as minimum requirements;
- (B) Liberally construed in favor of the Elected Body; and,
- (C) Deemed neither to limit nor repeal any other powers granted under State statutes.

### **2-1.11 WARNING AND DISCLAIMER OF LIABILITY**

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Special Flood Hazard Areas or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Forsyth County or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

### **2-1.12 PENALTIES FOR VIOLATION**

Penalties for violation of any provision of this Article shall be as set out in the *Zoning Ordinance* of the *Unified Development Ordinances*.

## **2-2 ADMINISTRATION**

### **2-2.1 DESIGNATION OF FLOODPLAIN ADMINISTRATOR**

The Director of Inspections, hereinafter referred to as the “Floodplain Administrator”, is hereby appointed to administer and implement the provisions of this ordinance.

## **2-2.2 APPLICATION REQUIREMENTS**

Application for a Floodplain Development Permit shall be made to the Floodplain Administrator prior to any development activities located within Special 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 as delineated on the FIRM or other flood map as determined in Section C.2-1.6, or a statement that the entire lot is within the Special 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 C.2-1.6;
  - (4)** The boundary of the floodway(s) or non-encroachment area(s) as determined in Section C.2-1.6;
  - (5)** The Base Flood Elevation (BFE) where provided as set forth in Section C.2-1.6; Article 4, Section C.2-2.5; or Section C.2-3.4;
  - (6)** The old and new location of any watercourse that will be altered or relocated as a result of proposed development; and
- (B)** Proposed elevation, and method thereof, of all development within a Special 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 AO will be floodproofed; 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, an operational plan, and an inspection and maintenance plan that include, but are 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); and
  - (2) Openings to facilitate automatic equalization of hydrostatic flood forces on walls in accordance with Section C.2-3.2(E)(3) when solid foundation perimeter walls are used in Zones A, AO, AE, and A1-30.
- (E) Usage details of any enclosed areas below the lowest floor.
- (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) Certification that all other Local, State and Federal permits required prior to floodplain development permit issuance have been received.
- (H) Documentation for placement of Recreational Vehicles and/or Temporary Structures, when applicable, to ensure that the provisions of Sections C.2-3.2(G) and C.2-3.2(H) 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.

### **2-2.3 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 determination for the proposed development in accordance with available data specified in Section C.2-1.6.
- (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, AO, AE or A1-30.

## 2-2.4 CERTIFICATION REQUIREMENTS

### (A) Elevation Certificates

- (1) An Elevation Certificate (FEMA Form 81-31) is required after the reference level is established. Within twenty-one (21) 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 twenty-one (21) 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.
- (2) 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, an operational plan, and an inspection and maintenance plan are 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, the operational plan, and the inspection and maintenance 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, AO, AE, or A1-30 and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required in accordance with the provisions of Section C.2-3.2(D)(2).

- (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, AO, AE or A1-30, are exempt from the elevation/floodproofing certification requirements specified in items (A) and (B) of this subsection:
  - (1) Recreational Vehicles meeting requirements of Section C.2-3.2(G)(1);
  - (2) Temporary Structures meeting requirements of Section C.2-3.2(H); and
  - (3) Accessory Structures less than 150 square feet meeting requirements of Section C.2-3.2(I).

## **2-2.5 DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR**

The Floodplain Administrator shall perform, but not be limited to, the following duties:

- (A) Review all floodplain development applications and issue permits for all proposed development within Special Flood Hazard Areas to assure that the requirements of this ordinance have been satisfied.
- (B) Review all proposed development within Special Flood Hazard Areas to assure that all necessary Local, State and Federal permits have been received.
- (C) Notify adjacent communities and the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency (FEMA).
- (D) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is maintained.
- (E) Prevent encroachments into floodways and non-encroachment areas unless the certification and flood hazard reduction provisions of Section C.2-3.6 are met.
- (F) Obtain actual elevation (in relation to mean sea level) of the reference level (including basement) and all attendant utilities of all new and substantially improved structures, in accordance with the provisions of Section C.2-2.4.
- (G) Obtain actual elevation (in relation to mean sea level) to which all new and substantially improved structures and utilities have been floodproofed, in accordance with the provisions of Section C.2-2.4.
- (H) Obtain actual elevation (in relation to mean sea level) of all public utilities in accordance with the provisions of Section C.2-2.4.

- (I) When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with the provisions of Section C.2-2.4 and Section C.2-3.2(C).
- (J) Where interpretation is needed as to the exact location of boundaries of the Special Flood Hazard Areas, floodways, or non-encroachment areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
- (K) When Base Flood Elevation (BFE) data has not been provided in accordance with the provisions of Section C.2-1.6, obtain, review, and reasonably utilize any BFE data, along with floodway data or non-encroachment area data available from a Federal, State, or other source, including data developed pursuant to Section C.2-3.4(B)(2), in order to administer the provisions of this ordinance.
- (L) When Base Flood Elevation (BFE) data is provided but no floodway or non-encroachment area data has been provided in accordance with the provisions of Section C.2-1.6, obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a Federal, State, or other source in order to administer the provisions of this ordinance.
- (M) When the lowest floor and the lowest adjacent grade of a structure or the lowest ground elevation of a parcel in a Special Flood Hazard Area is above the Base Flood Elevation (BFE), advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the LOMA issued by FEMA in the floodplain development permit file.
- (N) Permanently maintain all records that pertain to the administration of this ordinance and make these records available for public inspection, recognizing that such information may be subject to the Privacy Act of 1974, as amended.
- (O) Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the Floodplain Administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the Floodplain Administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.
- (P) Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the Floodplain Administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing or in charge of the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor.
- (Q) Revoke floodplain development permits as required. The Floodplain Administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, and specifications; for refusal or failure to comply with the requirements of State or local laws; or for false

statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable State or local law may also be revoked.

- (R) Make periodic inspections throughout the Special Flood Hazard Areas within the jurisdiction of the community. The Floodplain Administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.
- (S) Follow through with corrective procedures of Section C.2-2.6.
- (T) Review, provide input, and make recommendations for variance requests.
- (U) Maintain a current map repository to include, but not limited to, the FIS Report, FIRM and other official flood maps and studies adopted in accordance with the provisions of Section C.2-1.6 of this ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
- (V) Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-Fs) and Letters of Map Revision (LOMRs).

## **2-2.6 CORRECTIVE PROCEDURES**

- (A) Violations to be Corrected: When the Floodplain Administrator finds violations of applicable State and local laws, it shall be his or her duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law cited in such notification.
- (B) Actions in Event of Failure to Take Corrective Action: If the owner of a building or property shall fail to take prompt corrective action, the Floodplain Administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:
  - (1) That the building or property is in violation of the floodplain management regulations;
  - (2) That a hearing will be held before the Floodplain Administrator at a designated place and time, not later than ten (10) days after the date of the notice, at which time the owner shall be entitled to be heard in person or by counsel and to present arguments and evidence pertaining to the matter; and
  - (3) That following the hearing, the Floodplain Administrator may issue an order to alter, vacate, or demolish the building; or to remove fill as applicable.
- (C) Order to Take Corrective Action: If, upon a hearing held pursuant to the notice prescribed above, the Floodplain Administrator shall find that the building or development is in violation of the Flood Damage Prevention Ordinance, he or she shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than sixty (60) calendar days, nor more than one-hundred and eighty (180) calendar days. Where the Floodplain Administrator finds that there is imminent

danger to life or other property, he or she may order that corrective action be taken in such lesser period as may be feasible.

- (D) Appeal: Any owner who has received an order to take corrective action may appeal the order to the local elected governing body by giving notice of appeal in writing to the Floodplain Administrator and the clerk within ten (10) days following issuance of the final order. In the absence of an appeal, the order of the Floodplain Administrator shall be final. The local governing body shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.
- (E) Failure to Comply with Order: If the owner of a building or property fails to comply with an order to take corrective action for which no appeal has been made or fails to comply with an order of the governing body following an appeal, the owner shall be guilty of a misdemeanor and shall be punished at the discretion of the court.

## **2-2.7 VARIANCE PROCEDURES**

- (A) The Forsyth County Zoning Board of Adjustment as established by Forsyth County and the Winston-Salem Zoning Board of Adjustment as established by the City of Winston-Salem, hereinafter referred to as the “appeal board”, shall hear and decide requests for variances from the requirements of this ordinance for their respective jurisdictions.
- (B) Any person aggrieved by the decision of the appeal board may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.
- (C) Variances may be issued for:
- (1) The repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and that the variance is the minimum necessary to preserve the historic character and design of the structure;
  - (2) Functionally dependent facilities if determined to meet the definition as stated in Section C.2-1.4 of this ordinance, provided provisions of Sections C.2-2.7(I)(2), (3), and (5) have been satisfied, and such facilities are protected by methods that minimize flood damages during the base flood and create no additional threats to public safety; or
  - (3) Any other type of development, provided it meets the requirements of this Section.
- (D) In passing upon variances, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and:
- (1) The danger that materials may be swept onto other lands to the injury of others;
  - (2) The danger to life and property due to flooding or erosion damage;
  - (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

- (4) The importance of the services provided by the proposed facility to the community;
  - (5) The necessity to the facility of a waterfront location as defined under Section C.2-1.4 of this ordinance as a functionally dependent facility, where applicable;
  - (6) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
  - (7) The compatibility of the proposed use with existing and anticipated development;
  - (8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
  - (9) The safety of access to the property in times of flood for ordinary and emergency vehicles;
  - (10) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
  - (11) The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.
- (E) A written report addressing each of the above factors shall be submitted with the application for a variance.
- (F) Upon consideration of the factors listed above and the purposes of this ordinance, the appeal board may attach such conditions to the granting of variances as it deems necessary to further the purposes and objectives of this ordinance.
- (G) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the Base Flood Elevation (BFE) and the elevation to which the structure is to be built and that such construction below the BFE increases risks to life and property, and that the issuance of a variance to construct a structure below the BFE will result in increased premium rates for flood insurance up to \$25 per \$100 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.
- (H) The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the State of North Carolina upon request.
- (I) Conditions for Variances:
- (1) Variances shall not be issued when the variance will make the structure in violation of other Federal, State, or local laws, regulations, or ordinances.

- (2) Variances shall not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
- (3) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- (4) Variances shall only be issued prior to development permit approval.
- (5) Variances shall only be issued upon:
  - (a) A showing of good and sufficient cause;
  - (b) A determination that failure to grant the variance would result in exceptional hardship; and
  - (c) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (J) A variance may be issued for solid waste disposal facilities or sites, salvage yards, and chemical storage facilities that are located in Special Flood Hazard Areas provided that all of the following conditions are met.
  - (1) The use serves a critical need in the community.
  - (2) No feasible location exists for the use outside the Special Flood Hazard Area.
  - (3) The reference level of any structure is elevated or floodproofed to at least the Regulatory Flood Protection Elevation.
  - (4) The use complies with all other applicable Federal, State and local laws.
  - (5) Forsyth County has notified the Secretary of the North Carolina Department of Crime Control and Public Safety of its intention to grant a variance at least thirty (30) calendar days prior to granting the variance.

## **2-3 STANDARDS FOR FLOOD DAMAGE REDUCTION**

### **2-3.1 GENERAL STANDARDS**

In all Special Flood Hazard Areas the following provisions are required:

- (A) All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure.
- (B) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

- (C) All new construction and substantial improvements shall be constructed by methods and practices that minimize flood damages.
- (D) 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 to the Regulatory Flood Protection Elevation. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, hot water heaters, and electric outlets/switches.
- (E) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- (F) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters.
- (G) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
- (H) Any alteration, repair, reconstruction, or improvements to a structure, which is in compliance with the provisions of this ordinance, shall meet the requirements of new construction as contained in this ordinance.
- (I) 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.
- (J) New solid waste disposal facilities and sites, salvage yards, and chemical storage facilities shall not be permitted, except by variance as specified in Section C.2-2.7(J). 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 only if the structure or tank is either elevated or floodproofed to at least the Regulatory Flood Protection Elevation and certified in accordance with the provisions of Section C.2-2.4.
- (K) All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
- (L) All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- (M) All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (N) All subdivision proposals and other development proposals shall have received all necessary permits from those governmental agencies for which approval is required by



Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.

- (O) When a structure is partially located in a Special Flood Hazard Area, the entire structure shall meet the requirements for new construction and substantial improvements.
- (P) When a structure is located in multiple flood hazard zones or in a flood hazard risk zone with multiple base flood elevations, the provisions for the more restrictive flood hazard risk zone and the highest Base Flood Elevation (BFE) shall apply.

## **2-3.2 SPECIFIC STANDARDS**

In all Special Flood Hazard Areas where Base Flood Elevation (BFE) data has been provided, as set forth in Section C.2-1.6 or Section C.2-3.4, the following provisions, in addition to the provisions of Section C.2-3.1, are required:

### **(A) Limits of Encroachment**

The area of encroachment may not include more than fifty percent (50%) of the area of the floodway fringe on the zoning lot where it is located. The area of encroachment may not extend toward the stream channel more than one-half the distance between the outer edge of the floodway fringe and the outer edge of the floodway at any point, unless a certified engineering study demonstrates that any encroachments result in no more than a one-half foot rise in flood elevation. Measurement of the fifty percent (50%) area and one-half distance of encroachment are calculated from each outside edge of the floodway fringe.

### **(B) Residential Construction**

New construction and substantial improvement of any residential structure (including manufactured homes) shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation, as defined in Section C.2-1.4 of this ordinance.

### **(C) Non-Residential Construction**

New construction and substantial improvement of any commercial, industrial, or other non-residential structure shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation, as defined in Section C.2-1.4 of this ordinance. Structures located in A, AE, AO, and A1-30 Zones may be floodproofed to the Regulatory Flood Protection Elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the Regulatory Flood Protection Elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the floodproofing elevation shall be in accordance with Section C.2-3.7(B). A registered professional engineer or architect shall certify that the floodproofing standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Section C.2-2.4, along with the operational plan and the inspection and maintenance plan.

**(D) Manufactured Homes**

- (1) New and replacement manufactured homes shall be elevated so that the reference level of the manufactured home is no lower than the Regulatory Flood Protection Elevation, as defined in Section C.2-1.4 of this ordinance.
- (2) Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by certified engineered foundation system, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes adopted by the Commissioner of Insurance pursuant to NCGS 143-143.15. Additionally, when the elevation would be met by an elevation of the chassis thirty-six (36) inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above thirty-six (36) inches in height, an engineering certification is required.
- (3) All enclosures or skirting below the lowest floor shall meet the requirements of Section C.2-3.2(E).
- (4) An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood prone areas. This plan shall be filed with and approved by the Floodplain Administrator and the local Emergency Management Coordinator.

**(E) Elevated Buildings**

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

- (1) 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;
- (2) Shall be constructed entirely of flood resistant materials at least to the Regulatory Flood Protection Elevation; and
- (3) Shall include, in Zones A, AO, AE, and A1-30, 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 professional engineer or architect or meet or exceed the following minimum design criteria:

  - (a) A minimum of two flood openings on different sides of each enclosed area subject to flooding;

- (b) 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;
- (c) If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
- (d) The bottom of all required flood openings shall be no higher than one (1) foot above the adjacent grade;
- (e) 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
- (f) 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.

**(F) 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.

**(G) Recreational Vehicles**

Recreational vehicles shall either:

- (1) Be on site for fewer than 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
- (2) Meet all the requirements for new construction.

**(H) 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:

- (1) 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;
- (2) The name, address, and phone number of the individual responsible for the removal of the temporary structure;
- (3) The time frame prior to the event at which a structure will be removed (i.e., minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);
- (4) A copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and
- (5) Designation, accompanied by documentation, of a location outside the Special Flood Hazard Area, to which the temporary structure will be moved.

**(I) Accessory Structures**

When accessory structures (sheds, detached garages, etc.) are to be placed within a Special 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 the provisions of Section C.2-3.1(C);
- (6) All service facilities such as electrical shall be installed in accordance with the provisions of Section C.2-3.1(D); and

- (7) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below Regulatory Flood Protection Elevation in conformance with the provisions of Section C.2-3.2(E)(3).

An accessory structure with a footprint less than 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 C.2-2.4.

### **2-3.3 RESERVED**

### **2-3.4 STANDARDS FOR FLOODPLAINS WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS**

Within the Special Flood Hazard Areas designated as Approximate Zone A and established in Section C.2-1.6, where no Base Flood Elevation (BFE) data has been provided by FEMA, the following provisions, in addition to the provisions of Section C.2-3.1, shall apply:

- (A) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of twenty (20) feet each side from top of bank or five times the width of the stream, whichever is greater, unless certification with supporting technical data by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- (B) The BFE used in determining the Regulatory Flood Protection Elevation shall be determined based on the following criteria:
- (1) When Base Flood Elevation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or floodproofed in accordance with standards in Sections C.2-3.1 and C.2-3.2.
- (2) When floodway or non-encroachment data is available from a Federal, State, or other source, all new construction and substantial improvements within floodway and non-encroachment areas shall also comply with the requirements of Sections C.2-3.2 and C.2-3.6.
- (3) All subdivision, manufactured home park and other development proposals shall provide Base Flood Elevation (BFE) data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured home sites. Such Base Flood Elevation (BFE) data shall be adopted by reference in accordance with Section C.2-1.6 and utilized in implementing this ordinance.
- (4) When Base Flood Elevation (BFE) data is not available from a Federal, State, or other source as outlined above, the reference level shall be elevated or floodproofed (nonresidential) to or above the Regulatory Flood Protection Elevation, as defined in Section C.2-1.4. All other applicable provisions of Section C.2-3.2 shall also apply.

### **2-3.5 STANDARDS FOR RIVERINE FLOODPLAINS WITH BASE FLOOD ELEVATIONS BUT WITHOUT ESTABLISHED FLOODWAYS OR NON-ENCROACHMENT AREAS**

Along rivers and streams where Base Flood Elevation (BFE) data is provided by FEMA or is available from another source but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

- (A) Standards of Sections C.2-3.1 and C.2-3.2; and
- (B) Until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating 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 than one-half (.5) foot at any point within the community.

### **2-3.6 FLOODWAYS AND NON-ENCROACHMENT AREAS**

Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas established in Section C.2-1.6. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles. The following provisions, in addition to standards outlined in Sections C.2-3.1 and C.2-3.2, shall apply to all development within such areas:

- (A) No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless:
  - (1) It is demonstrated that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the Floodplain Administrator prior to issuance of floodplain development permit, or
  - (2) A Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained upon completion of the proposed encroachment.
- (B) If Section C.2-3.6(A) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this ordinance.
- (C) No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, provided the following provisions are met:
  - (1) The anchoring and the elevation standards of Section C.2-3.2(D); and
  - (2) The no encroachment standard of Section C.2-3.6(A).

## 2-3.7 STANDARDS FOR AREAS OF SHALLOW FLOODING (ZONE AO)

Located within the Special Flood Hazard Areas established in Section C.2-1.6, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Sections C.2-3.1 and C.2-3.2, all new construction and substantial improvements shall meet the following requirements:

- (A) The reference level shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of four (4) feet, above the highest adjacent grade; or at least four (4) feet above the highest adjacent grade if no depth number is specified.
- (B) Non-residential structures may, in lieu of elevation, be floodproofed to the same level as required in Section C.2-3.7(A) so that the structure, together with attendant utility and sanitary facilities, below that level shall be 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. Certification is required in accordance with Section C.2-2.4 and Section C.2-3.2(C).
- (C) Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

Section 5. Chapter C, Article V of the UDO is amended as follows:

## **Chapter C - Environmental Ordinance**

### **Article V - Erosion Control**

#### **5-5 GENERAL REQUIREMENTS**

##### **5-5.2 PROTECTION OF PROPERTY**

Persons conducting land disturbing activity shall take all reasonable measures to protect all public and private property from damage caused by such activity, including protected floodway fringe areas specified in Section ~~C.2-3.1(B)(3)(b)~~ C.2.

#### **5-7 MANDATORY STANDARDS FOR LAND DISTURBING ACTIVITY**

##### **(E) FLOODWAY AND FLOODWAY FRINGE AREAS**

- (1) Limits of Encroachment.** Cut or fill or other activities shall meet the limits of encroachment specified in Section C.2-3.
- (2) Designation in the Field.** The limit of grading and encroachment according to Section ~~C.2-3.1(B)(3)(b)(i)~~ C.2-3.2(A), consisting of a line delineating one-half the distance of this Ordinance, consisting of a line delineating one-half the distance between the outer edge of the floodway fringe and the outer edge of the floodway for the zoning lot in question, or other line provided by a certified

engineering study in accordance with Section ~~C.2-3.1(B)(3)(b)(i)~~ C.2-3.2(A), shall be designated in the field by the applicant or property owner by means of highly visible and durable plastic material or other means acceptable to the Erosion Control Officer, prior to the issuance of the grading permit.

- (3) **Subdivisions.** For subdivisions, the designation of limits of grading or encroachment into the floodway fringe area required in Section ~~C.2-3.1(B)(3)(b)(i)~~ C.2-3.2(A) shall be provided by the property owner or developer for the entire zoning lot being subdivided prior to the issuance of grading permits and construction of streets or other improvements. The Erosion Control Officer shall review the proposed encroachment prior to the issuance of permits for the development of individual lots created through the subdivision process.

**Section 6.** Chapter C, Article VI of the UDO is amended as follows:

## Chapter C - Environmental Ordinance

### Article VI - Dam Breach Hazard Areas

#### 6-2 DEVELOPMENT STANDARDS

The development standards applicable to floodways, in accordance with Section ~~C.2-3.1~~, shall apply to dam breach hazard areas.

**Section 7.** Chapter D of the UDO is amended as follows:

## Chapter D - Subdivision Regulations

### 3. MINOR SUBDIVISIONS

(H) **Subdivided Zoning Lots With Written Agreement**

When a zoning lot existing as of the effective date of this Ordinance is proposed to be subdivided into two or more zoning lots, the other requirements of the *Unified Development Ordinances* shall be applied to each of the subdivided lots, provided, however, that the residential density requirements of this Ordinance and the limits of floodway fringe encroachment provisions of Section ~~C.2-3.1(B)(3)(b)(i)~~ C.2-3.2(A) may be applied, in whole or in part, to any one or more of the subdivided lots and not to the other lot(s) when such original zoning lot is subdivided under the following conditions:

- (1) **Floodplain.** The original zoning lot encompasses property with designated floodplain area per Section C.2.
- (2) **GMA.** The original zoning lot lies partially or completely within GMAs 1, 2, 3 or 4, as designated in *Legacy*.
- (3) **Allocation of Development Rights Between Seller and Purchaser.** The owner of the original zoning lot and the purchaser(s) of a subdivided part have in writing allocated development rights between or among themselves concerning the development of the original zoning lot whereby a right, or any portion thereof, to develop all, or any portion of, a subdivided part of the original zoning



lot as permitted in this Ordinance is transferred to, or is retained by, the remaining portion of the original zoning lot. Development of each subdivided part pursuant to the terms of the writing shall meet or exceed the requirements of this Ordinance. The writing shall further provide that the allocation of development rights shall be appurtenant to and run with the land so benefitted and have the effect of imposing a negative easement or restriction upon the servient land.

- (4) **Director of Inspections Approval of Plat.** The writing constituting the reallocation of development rights must include, or be represented by, a plat illustrating the reallocation. To be effective, the writing and plat shall be reviewed for compliance with this Ordinance by the Director of Inspections, and if the writing and plat complies with this Ordinance, the Director of Inspections shall stamp his approval upon its face, and the writing and plat must then be recorded at the Forsyth County Register of Deeds. A violation of these requirements shall be a violation of this Ordinance and unlawful.

**Section 8.** This ordinance shall be effective January 2, 2009.