

ARTICLE 13.

FLOOD PLAIN MANAGEMENT

DIVISION 1. GENERAL PROVISIONS.....2
 Sec. 18-636. Title.2
 Sec. 18-637. Purpose.2
 Sec. 18-638. Scope; full compliance required.2
DIVISION 2. ADMINISTRATION, ENFORCEMENT.....3
 Sec. 18-644. Generally......3
 Sec. 18-645. Basis for establishing the special flood hazard areas and future conditions flood hazard areas......3
 Sec. 18-646. Application for development permits; certification required......3
 Sec. 18-647. Duties and responsibilities of flood plain manager.5
 Sec. 18-648. Administrative procedures.7
 Sec. 18-649. Variance procedures.8
DIVISION 3. FLOOD PLAIN MANAGEMENT STANDARDS10
 Sec. 18-659. General standards......10
 Sec. 18-660. Standards for areas where base flood elevation data has been provided......11
 Sec. 18-661. Areas of special flood hazard......15
 Sec. 18-662. Floodways and non-encroachment areas.16
 Sec. 18-663. Standards for streams without established base flood elevations and/or floodways......16
 Sec. 18-664. Special standards for subdivision proposals and major development......17
 Sec. 18-665. Standards for areas of shallow flooding (AO zones).17
 Sec. 18-666. Coastal high hazard areas (Zones VE and V1-30).18
DIVISION 4. MISCELLANEOUS PROVISIONS19
 Sec. 18-676. Warning and disclaimer of liability.19
 Sec. 18-677. Amendments.20
 Sec. 18-678. Legal status.20

ARTICLE 13.

FLOOD PLAIN MANAGEMENT

DIVISION 1. GENERAL PROVISIONS

Sec. 18-636. Title.

This article shall be known as the Flood Plain Management Regulations of the City of Wilmington, North Carolina, and may be referred to as the Flood Plain Management Regulations.

Sec. 18-637. Purpose.

The purpose of this article is to promote the 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: (1) restrict or prohibit uses which are dangerous to the health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; (2) require the uses vulnerable to floods, including facilities which 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 which are involved in the accommodation of flood waters; (4) control filling, grading, dredging and other development which may increase erosion or flood damage; and (5) prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

The flood prone areas within the jurisdiction of City of Wilmington are subject to periodic inundation that may result in loss of life, property, health and safety hazards, disruption of commerce and governmental services, public expenditures of flood protection and relief, and impairment of the tax base, all of which may adversely affect the public health, safety, and general welfare. 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.

The objectives of this article are to: protect human life and health; minimize expenditure of public money for costly flood control projects; minimize public and private losses due to flood conditions; minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; minimize prolonged business losses and interruptions; 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; help maintain a stable tax base by providing for the sound use and development of flood prone areas; and ensure that potential buyers are aware that property is in a special flood hazard area.

(Ord. No. O-2006-26, § 1(a), 3-7-06)

Sec. 18-638. Scope; full compliance required.

This article shall apply to all areas of special flood hazard lying within the regulatory jurisdiction of the City.

Secs. 18-639--18-643. Reserved.

DIVISION 2. ADMINISTRATION, ENFORCEMENT

Sec. 18-644. Generally.

The flood plain manager or any other person designated by the City Manager shall administer and enforce the provisions of this article. In order to adequately carry out the administration and enforcement of this article, such other persons as are deemed necessary by the City Manager may provide assistance.

Sec. 18-645. Basis for establishing the special flood hazard areas and future conditions flood hazard areas.

The special flood hazard areas are those identified by the Federal Emergency Management Agency (FEMA) or produced under the cooperating technical state agreement between the State of North Carolina and FEMA in its flood hazard boundary map or flood insurance study and its accompanying flood maps. These maps may include but are not limited to the flood insurance rate map(s) (FIRM) and/or the flood boundary floodway map(s), for the City of Wilmington dated April 3, 2006, and any revised maps issued thereafter, which are adopted by reference and declared to be a part of this article. 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. This includes, but is not limited to: detailed flood data generated as a requirement of the administration of this article; preliminary FIRMs where more stringent than the effective FIRM; or post-disaster flood recovery maps.

In addition, upon annexation into the City of Wilmington, the special flood hazard areas identified by FEMA and/or produced under the cooperating technical state agreement between the State of North Carolina and FEMA as stated above, for the unincorporated areas of New Hanover County, with accompanying maps and other supporting data, and any revision thereto, are adopted by reference and declared to be a part of this article.

(Ord. No. O-2006-26, § 1(b), 3-7-06)

Sec. 18-646. Application for development permits; certification required.

(a) Except as provided in subsection 18-661(b), no person may start any development activities within areas of special flood hazard without having first obtained a development permit from the flood plain manager in accordance with this article. Approval for commencement of development will be given as follows:

(1) *Residential and nonresidential structures:*

- a. The flood plain manager shall approve or disapprove proposed development as to compliance with this article at the same time he approves the issuance of a building permit for any new construction, improvements, reconstruction or alterations for buildings, dwellings or structures.

- b. The flood plain manager shall approve the issuance of a building permit if the plans for the development meet the following criteria:
 - i. The proposed structure is within a flood prone area as designated by the herein referenced maps and complies with the standards of this article; or
 - ii. The proposed structure is not within a flood prone area as designated by the herein referenced maps and is exempted from the standards of this article.
- (2) *Development other than structures:* The flood plain manager shall certify all construction, improvements or reconstruction not otherwise authorized by the building permit, provided such development conforms with the requirements of this article.
- (3) *Before giving clearance to any proposed artificial obstruction in areas of special flood hazard, the flood plain manager shall also consider the dangers that may be created by:*
 - a. Water which may be backed up or diverted by such obstruction;
 - b. The possibility that the obstruction will be swept downstream to the injury of others;
 - c. The injury or damage at the site of the obstruction itself; and
 - d. Potential adverse effects on existing and anticipated development.

(b) Application for a development permit shall be made to the local administrator on forms furnished by him or her prior to any development activities. The development permit may include but not be limited to plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures; and the location of fill materials, storage areas, and drainage facilities. Specifically, the following information is required:

- (1) Where base flood elevation data is provided by FEMA, the application for a development permit within the special flood hazard areas designated as Zone A on the flood insurance rate map shall show:
 - a. The elevation in relation to mean sea level of the lowest floor, including the basement, of all new and substantially improved structures and
 - b. If the structure has been flood-proofed in accordance with this article, the elevation in relation to mean sea level to which the structure was flood-proofed.
- (2) A certificate from a registered professional engineer or licensed architect that any nonresidential flood-proofed structure meets the flood-proofing criteria in section 18-660.
- (3) Where the base flood elevation data is not provided, the application for a development permit must show construction of the lowest floor at least two (2) feet above the highest

adjacent grade.

- (4) A description of the extent to which any watercourse will be altered or relocated as a result of proposed development; and engineering report on the effects of the proposed project on the flood carrying capacity of the watercourse and on properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation.
- (5) A certificate from a registered professional engineer or licensed architect that utilities have been or will be located, designed and constructed to eliminate flood damage. In the case of sanitary sewer systems and on-site waste disposal systems, this certificate shall provide that such systems have been or will be located, designed or constructed to eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

(c) After the lowest floor is completed, the holder of the development permit must obtain a floor elevation or flood-proofing certificate prepared by a registered professional engineer or licensed architect. The certification shall show the elevation of the lowest floor or flood-proofed elevation in relation to mean sea level. Such certification shall be submitted to the flood plain manager within twenty-one (21) calendar days after the lowest floor elevation is established or the structure is flood-proofed, whichever is applicable.

The flood plain manager shall review the floor elevation of flood-proofing certification. The permit holder shall correct any floor elevation or flood-proofing deficiencies detected by the flood plain manager before further work is done. Failure to submit the required certification within the above time limit or failure to correct any deficiencies identified by the flood plain manager shall be cause to issue a stop work order pursuant to section 18-648 of this article.

Sec. 18-647. Duties and responsibilities of flood plain manager.

- (a) The duties of the flood plain manager under this article shall include, but not be limited to:
 - (1) Reviewing all development permits to assure that the requirements of this article have been satisfied.
 - (2) Approving or denying clearance for building permits and construction projects as provided in section 18-646.
 - (3) Advising the permittee that additional federal or state permits may be required; if specific permits are necessary, requiring that copies of such permits be provided and maintained on file with the development permit before the development permit is issued.
 - (4) Notifying adjacent communities, if applicable, and the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program before any alteration or relocation of a watercourse, and submitting evidence of such notification to the Federal Emergency

Management Agency.

- (5) Preventing encroachments within areas of special flood hazard unless the certification and flood hazard reduction provisions of this article are met.
- (6) Assuring that maintenance is provided within any altered or relocated portion of a watercourse so that the flood-carrying capacity is not diminished.
- (7) Verifying and recording the actual elevation in relation to mean sea level of the lowest floor, including basement, of all new or substantially improved structures within or adjacent to flood prone areas.
- (8) Verifying and recording the actual elevation in relation to mean sea level to which new or substantially improved structures have been flood-proofed.
- (9) Obtaining certification from a registered professional engineer or licensed architect that water supply systems and sanitary sewers or on-site waste disposal systems are located designed and constructed to eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.
- (10) When flood-proofing is utilized for a particular structure, obtaining certification from a registered professional engineer or licensed architect, pursuant to section 18-660.
- (11) When the exact location of boundaries of the areas of special flood hazard conflict with the current, natural topography information at the site, the property owner may apply and be approved for a letter of map amendment (LOMA) by FEMA. A copy of the letter of map amendment issued from FEMA will be maintained by the local administrator in the permit file.
- (12) Make on-site inspections of projects in accordance with section 18-648.
- (13) Serve notices of violations, issued stop-work orders, revoke permits, and take corrective actions in accordance with section 18-648.

(b) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the flood plain manager shall 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.

(c) When base flood elevation data or floodway data has not been provided by FEMA, the flood plain manager shall obtain, review and reasonably utilize any base flood elevation data and floodway data available from a federal, state or other source, in order to administer the provisions of this article.

(d) The City Manager shall maintain all records pertaining to the provisions of this article,

including all maps designating flood-prone areas and annual reports filed with the Federal Emergency Management Agency. These records shall be open for public inspection.

(e) The flood plain manager shall report all variances granted from this article to the Federal Emergency Management Agency.

(f) Annexation. Provide the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program with two (2) copies of the maps delineating new corporate limits within six (6) months from date of annexation or change in corporate boundaries.

Sec. 18-648. Administrative procedures.

(a) As the work pursuant to a permit progresses, the flood plain manager 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 flood plain manager has a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction at any reasonable hour for the purposes of inspection or other enforcement action.

(b) Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the flood plain manager may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing the work. The stop-work order shall state the specific work to be stopped, the specific reasons for the stoppage, and the conditions under which the work may be resumed.

(c) The flood plain manager may revoke and require the return of the development permit by notifying the permit holder in writing stating the reason for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, or 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 permit mistakenly issued in violation of an applicable State or local law may also be revoked.

(d) When the flood plain manager finds violations of applicable state and local laws, it shall be his 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 in the property he owns.

(e) If the owner of a building or property shall fail to take prompt corrective action, the flood plain manager shall give him written notice, by certified or registered mail to his last known address or by personal service, of the determination that the building or property is in violation of the Flood Plain Management Regulations and requiring the owner to remedy the violation within such period, not less than sixty (60) days, as the administrator may prescribe; provided that where the administrator finds that there is imminent danger to life or other property, he may order that corrective action be taken in such lesser period as may be feasible.

(f) Any owner who has received such determination and notice to take corrective action may appeal from the notice to the board of adjustment by giving notice of appeal in writing to the flood plain

manager within ten (10) days following the written notice. In the absence of an appeal, the flood plain manager's determination shall be final. The board of adjustment shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the determination of the flood plain manager. Any person aggrieved by the decision of the board of adjustment may appeal such decision to the superior court within thirty (30) days of the signing of the order of the board. Such appeal shall be in the nature of certiorari.

Sec. 18-649. Variance procedures.

(a) The board of adjustment shall hear and decide requests for variances from the requirements of this article. The board shall provide appropriate forms and information to person applying for a variance to enable them to furnish all necessary information to the board. The variance request shall be written and shall include information as to all of the factors set forth in subsection (b) and any other pertinent information.

(b) In passing upon such applications, the board of adjustment shall consider all technical evaluations, all relevant factors, standards specified in other sections of this section, and the following factors:

- (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;
- (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, where applicable;
- (6) The availability of alternative locations, not subject to flood 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 flood plain 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 flood waters 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.

(c) Generally, variances may be issued for new construction and substantial improvements to be erected on lots of one-half (1/2) acre or less in size, contiguous to and surrounded by lots with an existing structure constructed below the base flood level, providing the factors set forth in subsection 18-649(b) above have been fully considered. As the lot size increases beyond one-half (1/2) acre, the technical justification required for issuing the variance increases.

(d) Upon consideration of the factors listed above and the purposes of this article, the board of adjustment may attach such conditions to the granting of variances as it deems necessary to further the purposes of this article.

(e) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

(f) Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places without regard to the procedures set forth in this section.

(g) Conditions for variances:

- (1) Variances may 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 only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- (3) Variances shall only be issued upon a showing of good and sufficient cause, a determination that failure to grant the variance would result in exceptional hardship to the applicant, and, a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (4) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation to which the structure is to be built and stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest flood elevation. Such notification shall be maintained with a record of all variance actions.
- (5) The flood plain manager shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request.
- (6) No variance shall be approved for any new solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities in the 100-year flood plain except in accordance with the following standards: Provided that a structure or tank for chemical or fuel storage incidental to a use that is allowed under this section or to the operation of a water treatment plant or wastewater treatment facility may be located in a

100-year flood plain only if the structure or tank is either elevated above base flood elevation or designed to be watertight with walls substantially impermeable to the passage of water and with structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

Secs. 18-650--18-658. Reserved.

DIVISION 3. FLOOD PLAIN MANAGEMENT STANDARDS

Sec. 18-659. General standards.

- (a) The following requirements shall apply in all special flood hazard areas:
 - (1) All new construction and substantial improvements shall be:
 - a. Designed or modified and anchored to prevent flotation, collapse or lateral movement of the structure;
 - 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 water supply systems shall be designed to eliminate infiltration of flood waters into the system.
 - (3) All new and replacement sanitary sewage systems shall be designed to eliminate infiltration of flood waters into the system and discharges from the system into flood waters.
 - (4) All new and replacement on-site waste disposal systems shall be reasonably located, designed, and constructed to avoid impairment to them or contamination from them during flooding.
 - (5) Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and located so as to prevent water from entering or accumulating within the components during flooding. These include but are not limited to HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, appliances (washers, dryers, refrigerators, freezers, etc.), hot water heaters, and electric outlets/switches.
- (b) Any alteration, repair, reconstruction or improvements to a structure on which the start of construction was begun on or after April 4, 1978 shall meet the requirements of "new construction" as contained in this article.
- (c) Except as provided in subsection (d), on or after April 1, 1987, no new construction shall be allowed in any area of special flood hazard if such construction would cause more than fifty (50)

percent of the square footage of the special flood hazard area to be occupied by structures.

(d) New construction will be allowed in areas of special flood hazard which contained more than the allowable fifty (50) percent of structural coverage on April 1, 1987, if the following conditions are met:

- (1) The new construction must meet all other requirements of this article;
- (2) The new construction must replace a structure which was in existence on or before April 1, 1987; and
- (3) The new construction must not contain more square footage at or below the base flood elevation than the structure which is being replaced.

(e) Nonconforming buildings or uses may not be enlarged, replaced, or rebuilt unless such enlargement or reconstruction is accomplished in conformance with the provisions of this article. However, nothing in this article shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this article and located totally or partially within the areas of special flood hazard, provided that the bulk of the building or structure below base flood elevation in an area of special flood hazard is not increased and provided that such repair, reconstruction, or replacement meets all of the other requirements of this article.

(Ord. No. O-2006-26, § 1(c), 3-7-06)

Sec. 18-660. Standards for areas where base flood elevation data has been provided.

In addition to the requirements of section 18-659, the following standards shall apply in all special flood hazard areas where base flood data has been provided by FEMA or as set forth in subsection 13-11(c):

- (a) *Residential construction.* All new construction or substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to at least two (2) feet above base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movement of floodwaters shall be provided.
- (b) *Nonresidential construction.* New construction or substantial improvement of any commercial, industrial, or nonresidential structure (including manufactured homes) shall have the lowest floor, including basement, elevated at least two (2) feet above the base flood elevation. Structures located in "A" zones may be flood proofed in lieu of elevation provided that all areas of the structure below the required 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. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the official as set forth in subsection 18-646(b).

(c) *Elevated buildings.*

- (1) All new construction or substantial improvement of any elevated building that contains a fully enclosed area which is below the base flood elevation and which is formed by the foundation and other exterior walls shall:
 - a. Be designed so as not to contain any finished living space below the base flood plus at least two (2) feet elevation; and
 - b. Be constructed entirely of flood resistant materials below the regulatory flood protection elevation;
 - c. Be designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls. Designs for complying with this requirement must be certified by a registered professional engineer or licensed architect or must meet the following criteria:
 - i. At least 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 must be provided;
 - ii. The bottom of all openings shall be no higher than one (1) foot above grade;
 - iii. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of flood waters in both directions;
 - iv. If a building has more than one (1) enclosed area, each area must have openings to allow floodwaters to automatically enter and exit; and
 - v. Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings.
- (2) Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and located so as to prevent water from entering or accumulating within the components during flooding.
- (3) Access to the enclosed area shall be the minimum amount necessary to allow for parking of vehicles, such as a garage door, or limited storage of maintenance equipment used in connection with the premises, such as a standard exterior door, or entry to the living area, such as a stairway or elevator.

- (4) Except for enclosed storage areas, the interior portion of such enclosed areas shall not be partitioned or finished into separate rooms.
 - (5) Below the regulatory flood protection elevation, in Coastal High Hazard Areas (Zones VE and V1-30) design breakaway walls, latticework or insect screening. This is provided they are not part of the structural support of the building and are designed so as to breakaway, under abnormally high tides or wave action, without causing damage to the structural integrity of the building on which they are to be used, provided the following design specifications are met:
 - a. Material shall consist of open wood latticework or insect screening; and
 - b. Breakaway walls shall meet the following design specifications:
 - i. Design safe loading resistance of each wall shall be not less than ten (10) nor more than twenty (20) pounds per square foot; or
 - ii. Breakaway walls that exceed a design safe loading resistance of more than twenty (20) pounds per square foot (either by design or when so required by State or local codes) shall be certified by a registered professional engineer or architect that the designed wall will collapse from a water load less than that which would occur during the base flood event, and the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). The water loading values used shall be those associated with the base flood. The wind loading values used shall be those required by the North Carolina State Building Code.
- (d) *Manufactured homes.* Manufactured homes that are placed or substantially improved on sites that meet any of the following criteria (i through iv below) must be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated at least two (2) feet above the base flood elevation and must be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement:
- (i) located outside a manufactured home park or subdivision,
 - (ii) located in a new manufactured home park or subdivision,
 - (iii) located within an expansion to an existing manufactured home park or subdivision;
or
 - (iv) located in an existing manufactured home park or subdivision in which manufactured home has incurred "substantial damage" as the result of a flood.

- (1) Manufactured homes that are to be placed or substantially improved on sites in an existing manufactured home park or subdivision that do not meet any of the criteria listed in (i) through (iv) above must be elevated so that the lowest floor of the manufactured home is elevated to at least two (2) feet above the base flood elevation, and be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement.
 - (2) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. For the purpose of this requirement, manufactured homes must 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 G.S. 143--143.15. Additionally, when the elevation would be met by an elevation of the chassis at least thirty-six (36) inches or less above the grade at the sight, the chassis shall be supported by reinforced piers or other foundation elements of at least equivalent strength. When the elevation of the chassis is above thirty-six (36) inches in height, an engineering certification is required.
 - (3) 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 local administrator and the local emergency management coordinator.
- (e) *Recreational vehicles.* A recreational vehicle is ready for highway use if it is on wheels or jacking system, is attached to the site only by quick-disconnect-type utilities and security devices, and has no permanently attached additions. Recreation vehicles placed on sites shall adhere to one (1) of the following:
- (i) Be on the site for fewer than one hundred eighty (180) consecutive days;
 - (ii) Be fully licensed and ready for highway use; or
 - (iii) Meet the requirements of section 18-646 and subsections 18-659(a), (d).
- (f) *Temporary structures.* Prior to the issuance of a development permit for a temporary structure, the following requirements must be met:
- (1) All applicants must submit to the local administration prior to the issuance of the development permit a plan for the removal of such structure(s) in the event of a hurricane or flash flood warning notification. The plan must include the following information:
 - a. A specified time period for which the temporary use will be permitted not to exceed 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 a trucking company to ensure the availability of removal equipment when needed; and
 - e. Designation, accompanied by documentation, of a location outside the special flood hazard area to which the temporary structure will be moved.
- (2) The above information shall be submitted in writing to the local administrator for review and written approval.
- (g) *Accessory structure.* When accessory structures (sheds, detached garages, etc.) are to be placed in the flood plain, the following criteria shall be met:
- (1) Accessory structures shall be designed to have low flood damage potential.
 - (2) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of flood waters.
 - (3) Accessory structures shall be firmly anchored in accordance with subsection 18-659(a)(1)a.
 - (4) Service facilities such as electrical and heating equipment shall be elevated in accordance with subsection 18-659(a)(5).
 - (5) Openings to relieve hydrostatic pressure during a flood shall be provided below base flood elevation in conformance with subsection 18-660(c)(1).

(Ord. No. O-2006-26, §§ 1(d)--1(f), 3-7-06)

Sec. 18-661. Areas of special flood hazard.

- (a) Due to the extremely hazardous nature of areas of special flood hazard, the following conditions shall apply:
- (1) New solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities are prohibited in areas of special flood hazard except as authorized under G.S. 143-215.54A(b).
 - (2) No manufactured home shall be placed in any area of special flood hazard unless the manufactured home will be located in an existing manufactured home park or existing

manufactured home subdivision.

A replacement manufactured home may be placed on a lot in an existing manufactured home park or manufactured home subdivision provided the anchoring standards of subsection 18-659(a)(6) and the elevation standards of section 18-660 are met.

(b) Areas of special flood hazard may be used as a matter of right for uses that do not require structures, fill, dumping of materials, or storage of materials or equipment. No uses shall be permitted which would result in an increase in flood levels during the occurrence of the base flood.

Sec. 18-662. Floodways and non-encroachment areas.

(a) Located within special flood hazard areas established in section 18-645, are areas designated as floodways or non-encroachment areas. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of flood waters which carry debris and potential projectiles and have erosion potential. The following provisions, in addition to standards outlined in section 18-659 and section 18-660, shall apply to all development within such areas:

- (1) No encroachment, including fill, new construction, substantial improvements and other development, shall be allowed in any floodway or non-encroachment area unless:
 - a. 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
 - b. A conditional letter of map revision has been approved by FEMA. A letter of map revision must also be obtained upon completion of the proposed encroachment.
- (2) If subsection 18-662(a)(1) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of Division III.
- (3) No manufactured housing shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, providing the following provisions are met:
 - a. The anchoring and the elevation standards of subsection 18-660(d); and
 - b. The no encroachment standard of subsection 18-662(a)(1).

(Ord. No. O-2006-26, § 1(g), 3-7-06)

Sec. 18-663. Standards for streams without established base flood elevations and/or floodways.

(a) Located within the areas of special flood hazard established in section 18-645 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:

- (1) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of the stream bank equal to two (2) times the width of the stream at the top of the bank or twenty (20) feet from each side of the top of the bank, 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.
- (2) If subsection 18-663(a)(1) 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 hazards reduction provisions of Division 3 and shall be elevated or flood proofed in accordance with elevations established in accordance with subsection 18-647(c). When base flood elevation data is not available from a federal, state, or other source, the lowest floor, including basement, shall be elevated at least two (2) feet above the highest adjacent grade.

Sec. 18-664. Special standards for subdivision proposals and major development.

(a) All subdivision and major development proposals in accordance with regulations contained herein shall:

- (1) Be consistent with minimizing flood damage within all areas of special flood hazard as provided in this article;
- (2) Locate, design and construct all utilities and facilities such as sewer, gas, electrical and water systems and roads to prevent flood damage;
- (3) Locate, design and construct all sanitary sewer and on-site waste disposal systems to eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters; and
- (4) Provide adequate drainage to reduce exposure to flood hazards.

Base flood elevation data shall be provided for subdivision and major and/or multi-unit development proposals in accordance with regulations contained herein which are greater than the lesser of fifty (50) lots or five (5) acres in size.

Sec. 18-665. Standards for areas of shallow flooding (AO zones).

(a) All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated to the depth number specified on the FIRM, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor, including basement, shall be elevated at least two (2) feet above the highest adjacent grade.

- (b) All new construction and substantial improvements of nonresidential structures shall:
 - (1) Have the lowest floor, including basement, elevated to the depth number specified on the FIRM, in feet, above the highest adjacent grade; if no depth number is specified, the lowest floor, including basement, shall be elevated at least two (2) feet above the highest adjacent grade; or
 - (2) Be completely flood proofed together with attendant utility and sanitary facilities to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

Sec. 18-666. Coastal high hazard areas (Zones VE and V1-30).

Coastal High Hazard Areas are Special Flood Hazard Areas established in section 18-645, and designated as Zones VE or V1-30. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all other provisions in this ordinance with the exception of floodway and non-encroachment area provisions, the following provisions shall apply.

- (a) All development shall be located landward of the reach of mean high tide; be located landward of the first line of stable natural vegetation; and comply with all applicable CAMA setback requirements.
- (b) All new and substantially improved structures shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings or columns) is located no lower than the regulatory flood protection elevation. Floodproofing shall not be utilized on any structures in coastal high hazard areas to satisfy the regulatory flood protection elevation requirements.
- (c) All space below the regulatory flood protection elevation shall be open so as not to impede the flow of water with the following exceptions:
 - (1) Open wood latticework or insect screening may be permitted below the regulatory flood protection elevation for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action and in accordance with section 18-660 of this article. Design plans shall be submitted in accordance with section 18-646 of this article; or
 - (2) Breakaway walls may be permitted below the regulatory flood protection elevation provided they meet the criteria set forth in section 18-660 of this article. Design plans shall be submitted in accordance with section 18-646 of this article;
- (d) All new and substantially improved structures shall be securely anchored on pilings or columns. All pilings and columns and the structures attached thereto shall be anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be

those associated with the base flood. Wind loading values used shall be those required by the current edition of the North Carolina State Building Code.

- (e) A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in section 18-646, subsections 18-666(c), (d) and (f) of this article with North Carolina's "National Flood Insurance Program V-Zone Certification" form dated May 1992 or newer.
- (f) Fill shall not be used for structural support. Limited non-compacted and non-stabilized fill may be used around the perimeter of a building for landscaping and aesthetic purposes provided the fill will wash out from storm surge, thereby rendering the building free of obstruction prior to generating excessive loading forces, ramping effects, or wave deflection. Design plans shall be submitted in accordance with section 18-646 of this article. The floodplain administrator may approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer, architect, and/or soil scientist which demonstrates that the following factors have been satisfied:
 - (1) Particle composition of fill material does not have a tendency for excessive natural compaction;
 - (2) Volume and distribution of fill will not cause wave deflection to adjacent properties; and
 - (3) Slope of fill will not cause wave run-up or ramping.
- (g) There shall be no alteration of sand dunes which would increase potential flood damage.
- (h) No manufactured homes shall be permitted except in an existing manufactured housing park. A replacement manufactured home may be placed on a lot in an existing manufactured housing park provided the anchoring and elevation standards are in compliance with this section of ordinance.
- (i) Recreational vehicles may be permitted in coastal high hazard areas provided that they meet the recreational vehicle criteria of subsection 18-660(e) of this article and the temporary structure provisions of subsection 18-660(f) of this article.

(Ord. No. O-2006-26, § 2, 3-7-06)

Secs. 18-667--18-675. Reserved.

DIVISION 4. MISCELLANEOUS PROVISIONS

Sec. 18-676. Warning and disclaimer of liability.

The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations provided by the Federal Insurance Administration. Larger floods can and will occur on rare occasions and flood heights may be increased by

manmade or natural causes. This article does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damage. This article shall not increase liability on the part of the City or any of its officers or employees for any flood damages that result from reliance on this article or any administrative decision lawfully made hereunder. No action for damages sustained because of injury or property damage caused by a structure or obstruction for which a permit has been granted under this article shall be brought against the City or its employees or agents.

Sec. 18-677. Amendments.

No amendment to this article shall become effective unless it has been proposed or approved by the state coordinating agency and the Federal Insurance Administration.

Sec. 18-678. Legal status.

(a) Effect on right and liabilities under the existing flood plain management regulations. This article was originally adopted on March 24, 1987 as a reenactment in part of Flood Plain Management Regulations adopted on April 4, 1978. It is not the intention of any amendment to this article to repeal, but rather to continue in force without interruption such provisions existing at the time of amendment, so that all rights and liabilities that have accrued under this article are reserved and may be enforced. The enactment of any amendment to this article shall not affect any action, suit or proceeding instituted or pending.

(b) Effect upon outstanding building permits. Nothing herein contained shall require any change in the plans, construction, size or designated use of any building, structure or part thereof for which a building permit has been granted by the chief building inspector or his authorized agents before the time of passage of this article or any amendment hereto; provided, however, that when construction is not begun under such outstanding permit within a period of one hundred eighty (180) days subsequent to passage of this article or any amendment hereto, the construction or use shall be in conformity with the provisions of this article as amended.

Secs. 18-679--18-685. Reserved.