ARTICLE 9 – FLOODPLAIN MANAGEMENT

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9.1 PURPOSE STATEMENT AND OBJECTIVES

It is the purpose of this Article to protect human life and health, minimize property damage and encourage appropriate construction practices to minimize public and private losses due to flood conditions by requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction. Uses of the floodplain which are dangerous to health, safety and property due to water or erosion hazards, or which increase flood heights, velocities or erosion are restricted or prohibited. These provisions attempt to control the alteration of natural floodplains, stream channels and natural protective barriers which are involved in the accommodation of flood waters, and control filling, grading, dredging and other development which may increase flood damage or erosion. Additionally, this Article prevents or regulates the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

The objectives of this Article are to protect human life and health, to help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize flood blight areas, and to insure that potential home buyers are notified that property is in a flood area. The provisions of this Article are intended to minimize damage to public facilities and utilities including water and gas mains, electric lines, telephone lines, sewer lines, streets and bridges located in the floodplain, and prolonged business interruptions. Also, an important floodplain management objective of this Article is to minimize expenditure of public money for costly flood control projects and rescue and relief efforts associated with flooding.

Floodplains are an important asset to the community. They perform vital natural functions including temporary storage of floodwaters, moderation of peak flood flows, maintenance of water quality, groundwater recharge, prevention of erosion, habitat for diverse natural wildlife populations, recreational opportunities and aesthetic quality. These functions are best served if floodplains are kept in their natural state. Wherever possible, the natural characteristics of floodplains and their associated wetlands and water bodies should be preserved and enhanced. Decisions to alter floodplains, especially floodways and stream channels, should be the result of careful planning processes which evaluate resource conditions and human needs.

9.2 GENERAL PROVISIONS

9.2.1 Statutory Authorization

SC Code, Title 5, Articles 7, 23, and 25 (Articles 5 and 7) and Title 6, Article 7, and amendments thereto, delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry.
(Note: Definitions of words and terms related to floodplain management and used in this Article are contained in Appendix A to this Chapter and in Section 59.1, Title 44 of the Code of Federal Regulations.)

9.2.2 Finding of Fact

The special flood hazard areas of North Augusta are subject to periodic inundation which results in loss of life and property, creates health and safety hazards, disrupts commerce and governmental services, creates extraordinary public expenditure requirements for flood protection and relief, and impairs the tax base, all of which adversely affect the

public health, safety and general welfare. Furthermore, flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities. Flood losses are also caused by occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, floodproofed or otherwise unprotected from flood damages.

9.2.3 Applicability

This Article shall apply to all areas of special flood hazard within the jurisdiction of North Augusta, South Carolina as identified by the Federal Emergency Management Agency (FEMA) declared to be a part of this Chapter and adopted in §3.2.2.

9.2.4 Development Permit Required

A development permit is required in conformance with this Chapter prior to the commencement of any development activities on flood hazard land.

9.2.5 Compliance

No structure or land shall hereafter be located, extended, converted or structurally altered without full compliance with the terms of this Article and other applicable regulations.

9.2.6 Interpretation

In the interpretation and application of this Article all provisions shall be considered as minimum requirements, liberally construed in favor of the governing body, and deemed neither to limit nor repeal any other powers granted under state law. This Article is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this Article and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

9.2.7 Partial Invalidity and Severability

If any part of this Article is declared invalid, the remainder of this Article shall not be affected and shall remain in force.

9.2.8 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. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made 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 damages. This Article shall not create liability on the part of North Augusta or by any officer or employee thereof for any flood damages that result from reliance on this Article or any administrative decision lawfully made hereunder.

9.3 ADMINISTRATION

9.3.1 Designation of Local Floodplain Administrator

The Superintendent of Building Standards and/or designee is hereby appointed to be the Local Floodplain Administrator and to administer and implement the provisions of this Article.

9.3.2 Development Permit and Certification Requirements

Application for a development permit shall be made to the Local Floodplain Administrator and the Department of Planning and Economic Development 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, in addition to the information required pursuant to Appendix B, Application Documents, and other provisions of this Chapter, the following information is required:

9.3.2.1 A plot plan that shows the 100-year floodplain contour or a statement that the entire lot is within the floodplain must be provided by the development permit applicant when the lot is within or appears to be within the floodplain as mapped by the Federal Emergency Management Agency or the floodplain identified pursuant to either the Duties and Responsibilities of the Local Floodplain Administrator of §9.3.3 or the Standards for Subdivision Proposals of §9.4.5 and the Standards for Streams without Established Base Flood Elevations and Floodways of §9.4.3. The plot plan must be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same.

9.3.2.2 The plot plan required by §9.3.2.1 must show the floodway, if any, as identified by the Federal Emergency Management Agency or the floodway identified pursuant to either the Duties and Responsibilities of the Local Floodplain Administrator of §9.3.3 or the Standards for Subdivision Proposals of §9.4.5 and the Standards for Streams without Established Base Flood Elevations and Floodways of §9.4.3.

9.3.2.3 Where base flood elevation data is provided as set forth in §9.2.3 or the Duties and Responsibilities of the Local Floodplain Administrator of §9.3.3, the application for a development permit within the flood hazard area shall show:

a. The elevation, in relation to mean sea level, of the lowest floor of all new and substantially improved structures; and
b. If the structure will be floodproofed in accordance with §9.4.2.2, the elevation, in relation to mean sea level, to which the structure will be floodproofed.

9.3.2.4 Where base flood elevation data is not provided as set forth in §9.3.3.16 or the Duties and Responsibilities of the Local Floodplain Administrator of §9.3.3, then the provisions in the Standards for Streams without Established Base Flood Elevations and Floodways of §9.4.3 must be met.

9.3.2.5 Where any watercourse will be altered or relocated as a result of proposed development, the application for a development permit shall include:

a. A description of the extent of watercourse alteration or relocation;
b. An engineering study to demonstrate that the flood-carrying capacity of the altered or relocated watercourse is maintained; and

c. A map showing the location of the proposed watercourse alteration or relocation.

9.3.2.6 When a structure is floodproofed, the applicant shall provide certification from a registered, professional engineer or architect that the non-residential, floodproofed structure meets the floodproofing criteria in §§9.4.2.2 and 9.4.6.

9.3.2.7 A lowest floor elevation or floodproofing certification is required after the lowest floor is completed. As soon as possible after completion of the lowest floor and before any further vertical construction commences, or floodproofing by whatever construction means, whichever is applicable, it shall be the duty of the permit holder to submit to the Local Floodplain Administrator a certification of the elevation of the lowest floor, or floodproofed elevation, whichever is applicable, as built, in relation to mean sea level. Said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. Any work done prior to submission of the certification shall be at the permit holder's risk. The Local Floodplain Administrator shall review the floor elevation survey data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make said corrections required hereby shall be cause to issue a stop-work order for the project.

9.3.2.8 When a structure is located in Zones V, VE or V1-30, certification shall be provided by a registered professional engineer or architect, separate from submitted plans, that new construction or substantial improvement meets the criteria in §9.4.2.9.

9.3.2.9 Upon completion of the development, a registered professional engineer, land surveyor or architect, whichever professional is appropriate in accordance with South Carolina law, shall certify that the requirements of §§9.3.2.6, 9.3.3.7 and 9.3.2.8 are built in accordance with the submitted plans and previous predevelopment certifications.

9.3.2.10 If the proposed project will impact the configuration of the watercourse, floodway or base flood elevation for which a detailed Flood Insurance Study has been developed, the applicant shall apply for and must receive approval for a Conditional Letter of Map Revision (CLOMR) with FEMA prior to the start of actual construction.

9.3.2.11 Within sixty (60) days of completion of an alteration of a watercourse, referenced in §9.3.2.10, the applicant shall submit as-built certification, executed by a registered professional engineer, to FEMA.

9.3.3 Duties and Responsibilities of the Local Floodplain Administrator
Duties of the Local Floodplain Administrator shall include, but not be limited to:

9.3.3.1 Review all development permits to assure that the requirements of this Article have been satisfied.

9.3.3.2 Review proposed development to assure that all necessary permits have been received from those government agencies from 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.

9.3.3.3 Notify adjacent communities and the South Carolina Department of Natural Resources (SCDNR), Land, Water and Conservation Division, 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.

9.3.3.4 In addition to the notifications required in §9.3.3.3, written reports of maintenance records must be maintained to show that maintenance has been provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished. This maintenance must consist of a comprehensive program of periodic inspections, and routine channel clearing and dredging, or other related functions. The assurance shall consist of a description of maintenance activities, frequency of performance, and the local official responsible for maintenance performance. Records shall be kept on file and made available in the event of a FEMA inspection.

9.3.3.5 Prevent encroachments within floodways unless the certification and flood hazard reduction provisions of §9.4.2.9 are met.

9.3.3.6 (deleted in its entirety)

9.3.3.7 Cooperate with neighboring communities with respect to the management of adjoining floodplains and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

9.3.3.8 Notify adjacent communities prior to permitting substantial commercial developments and large subdivisions to be undertaken in areas of special flood hazard and/or flood-related erosion hazards.

9.3.3.9 Obtain and review actual elevation, in relation to mean sea level, of the lowest floor of all new or substantially improved structures in accordance with §§9.3.2.7 or 9.3.2.2.

9.3.3.10 Obtain the actual elevation, in relation to mean sea level, to which the new or substantially improved structures have been floodproofed, in accordance with §9.3.2.7.

9.3.3.11 When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with §9.4.2.2.

9.3.3.12 A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in §§9.3.2.4, 9.3.2.6 and 9.3.2.8.

9.3.3.13 Where interpretation is needed as to the exact location of 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), 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.

9.3.3.14 Where a map boundary showing an area of special flood hazard and field elevations disagree, the base flood elevations for flood protection elevations, as found on an elevation profile, floodway data table, etc., shall prevail. The correct information should be submitted to FEMA as a part of the map maintenance activity requirements outlined in §9.5.

9.3.3.15 When base flood elevation data or floodway data have not been provided in accordance with §9.2.3, obtain, review and reasonably utilize best available base flood elevation data and floodway data available from a federal, state or other source, including data developed pursuant to the standards for subdivision proposals outlined in §9.4.3.3, in order to administer this Article. Data from preliminary, draft and final Flood Insurance Studies constitute best available data from a federal, state or other source. Data must be developed using hydraulic models meeting the minimum requirement of a National Flood Insurance Program (NFIP) approved model. If an appeal is pending on the study in accordance with 44 CFR Ch. 1, Part 67.5 and 67.6, the data does not have to be used.

9.3.3.16 When the exact location of boundaries of the area's special flood hazards conflict with the current, natural topography information at the site, the property owner may apply and be approved for a Letter of Map Amendment by FEMA. A copy of the Letter of Map Amendment issued from FEMA will be maintained by the Local Floodplain Administrator in the permit file.

9.3.3.17 Make on-site inspections of projects in accordance with §9.3.4.

9.3.3.18 Serve notices of violations, issue stop-work orders, revoke permits and take corrective actions in accordance with §9.3.4.

9.3.3.19 Maintain all records pertaining to the administration of this Article and make these records available for public inspection.

9.3.3.20 Notify the South Carolina Department of Natural Resources Land, Water and Conservation Division, State Coordinator for the National Flood Insurance Program within six (6) months of any annexations or detachments that include special flood hazard areas. The Local Floodplain Administrator, in conjunction with the Department of Planning and Development, shall process the necessary amendments to this Article to incorporate applicable maps from surrounding jurisdictions within ninety (90) days of annexation.

9.3.3.21 The President-issued *Executive Order 11988, Floodplain Management May 1977*. E.O. 11988 directs federal agencies to assert a leadership role in reducing flood losses and losses to environmental values served by floodplains. Proposed developments must go through an eight-step review process. Evidence of compliance with the executive order must be submitted as part of the permit review process.

9.3.3.22 Perform an assessment of damage from any origin to the structure using FEMA's Residential Substantial Damage Estimator (RSDE) software to determine if the damage equals or exceeds fifty percent (50%) of the market value of the structure before the damage occurred.

9.3.3.23 Perform an assessment of permit applications for improvements or repairs to be made to a building or structure that equals or exceeds fifty percent (50%) of the market value of the structure before the start of construction. Cost of work counted for determining if and when substantial improvement to a structure occurs shall be cumulative for a period of five years. If the improvement project is conducted in phases, the total of all costs associated with each phase, beginning with the issuance of the first permit, shall be utilized to determine whether "substantial improvement" will occur. The market values shall be determined by one of the following methods:

a. The current assessed building value as determined by the county assessor's office or the value of an appraisal performed by a licensed appraiser at the expense of the owner within the past six (6) months;
b. One or more certified appraisals from a registered professional licensed appraiser in accordance with the laws of South Carolina. The appraisal shall indicate actual replacement value of the building or structure in its pre-improvement condition, less the cost of improvements and depreciation for functionality and obsolescence; or
c. Real estate purchase contract within six (6) months prior to the date of the application for a permit.

9.3.4 Administrative Procedures

9.3.4.1 Inspections of Work in Progress – As the work pursuant to a permit progresses, the Local 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 Local Floodplain Administrator and each member of his inspections department shall have 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.

9.3.4.2 Stop-Work Orders – Whenever a building or part thereof is being constructed, reconstructed, altered or repaired in violation of this Article, the Local Floodplain Administrator 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. Violation of a stop-work order constitutes a misdemeanor.

9.3.4.3 Revocation of Permits – The Local Floodplain Administrator 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.

9.3.4.4 Violations to be Corrected – When the Local Floodplain Administrator 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 on the property he owns.

9.3.4.5 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 Local Floodplain Administrator shall give him written notice, by certified or registered mail to his last known address or by personal service, that:

a. The building or property is in violation of this Article;
b. A hearing will be held before the Local 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,
c. Following the hearing, the Local Floodplain Administrator may issue such order to alter, vacate or demolish the building, or to remove fill as appears appropriate.

9.3.4.6 Order to Take Corrective Action – If, upon a hearing held pursuant to §9.3.4.5, the Local Floodplain Administrator shall find that the building or development is in violation of this Article, he shall make an order in writing to the owner, requiring the owner to remedy the violation within such period, not less than sixty (60) days, the Local Floodplain Administrator may prescribe; provided that where the Local Floodplain 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.

9.3.4.7 Appeal – Any owner who has received an order to take corrective action may appeal from the order to the Board of Zoning Appeals as established by Article 18, Administration, by giving notice of appeal in writing to the Local Floodplain Administrator within ten (10) days following issuance of the final order. In the absence of an appeal, the order of the Local Floodplain Administrator shall be final. The Board of Zoning Appeals shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.

9.3.4.8 Failure to Comply with Order – If the owner of a building or property fails to comply with an order to take corrective action from which no appeal has been taken, or fails to comply with an order of the Board of Zoning Appeals following an appeal, he shall be guilty of a misdemeanor and shall be punished in the discretion of the court.

9.3.4.9 If a structure is declared in violation of this Article and the violation is not remedied, then the Local Floodplain Administrator shall notify the Federal Emergency Management Agency (FEMA) to initiate a Section 1316 of the National Flood Insurance Act of 1968 action against the structure upon the finding that the violator refuses to bring the violation into compliance with the ordinance. Once a violation has been remedied, the Local Floodplain Administrator shall notify FEMA of the remedy and ask that the Section 1316 be rescinded.

9.3.4.10 The following documents are incorporated by reference and may be used by the Local Floodplain Administrator to provide further guidance and interpretation of this ordinance as found on FEMA's website at *www.fema.gov*: FEMA 55 Coastal Construction Manual; all FEMA Technical Bulletins; all FEMA Floodplain Management Bulletins; FEMA 348 Protecting Building Utilities from Flood Damage; and FEMA 499 Home Builder's Guide to Coastal Construction Technical Fact Sheets.

9.4 PROVISIONS FOR FLOOD HAZARD REDUCTION

9.4.1 General Standards

Development may not occur in the Special Flood Hazard Area (SFHA) where alternative locations exist due to the inherent hazards and risks involved. Before a permit is issued, the applicant shall demonstrate that new structures cannot be located out of the SFHA and that encroachments onto the SFHA are minimized. In all areas of special flood hazard the following provisions are required:

9.4.1.1. Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding;

9.4.1.2. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure;

9.4.1.3 All new construction and substantial improvements shall be constructed with flood resistant materials and utility equipment resistant to flood damage in accordance with Technical Bulletin 2, Flood Damage-Resistant Materials Requirements, dated 8/08 and available from FEMA;

9.4.1.4 All new construction and substantial improvements shall be constructed by methods and practices that minimize flood damages;

9.4.1.5 Critical development shall be elevated to the 500 year flood elevation or be elevated to the highest known historical flood elevation (where records are available), whichever is greater. If no data exists establishing the 500 year flood elevation or the highest known historical flood elevation, the applicant shall provide a hydrologic and hydraulic engineering analysis that generates 500 year flood elevation data;

9.4.1.6 Electrical, ventilation, plumbing, heating and air conditioning equipment, including ductwork, and other service facilities shall be designed and/or located at one (1) foot or above the base flood elevation so as to prevent water from entering or accumulating within the components during conditions of flooding. This requirement does not preclude the installation of outdoor faucets for shower heads, sinks, hoses, etc., provided that cut off devices and back flow devices are installed to prevent contamination to the service components and thereby minimize any flood damages to the building;

9.4.1.7 All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

9.4.1.8 New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

9.4.1.9 On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;

9.4.1.10 All gas or liquid storage tanks, either located above ground or buried, shall be anchored to prevent floatation or lateral movement resulting from hydronamic and hydrostatic loads.

9.4.1.11 Any alteration, repair, reconstruction, or improvement to a structure which is in compliance with this Article, shall meet the requirements of new construction as contained in this Article. This includes post-FIRM development and structures.

9.4.1.12 Notwithstanding the provisions of Article 19, Nonconforming Uses, of the North Augusta Development Code, nonconforming buildings may not be enlarged, replaced or rebuilt unless such enlargement or reconstruction is accomplished in conformance with this Article. Provided, however, nothing in this Article shall prevent the repair, reconstruction or replacement of an existing building or structure located totally or partially within the floodway, provided that the bulk of the building or structure below base flood elevation in the floodway is not increased and provided that such repair, reconstruction or replacement meets all of the other requirements of this Article.

9.4.1.13 Nonconforming uses may not be enlarged, changed to another nonconforming use, or resumed if abandoned for a continuous period of six (6) months.

9.4.1.14 A building must meet the specific standards for floodplain construction outlined in §9.4.2, as well as any applicable requirements of the American with Disabilities Act (ADA). The ADA is not justification for issuing a variance or otherwise waiving these requirements. The cost of improvements required to meet ADA provisions shall be included in the costs of the improvements for calculating substantial improvement.

9.4.2 Specific Standards

In all areas of special flood hazard (Zones A, AE, AH, AO, A1-30, V, and VE) where base flood elevation data has been provided, as set forth in §§9.2.3 or 9.3.3.13 or outlined in §9.3.4, the following provisions are required:

9.4.2.1 Residential Construction – New construction and substantial improvement of any residential structure, including manufactured homes, shall have the lowest floor elevated no lower than one (1) foot above the base flood elevation. No basements are permitted. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with §9.4.2.5.

9.4.2.2 Non-Residential Construction – New construction and substantial improvement of any commercial, industrial or non-residential structure, including manufactured homes, shall have the lowest floor elevated no lower than one (1) foot above the level of the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with §9.4.2.5. No basements are permitted. Structures located in “A” Zones may be floodproofed 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 certifications shall be provided to the Local Floodplain Administrator as set forth in the floodproofing certification requirements in §9.3.2.6. A variance may be considered for wet-floodproofing agricultural structures in accordance with the criteria outlined in §9.6.5 of this Article. Agricultural structures not meeting the

criteria of §9.6.5 must meet the non-residential construction standards and all other applicable provisions of this Article. Structures which are floodproofed are required to have an approved maintenance plan with an annual exercise. The maintenance plan must be approved by the Local Floodplain Administrator and notification of the annual exercise shall be provided to same.

9.4.2.3 Manufactured Homes –

a. Manufactured homes that are placed or substantially improved on sites outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufactured home park or subdivision on which a manufactured home has incurred substantial damage as the result of a flood, must be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated no lower than one (1) foot above the base flood elevation and must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.
b. Manufactured homes that are to be placed or substantially improved on sites in an existing manufactured home park or subdivision that is not subject to the provisions of §9.4.2.3.a, must be elevated so that the lowest floor of the manufactured home is elevated to no lower than one (1) foot above the base flood elevation, and must be securely anchored to an adequately anchored foundation to resist flotation, collapse and lateral movement.
c. 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 §40-29-10 of the South Carolina Manufactured Housing Board Regulations, as amended. Additionally, when the elevation requirement 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 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.
d. 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 Floodplain Administrator and the Department of Public Safety Emergency Preparedness Coordinator.

9.4.2.4 Recreational Vehicles – A recreational vehicle is ready for highway use if it is on wheels or a jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions. Recreational vehicles placed on sites shall either be located in a flood hazard zone site for fewer than one hundred eighty (180) consecutive days or be fully licensed and ready for highway use, or meet the development permit and certification requirements of §9.3.3 and manufactured home standards of §§9.4.2.3 and 9.4.2.5.

9.4.2.5 Elevated Buildings – New construction and substantial improvements of elevated buildings that include fully enclosed areas below the lowest floor that are usable solely for the parking of vehicles, building access or limited storage in an area other than a basement, and which are subject to flooding, shall be designed to preclude finished space and be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.

a. Designs for complying with this requirement must either be certified by a professional engineer or architect or meet or exceed all of the following minimum criteria:
   1. Provide a minimum of two (2) openings on different walls having a total net area of not less than one (1) square inch for every one (1) square foot of enclosed area subject to flooding. If there are multiple enclosed areas, each area must have openings in its exterior walls;
   2. The bottom of all openings shall be no higher than one (1) foot above the higher of the interior or exterior grade immediately under the opening;
   3. Only the portions of openings that are below the base flood elevation (BFE) can be counted towards the required net open area;
   4. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions; and,
   5. Fill placed around foundation walls must be graded so that the grade inside the enclosed area is equal to or higher than the adjacent grade outside the building on at least one (1) side of the building.
b. Hydrodynamic pressure must be considered in the design of any foundation system where velocity waters or the potential for debris flow exists. If flood velocities are excessive (greater than five (5) feet per second), foundation systems other than solid foundation walls should be considered so that obstructions to damaging flood flows are minimized.
c. For enclosures below the lowest floor, access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator).
d. The interior portion of enclosures below the lowest floor shall not be finished or partitioned into separate rooms except to enclose a single storage area, must be void of utilities except for essential lighting as required for safety, and cannot be temperature controlled. One (1) wet location switch and/or outlet connected to a ground fault interrupt breaker may be installed below the required lowest floor elevation specified in §§9.4.2.1, 9.4.2.2 and 9.4.2.3.
e. All construction materials below the required lowest floor elevation specified in §§9.4.2.1, 9.4.2.2 and 9.4.2.3 shall be of flood resistant materials.

9.4.2.6 Accessory Structures – A detached accessory structure or garage, the cost of which is greater than $3,000, must comply with the requirements as outlined in FEMA's Technical Bulletin 7-93 *Wet Floodproofing Requirements* or be elevated in accordance with §§9.4.2.1 and 9.4.2.5 or dryproofed in accordance with §9.4.2.2. If accessory structures of $3,000 or less are to be placed in the floodplain, the following criteria shall be met:

a. Accessory structures shall not be used for any uses other than the parking of vehicles and storage;
b. Accessory structures shall be designed to have low flood damage potential;
c. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
d. Accessory structures shall be firmly anchored to prevent flotation, collapse and lateral movement of the structure;
e. Service facilities such as electrical and heating equipment shall be installed in accordance with §9.4.1.5; and
f. Openings to relieve hydrostatic pressure during a flood shall be provided below base flood elevation in conformance with §9.4.2.5.

g. Accessory structures shall be built with flood resistant materials in accordance with Technical Bulletin 2, *Flood Damage-Resistant Materials Requirements,* dated 8/08 and available from the Federal Emergency Management Agency. Class 4 and 5 materials referenced therein are acceptable flood resistant materials.

9.4.2.7 Swimming Pool Utility Equipment Rooms – If the building cannot be built at or above the BFE because of functionality of the equipment, then a structure to house the utilities for a swimming pool may be built below the BFE with the following provisions:

a. The building must meet the requirements for accessory structures in §9.4.2.6; and
b. The utilities must be anchored to prevent flotation and shall be designed to prevent water from entering or accumulating within the components during conditions of the base flood.

9.4.2.8 Elevators – The following requirements are applicable to the construction of elevators subject to this Article:

a. A float switch system or another system that provides the same level of safety is required when there is a potential for the elevator cab to descend below the BFE during a flood per FEMA's Technical Bulletin 4-93: *Elevator Installation for Buildings Located in Special Flood Hazard Areas.*
b. All equipment that may have to be installed below the BFE such as counter weight roller guides, compensation cable and pulleys, oil buffers for traction elevators and the jack assembly for a hydraulic elevator must be constructed using flood-resistant materials where possible per FEMA's Technical Bulletin 4-93: *Elevator Installation for Buildings Located in Special Flood Hazard Areas.*

9.4.2.9 Floodways – Areas designated as floodways are located within areas of special flood hazard established in §9.2.3. The floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris and potential projectiles and erosion potential.

The following provisions shall apply within floodways:

a. No encroachments, including fill, new construction, substantial improvements, additions and other developments shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood. Such certification and technical data shall be presented to the Local Floodplain Administrator.
b. A Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must be obtained upon completion of the proposed development.
c. If the above are satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of §9.4.
d. No manufactured homes shall be permitted, except in an existing manufactured home park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring and the elevation standards of §9.4.2.3 and the encroachment standards of 9.4.2.9.a are met.
e. Permissible uses within floodways may include general farming, pasture, outdoor plant nurseries, horticulture, forestry, wildlife sanctuary, game farm and other similar agricultural, wildlife and related uses. Also, lawns, gardens, play areas, picnic

grounds, hiking and horseback riding trails and Greeneways are acceptable uses, provided that they do not employ structures or fill. Substantial development of a permissible use may require a no-impact certification. The uses listed in this section are permissible only if and to the extent that they do not cause any increase in base flood elevations or changes to the floodway configuration.

9.4.2.10 Fill – Fill is discouraged because storage capacity is removed from floodplains. Elevating buildings by other methods must be considered. An applicant shall demonstrate that fill is the only alternative to raising the building to at least one (1) foot above the base flood elevation, and that the amount of fill used will not affect the flood storage capacity or adversely affect adjacent properties. The following provisions shall apply to all fill placed in the special flood hazard area:

a. Fill may not be placed in the floodway unless it is in accordance with §9.4.2.9.a;
b. Fill may not be placed in wetlands without the required state and federal permits;
c. Fill must consist of soil and rock materials only. Dredged material may be used as fill only upon certification of suitability by a registered professional geotechnical engineer. Landfills, rubble fills, dumps and sanitary fills are not permitted in the floodplain;
d. Fill used to support structures must comply with ASTM Standard D-698, and its suitability to support structures certified by a registered, professional engineer;
e. Fill slopes shall be no greater or steeper than two (2) horizontal to one (1) vertical. Flatter slopes may be required where velocities may result in erosion; and
f. The use of fill shall not increase flooding or cause drainage problems on neighboring properties.
g. Fill may not be used for structural support in the coastal high hazard areas.
h. Fill shall meet the requirements of FEMA Technical Bulletin 10-01, *Ensuring That Structures Built on Fill in or Near Special Flood Hazard Areas Are Reasonably Safe from Flooding.*

9.4.3 Standards for Streams without Established Base Flood Elevations and Floodways

Located within the areas of special flood hazard (Zones A and V) established in §9.2.3 are small streams where no base flood data has been provided and where no floodways have been identified. The following provisions apply within such areas:

9.4.3.1 In all areas of special flood hazard where base flood elevation data are not available, the applicant shall provide a hydrologic and hydraulic engineering analysis that generates base flood elevations for all subdivision proposals and other proposed developments greater than two (2) lots or one (1) acre, whichever is less.

9.4.3.2 No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within one hundred (100) feet of the stream bank 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.

9.4.3.3 If §9.4.3.1 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 hazard ordinance provisions of §9.4 and shall be elevated or floodproofed in accordance with elevations established in accordance with §9.3.4.10. Data from preliminary, draft and final Flood Insurance Studies constitutes best

available data. Refer to FEMA Floodplain Management Technical Bulletin 1-98 *Use of Flood Insurance Study (FIS) Data as Available Data.* If an appeal is pending on a study in accordance with 44 CFR Ch. 1, Part 67.5 and 67.6, the data does not have to be used.

9.4.3.4 When base flood elevation (BFE) data is not available from a federal, state or other source, one of the following methods may be used to determine a BFE. For further information regarding the BFE determination, refer to FEMA's manual *Managing Floodplain Development in Approximate Zone A Areas:*

a. Contour Interpolation
   1) Superimpose approximate Zone A boundaries onto a topographic map and estimate a BFE;
   2) Add one-half of the contour interval of the topographic map that is used to the BFE.
b. Data Extrapolation – A BFE can be determined if a site within five hundred (500) feet upstream of a stream reach for which a 100-year profile has been computed by detailed methods, and the floodplain and channel bottom slope characteristics are relatively similar to the downstream reaches. No hydraulic structures shall be present.
c. Hydrologic and Hydraulic Calculations – Perform hydrologic and hydraulic calculations to determine BFEs using FEMA approved methods and software.

9.4.4 Standards for Streams With Established Base Flood Elevations But Without Floodways

Along rivers and streams where Base Flood Elevation (BFE) data are provided but no floodway is identified for a Special Flood Hazard Area on the Flood Insurance Rate Map (FIRM) or in the FIS, the following provision shall apply:

9.4.4.1 No encroachments including fill, new construction, substantial improvements, or other developments 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 (1) foot at any point within the City.

9.4.5 Standards for Subdivision Proposals and Other Proposed Development

9.4.5.1 All subdivision proposals and other proposed new development shall be consistent with the need to minimize flood damage and are subject to all applicable standards in these regulations;

9.4.5.2 All subdivision proposals and other proposed new development shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

9.4.5.3 Where possible, provision shall be made for alternative vehicular access and escape routes in the event that normal routes are blocked or destroyed by flooding;

9.4.5.4 All subdivision proposals and other proposed development shall have adequate drainage provided to reduce exposure to flood hazards; and,

9.4.5.5 The applicant shall meet the requirement to submit technical data to FEMA in §9.5 when a hydrologic and hydraulic analysis is completed that generates base flood elevations.

9.4.6 Standards for Areas of Shallow Flooding (AO Zones)

Located within the areas of special flood hazard established in §9.2.3, are areas designated as shallow flooding. The following provisions shall apply within such areas:

9.4.6.1 All new construction and substantial improvements of residential structures shall have the lowest floor elevated to at least as high as the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor shall be elevated at least three (3) feet above the highest adjacent grade.

9.4.6.2 All new construction and substantial improvements of non-residential structures shall:

a. Have the lowest floor elevated to at least as high as the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor shall be elevated at least three (3) feet above the highest adjacent grade; or,
b. Be completely floodproofed 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. Certification is required as stated in §9.3.4.
c. All structures on slopes must have drainage paths around them to guide water away from the structures.

9.5 MAP MAINTENANCE ACTIVITIES

9.5.1 Purpose

The National Flood Insurance Program (NFIP) requires flood data to be reviewed and approved by FEMA. This ensures that flood maps, studies and other data identified in §9.2.3 accurately represent flooding conditions so that appropriate floodplain management criteria are based on current data.

9.5.2 Requirement to Submit New Technical Data

For all development proposals that impact floodway delineations or base flood elevations, the Local Floodplain Administrator shall ensure that technical data reflecting such changes be submitted to FEMA within six months of the date such information becomes available. These development proposals include:

a. Floodway encroachments that increase or decrease base flood elevations or alter floodway boundaries;
b. Fill sites to be used for the placement of proposed structures where the applicant desires to remove the site from the special flood hazard area;
c. Alteration of watercourses that result in a relocation or elimination of the special flood hazard area, including the placement of culverts; and
d. Subdivision or large scale development proposals requiring the establishment of base flood elevations in accordance with §9.4.3.1.

9.5.2.1 It is the responsibility of the applicant to have technical data, required in accordance with §9.5, prepared in a format for a Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR) and submitted to FEMA. Submittal and processing fees for these map revisions shall also be the responsibility of the applicant.

9.5.2.2 The Local Floodplain Administrator shall require a CLOMR prior to the issuance of a floodplain development permit for:

a. Proposed floodway encroachments that increase the base flood elevation; and
b. Proposed development which increases the base flood elevation by more than one (1) foot in areas where FEMA has provided base flood elevations but no floodway.

9.5.2.3 Floodplain development permits issued by the Local Floodplain Administrator shall be conditioned upon the applicant obtaining a LOMR from FEMA for any development proposal subject to §9.5.

9.5.3 Right to Submit New Technical Data

The Local Floodplain Administrator may request changes to any of the information shown on an effective map that does not impact floodplain or floodway delineations or base flood elevations, such as labeling or planimetric details. Such a submission shall include appropriate supporting documentation made in writing by the local jurisdiction and may be submitted at any time.

9.6 VARIANCE PROVISIONS

9.6.1 Establishment of Appeal Board

The Board of Zoning Appeals as established by the City of North Augusta in Article 18, Administration, of the North Augusta Development Code, shall hear and decide requests for variances from the requirements of this Article.

9.6.2 Right to Appeal

Any person aggrieved by the decision of the Board of Zoning Appeals or any taxpayer may appeal such decision as provided in Article 18, Administration of the North Augusta Development Code and pursuant to S.C. Code §6-29-820 to the circuit court in and for the counties of Aiken and Edgefield as applicable.

9.6.3 Historic Structures

Variances may be issued for 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 the variance is the minimum necessary to preserve the historic character and design of the structure.

9.6.4 Functionally Dependent Uses

Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of §9.6 are met, no reasonable alternatives exist, and the development is protected by methods that minimize flood damage and create no additional threat to public safety.

9.6.5 Agricultural Structures

Variances may be issued to wet floodproof an agricultural structure provided it is used solely for agricultural purposes. In order to minimize flood damages during the base flood and the threat to public health and safety, the structure must meet all of the conditions and considerations of §9.6.8, this section, and the following standards:

9.6.5.1 Use of the structure must be limited to agricultural purposes as listed below:

a. Pole frame buildings with open or closed sides used exclusively for the storage of farm machinery and equipment;
b. Steel grain bins and steel frame corn cribs;
c. General purpose barns for the temporary feeding of livestock which are open on at least one (1) side;
d. For livestock confinement buildings, poultry houses, dairy operations and similar livestock operations, variances may not be issued for structures which were substantially damaged. New construction or substantial improvement of such structures must meet the elevation requirements of §9.4.2.2 of this Article;

9.6.5.2 The agricultural structure must be built or rebuilt, in the case of an existing building which is substantially damaged, with flood-resistant materials for the exterior and interior building components and elements below the base flood elevation;

9.6.5.3 The agricultural structure must be adequately anchored to prevent flotation, collapse, or lateral movement. All of the structure's components must be capable of resisting specific flood-related forces including hydrostatic, buoyancy, hydrodynamic and debris impact forces. Where flood velocities exceed five (5) feet per second, fast-flowing floodwaters can exert considerable pressure on the building's enclosure walls or foundation walls;

9.6.5.4 The agricultural structure must meet the venting requirement of §9.4.2.5.

9.6.5.5 Any mechanical, electrical or other utility equipment must be located above the base flood elevation so that it is contained within a watertight, floodproofed enclosure which is capable of resisting damage during flood conditions. The structure must comply with §9.4.1.5;

9.6.5.6 The agricultural structure must comply with the floodway encroachment provisions of §9.4.2.9; and,

9.6.5.7 Major equipment, machinery or other contents must be protected. Such protection may include protective watertight floodproofed areas within the building, the use of equipment hoists for readily elevating contents, permanently elevating contents on pedestals or shelves above the base flood elevation, or determining that property owners can safely remove contents without risk to lives and that the contents will be located to a specified site out of the floodplain.

9.6.6 Considerations

In passing upon such applications, the Board of Zoning Appeals shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Article, and:

9.6.6.1 The danger that materials may be swept onto other lands to the injury of others;

9.6.6.2 The danger to life and property due to flooding or erosion damage, and the safety of access to the property in times of flood for ordinary and emergency vehicles;

9.6.6.3 The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

9.6.6.4 The importance of the services provided by the proposed facility to the community;

9.6.6.5 The necessity to the facility of a waterfront location, where applicable;

9.6.6.6 The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;

9.6.6.7 The compatibility of the proposed use with existing and anticipated development, and the relationship of the proposed use to the Comprehensive Plan and floodplain management program for that area;

9.6.6.8 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

9.6.6.9 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.

9.6.6.10 Agricultural structures must be located in wide, expansive floodplain areas, where no other alternative location for the agricultural structure exists. The applicant must demonstrate that the entire farm acreage, consisting of a contiguous parcel of land on which the structure is to be located, must be in the Special Flood Hazard Area and no other alternative locations for the structure are available.

9.6.7 Findings

Findings listed above shall be submitted to the Board of Zoning Appeals, in writing, and included in the application for a variance. Additionally, comments from the SC Department of Natural Resources Land, Water and Conservation Division, State Coordinator's Office, must be taken into account and included in the permit file.

9.6.8 Floodways

Variances shall not be issued within any designated floodway if any increases in flood levels during the base flood discharge would result unless a CLOMR is obtained prior to the issuance of the variance. In order to insure the project is built in compliance with the CLOMR for which a variance is granted, the applicant must provide a performance guarantee and letter of credit for one hundred twenty-five percent (125%) of the cost to perform the development. The performance guarantee and letter of credit shall be valid for a period equal to one hundred twenty-five percent (125%) of the estimated time required to complete construction of the development.

9.6.9 Conditions

Upon consideration of the factors listed above and the purposes of this Article, the Board of Zoning Appeals may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Article. The following conditions shall apply to all variances:

9.6.9.1 Variances may not be issued when the variance will make the structure in violation of other federal, state, or local laws, regulations or ordinances.

9.6.9.2 Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

9.6.9.3 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, 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 nuisance, cause fraud on or victimization of the public or conflict with existing local laws or ordinances.

9.6.9.4 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 a written statement that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation. Such notification shall be maintained with a record of all variance actions.

9.6.9.5 The Local Floodplain Administrator shall maintain the records of all appeal actions and report any variances to FEMA upon request.

9.6.9.6 Variances shall not be issued for development initiated without a permit or other development that is not in compliance with this Article. Violations must be corrected in accordance with §9.3.5.5 of this Article.

9.7 LEGAL STATUS

9.7.1 Effect on Rights and Liabilities under the Existing Flood Damage Prevention Ordinance

This Article in part comes forward by re-enactment of some of the provisions of the Flood Damage Prevention Ordinance enacted on July 15, 1980, as amended, and it is not the intention to repeal but rather to re-enact and continue to enforce without interruption of such existing provisions, so that all rights and liabilities that have accrued thereunder are reserved and may be enforced. The enactment of this Article shall not affect any action, suit or proceeding instituted or pending. All provisions of the Flood Damage Prevention Ordinance of North Augusta enacted on July 15, 1980, as amended, which are not reenacted herein are repealed.

9.7.2 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 Building Official or his authorized agents before the time of passage of this Article; provided, however, that when construction is not begun under such

outstanding permit within a period of sixty (60) days subsequent to passage of this Article, construction or use shall be in conformity with this Article.

9.7.3 Effective Date

This Article shall become effective upon adoption.