

chapter 9

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Section 9.1 Post-construction Stormwater

Section 9.1.1 Purpose

The purpose of the regulations in this Post Construction Ordinance (PCO) is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post construction stormwater runoff and non-point source pollution associated with new development and redevelopment. It has been determined that proper management of construction-related and post construction stormwater runoff will minimize damage to public and private property and infrastructure, safeguard the public health safety and general welfare, and protect water and aquatic resources.

Section 9.1.2 Permitting Authority

The Department of Environmental Quality for the State of North Carolina (Department) maintains permitting authority for post construction stormwater permitting in the Town of Waxhaw. Although Waxhaw is in Union County, which is a Phase II tipped county, the State has not assigned jurisdiction to the local entity as of January 2020. Permit applications are to be submitted to the Department of Water Quality. The Town of Waxhaw is in the Department of Environmental Quality Mooresville Region. Applications shall be prepared per current North Carolina administrative Code found under the Stormwater rules 15A NCAC 02H.

Section 9.1.3 Drainage Plan Approval Requirements

- A. No development or use of land which involved or would create more than 20,000 square feet of impervious ground cover, except for land development or used for agricultural purposes, shall be permitted without the submission and approval of a drainage plan. The drainage plan shall include water quality and detention requirements in accordance with the Town of Waxhaw Stormwater Design Manual. No certificate of zoning compliance, certificate of occupancy, or building permit for such development shall be issued until the drainage plan is approved by the Town Engineer.
- B. Impervious ground cover in existence prior to October 1, 1978 of these regulations shall not be used in measuring the 20,000 square feet identified in Subsection (1) above.
- C. Development plans shall be prepared per this PCO and all applicable State, County and Local regulations.

Section 9.1.5 Standards for Plan Approval

The following standards shall be met for approval of a stormwater drainage plan:

- A. The Town Engineer shall review the drainage plan for compliance with the standards contained in the Town of Waxhaw Stormwater Design Manual, the current edition of the Engineering Design and Construction Standards Manual, and any other relevant and appropriate standard established by the Town Engineer.
- B. The Town Engineer will not approve a drainage plan with increased impervious ground cover, unless the drainage plan identifies measures to control and limit runoffs to peak levels no greater than would occur from the site if left in its natural, undeveloped condition.

Section 9.1.6 Design Manual

- A. Reference to design manual.** The Town Engineer/Stormwater Administrator shall use the policy, criteria, and information, including technical specifications and standards, in the Design Manual as the basis for decisions about the design, implementation and performance of structural and non-structural stormwater BMPs. The Design Manual includes a list of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice. Stormwater treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards of the PCO and the Phase II laws. Failure to construct stormwater treatment practices in accordance with these criteria may subject the violator to a civil penalty.
- B. Relationship of design manual to other laws and regulations.** If the specifications or guidelines of the Design Manual are more restrictive or apply a higher standard

than other laws or regulations, that fact shall not prevent application of the specifications or guidelines in the Design Manual.

C. *Changes to standards and specifications.* Standards, specifications, guidelines, policies, criteria, or other information in the Design Manual in effect at the time of acceptance of a complete application shall control and shall be utilized in reviewing the application and in implementing the PCO with regard to the application.

D. *Amendments to design manual.* The Design Manual may be updated and expanded from time to time, based on advancements in technology and engineering, improved knowledge of local conditions, or local monitoring or maintenance experience. Prior to amending or updating the Design Manual, proposed changes shall be generally publicized and made available for review, and an opportunity for comment by interested persons shall be provided. The current Design Manual is available on the Town of Waxhaw website.

Section 9.1.7 Relationship to Other Laws

A. *Conflict of laws.* The PCO is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of the PCO are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of the PCO imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human or environmental health, safety, and welfare, shall control.

B. *Private Agreements.* The PCO is not intended to revoke or repeal any easement, covenant, or other private agreement. However, where the regulations of the PCO are more restrictive or impose higher standards or requirements than such easement, covenant, or other private agreement, then the requirements of the PCO shall govern. Nothing in the PCO shall modify or repeal any private covenant or deed restriction, but such covenant or restriction shall not legitimize any failure to comply with the PCO. In no case shall the Town be obligated to enforce the provisions of any easements, covenants, or agreements between private parties.

Section 9.1.8 Administration and Procedures

A. An approved stormwater permit from the North Carolina Department of Environmental Quality shall be submitted prior to the approval of the drainage plan from the Town.

B. The stormwater permit number shall be provided on the Final Plat and the approved operations and maintenance plan shall be submitted for Final Plat approval.

Section 9.1.9 Standards

All development and redevelopment to which the PCO applies shall comply with the

standards of this section.

All built-upon area for development and redevelopment subject to the requirements of this PCO shall be at a minimum thirty feet landward of all perennial and intermittent surface waters. This built-upon area setback can be located within the stream buffer area defined by this PCO, but any disturbances within the built-upon area setback must also comply with the regulated floodways. A surface water shall be deemed present if the feature is approximately shown on either the most recent version of the soil survey map prepared by the Natural Resources Conservation Service of the United States Department of Agriculture or the most recent version of the 1:24,000 scale (7.5 minute) quadrangle topographic maps prepared by the United States Geologic Survey. An exception to this requirement shall be granted if one or more of the following is satisfied and documented:

- A. When a landowner or other affected party believes that the maps have inaccurately depicted surface waters, he or she shall consult the Army Corps of Engineers. The Army Corps of Engineers shall make on-site determinations. Surface waters that appear on the maps shall not be subject to this standard if this on-site determination shows that they fall into one of the following categories:
 - 1. Ditches and manmade conveyances other than modified natural streams unless constructed for navigation or boat access;
 - 2. Manmade ponds and lakes located outside natural drainage ways;
 - 3. Ephemeral (stormwater) streams.
- B. An unnecessary hardships would result from the strict application of this requirement.
- C. Based on a determination by the Army Corps of Engineers, a lack of practical alternatives exists for accomplishing the basic purpose of the project in a manner that would avoid or result in less adverse impact to surface waters considering the potential for a reduction in size, configuration, or density and all alternative designs.

Section 9.1.10 Standards for Stormwater Control Measures

- A. Evaluation according to contents of the Design Manual. All stormwater control measures and stormwater treatment practices (also referred to as Best Management Practices, or BMPs) required under the PCO shall be evaluated by the Town Engineer/Stormwater Administrator according to the policies, criteria, and information, including technical specifications, standards and the specific design criteria for each stormwater best management practice contained in the Design Manual. The Town Engineer/Stormwater Administrator shall determine whether these measures will be adequate to meet the requirements of the PCO.

- B. Determination of Adequacy; Presumptions and Alternative. Stormwater treatment practices that are designed, constructed, and maintained in accordance with the criteria and specifications in the Design Manual will be presumed to meet the minimum water quality and quantity performance standards of the PCO. Whenever an applicant proposes to utilize a practice or practices not designed and constructed in accordance with the criteria and specifications in the Design Manual, the applicant shall have the burden of demonstrating that the practice(s) will satisfy the minimum water quality and quantity performance standards of the PCO before it can be approved for use. The Town Engineer/Stormwater Administrator may require the applicant to provide such documentation, calculations, and examples as necessary to determine whether such an affirmative showing is made.
- C. A Digital Record Submittal shall be provided to the Town of Waxhaw. Upon submittal of as-built plans, the location of storm drainage pipes, inlets, outlets and the location of all BMPs as well as Tree Save Area must be delivered to the Town Engineer or his/her designee in the digital format specified in the Design Manual.

Section 9.1.11 *Maintenance*

- A. It shall be the responsibility of the Home owner or Homeowner's Association to provide for maintenance (as specified in the Design Manual) of structural BMPs that are installed pursuant to the PCO. Maintenance responsibility shall be clearly identified on the construction documents and final plat.
- B. All BMPs shall include adequate and perpetual access and sufficient area, by easement or otherwise, for inspection, maintenance, and repair or reconstruction.
- C. The owner of a structural BMP installed pursuant to the PCO and as identified on the final plat shall maintain and operate the BMP so as to preserve and continue its function in controlling stormwater quality and quantity at the degree or amount of function for which the structural BMP was designed.
- D. For trees damaged or removed due to natural disasters, the owner shall be required to replace the trees within a timeframe specified by the Stormwater Administrator. For trees damaged or removed due to other reasons, the owner shall be required to replace the trees within a timeframe specified by the Stormwater Administrator with the following exception, the trees shall be replaced at twice the specified density. In addition, the owner may be subject to fines.
- E. An annual maintenance inspection and report is required by the permit. The person responsible for maintenance of any BMP installed pursuant to the PCS shall submit to the Stormwater Administrator an inspection report from a qualified professional performing services only in their area of competence. An original inspection report shall be provided to the Town of Waxhaw beginning one year from the date of as-built certification and each year thereafter on or before the anniversary date of the as-built certification.

- F. At the time that as-built plans are provided to the Stormwater Administrator and prior to final approval of a project for compliance with the PCS, but in all cases prior to placing the BMPs in service, the applicant or owner of the site must execute an operation and maintenance agreement that shall be binding on all current and subsequent owners of the site, portions of the site, and lots or parcels served by the structural BMP. This maintenance agreement shall be recorded to the Register of Deeds. Failure to execute an operation and maintenance agreement within the time frame specified by the Town Engineer/ Stormwater Administrator may result in assessment of penalties. Until the transference of all property, sites, or lots served by the structural BMP, the original owner or applicant shall have primary responsibility for carrying out the provisions of the maintenance agreement. At the discretion of the Town Engineer/Stormwater Administrator, certificates of occupancy may be withheld pending receipt of an operation and maintenance agreement. The operation and maintenance agreement shall require the owner or owners to maintain, repair and, if necessary, reconstruct the structural BMP, and shall state the terms, conditions, and schedule of maintenance for the structural BMP. In addition, it shall grant to the Town a right of entry in the event that the Town Engineer/Stormwater Administrator has reason to believe it has become necessary to inspect, monitor, maintain, repair, or reconstruct the structural BMP. However, in no case shall the right of entry, of itself, confer an obligation on the Town to assume responsibility for the structural BMP. The operation and maintenance agreement must be approved by the Town Engineer/ Stormwater Administrator prior to plan approval, and it shall be referenced on the final plat.
- G. For all structural BMPs required pursuant to the PCO that are to be or are owned and maintained by a homeowners' association, property owners' association, or similar entity, the required operation and maintenance agreement shall include the provisions described in the Design Manual.
- H. Inspections and inspection programs by the Town may be conducted or established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to, reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in BMPs; and evaluating the condition of BMPs. If the owner or occupant of any property refuses to permit such inspection, the Town Engineer/Stormwater Administrator shall proceed to obtain an administrative search warrant pursuant to G.S. 15-27.2 or its successor. No person shall obstruct, hamper or interfere with the Town Engineer/Stormwater Administrator while carrying out his or her official duties.
- I. The owner of each structural BMP shall keep records of inspections, maintenance, and repairs for at least five years from the date of creation of the record and shall submit the same upon reasonable request to the Town Engineer/Stormwater Administrator.

- J. Every structural BMP installed pursuant to the PCO shall be made accessible for adequate inspection, maintenance, reconstruction and repair by a maintenance easement. The easement shall conform to standards listed in the Design Manual, and be recorded and its terms shall specify who may make use of the easement and for what purposes.
- K. This ordinance prohibits the direct discharge of runoff to the roadway or storm sewer system from private property that is not explicitly identified in the approved construction documents. Examples of such discharge are but would not be limited to extending roof drains to the right of way or direct discharge of pool water to the storm drain.

Section 9.2 Sedimentation and Erosion Control

Section 9.2.1 Preamble

The sedimentation of streams, lakes and other waters of the state constitute a major pollution problem. Sedimentation occurs from the erosion or depositing of soil and other materials into the waters, principally from construction sites and road maintenance. The continued development of the town will result in an intensification of pollution through sedimentation unless timely and appropriate action is taken. Control of erosion and sedimentation is deemed vital to the public interest and necessary to the public health and welfare, and expenditures of funds for erosion and sedimentation control programs shall be deemed for a public purpose. It is the purpose of this chapter to provide for the creation, administration, and enforcement of a program and for the adoption of minimal mandatory standards which will permit development of the town to continue with the least detrimental effects from pollution by sedimentation.

Section 9.2.2 Purpose

The purpose of this section is:

- A. Regulating certain land disturbing activity to control accelerated erosion and sedimentation in order to prevent the pollution of water and other damage to lakes, watercourses, and other public and private property by sedimentation; and
- B. Establishing procedures through which these purposes can be fulfilled.

Section 9.2.3 Jurisdiction

- A. The ordinance from which this section is derived is hereby adopted by the Board of Commissioners to apply to all areas within the corporate limits of the town.
- B. The North Carolina Sedimentation Control Commission shall have jurisdiction, to the exclusion of local governments, to adopt rules concerning land disturbing activities that are:

1. Conducted by the state.
2. Conducted by the United States.
3. Conducted by persons having the power of eminent domain other than a local government.
4. Conducted by a local government.
5. Funded in whole or in part by the state or the United States.
6. Related to oil and gas exploration and development on the well pad site.

Section 9.2.4 Exclusions

This section shall not apply to the following land disturbing activities:

- A. Activities, including the production and activities relating or incidental to the production of crops, grains, fruits, vegetables, ornamental and flowering plants, dairy, livestock, poultry, and all other forms of agriculture undertaken on agricultural land for the production of plants and animals useful to man, including, but not limited to:
 1. Forage and sod crops, grain and feed crops, tobacco, cotton, and peanuts.
 2. Dairy animals and dairy products.
 3. Poultry and poultry products.
 4. Livestock, including beef cattle, llamas, sheep, swine, horses, ponies, mules, and goats.
 5. Bees and apiary products.
 6. Fur producing animals.
 7. Mulch, ornamental plants, and other horticultural products. For purposes of this section, "mulch" means substances composed primarily of plant remains or mixtures of such substances.
- B. An Activity undertaken on forestland for the production and harvesting of timber and timber products and conducted in accordance with standards defined by the Forest Practice Guidelines Related to Water Quality (Best Management Practices), as adopted by the North Carolina Department of Agriculture and Consumer Services. If land-disturbing activity undertaken on forestland for the production and harvesting of timber and timber products is not conducted in accordance with standards defined by the Forest Practice Guidelines Related to Water Quality, the provisions of this ordinance shall apply to such activity and any related land-disturbing activity on the

tract.

- C. An activity for which a permit is required under the Mining Act of 1971, Article 7 of Chapter 74 of the General Statutes.
- D. A land-disturbing activity over which the State has exclusive regulatory jurisdiction as provided in G.S. 113A-56(a).
- E. An activity which is essential to protect human life during an emergency.
- F. Activities undertaken to restore the wetland functions of converted wetlands to provide compensatory mitigation to offset impacts permitted under Section 404 of the Clean Water Act.
- G. Activities undertaken pursuant to Natural Resources Conservation Service standards to restore the wetlands functions of converted wetlands as defined in Title 7 Code of Federal Regulations § 12.2.

Section 9.2.5 *General Requirements and Objectives*

- A. Plan required. No person shall initiate any land disturbing activity which uncovers more than 12,000 square feet of land for commercial, industrial, or subdivision development without having a plan approved. Land disturbing activities resulting from single-family residential development on an individual lot which disturbs one acre of land or less are excluded from plan submittal and approval, provided that erosion control devices are installed in accordance with the details for residential lot development found in the Town of Waxhaw Engineering, Standards and Procedures Manual. Single-family residential development exceeding one acre of land disturbed will be required to submit for plan approval. Land disturbing activities resulting from single-family residential development on multiple contiguous lots which disturb a total of one acre of land or less may conduct such activity with a single approved plan encompassing all the lots or with separate approved ESC installation and maintenance agreements for each lot.
- B. ESC installation and maintenance agreement required. No person shall initiate any land disturbing activity for the purpose of new single-family residential development on an individual lot to a maximum of one acre, without having an ESC installation and maintenance agreement approved by the erosion control specialist.
- C. Protection of property. Persons conducting land disturbing activity shall take all reasonable measures to protect all public and private property from damage caused by such activity.
- D. Basic control objectives. A plan may be disapproved if the plan fails to address the following control objectives:
 - 1. Identify critical areas. On-site areas which are subject to severe erosion, and off-site areas which are especially vulnerable to damage from erosion or

sedimentation, are to be identified and receive special attention.

2. Limit time of exposure. All land disturbing activity is to be planned and conducted to limit exposure to the shortest feasible time.
3. Limit exposed areas. All land disturbing activity is to be planned and conducted to minimize the size of the area to be exposed at any one time.
4. Control surface water. Surface water runoff originating upgrate of exposed areas should be controlled to reduce erosion and sediment loss during the period of exposure.
5. Control sedimentation. All land disturbing activity is to be planned and conducted so as to prevent off-site sedimentation damage.
6. Manage stormwater runoff. When the increase in the velocity of stormwater runoff resulting from a land disturbing activity is sufficient to cause accelerated erosion of the receiving watercourse, plans are to include measures to control the velocity to the point of discharge so as to minimize accelerated erosion of the site and increased sedimentation of the stream.

Section 9.2.6 *Mandatory Standards for Land Disturbing Activities*

No land disturbing activity subject to the control of this section shall be undertaken except in accordance with the following mandatory standards:

A. *Standard Buffer.* No land-disturbing activity during periods of construction or improvement to land shall be permitted in proximity to a lake or natural watercourse unless a buffer zone is provided along the margin of the watercourse of sufficient width to confine visible siltation within the 25 percent of the buffer zone nearest the land-disturbing activity.

1. Projects On, Over or Under Water. This subdivision shall not apply to a land-disturbing activity in connection with the construction of facilities to be located on, over, or under a lake or natural watercourse.
2. Buffer Measurement. Unless otherwise provided, the width of a buffer zone is measured horizontally from the edge of the water to the nearest edge of the disturbed area, with the 25 percent of the strip nearer the land-disturbing activity containing natural or artificial means of confining visible siltation.

B. *Graded slopes and fills.* The angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures. In any event, slopes left exposed will, within 14 calendar days of completion of any phase of grading, be planted or otherwise be provided with ground cover, devices, or structures sufficient to restrain erosion.

- C. Ground cover.** Whenever more than 12,000 square feet of land is uncovered or new residential development on an individual lot is initiated, the person conducting the land disturbing activity shall install such sedimentation and erosion control devices and practices as are sufficient to retain the sediment generated by the land disturbing activity within the boundaries of the tract during construction upon and development of said tract, and shall plant or otherwise provide a permanent ground cover sufficient to restrain erosion after completion of construction or development. Provisions for a ground cover sufficient to restrain erosion must be accomplished within 15 working days or 60 calendar days, whichever is shorter, following completion of construction or development.
- D. Prior plan approval.** No person shall initiate any land disturbing activity on a tract if more than 12,000 square feet of land is to be uncovered, excluding single-family residential development unless 30 or more days prior to initiating the activity, a plan is filed with and approved by the erosion control specialist. The erosion control specialist shall forward to the state director of the division of water quality a copy of each plan for a land disturbing activity that involves the utilization of ditches for the purpose of dewatering or lowering the water table of the tract.
- E. Zoning permits.** Any person requesting a grading permit in association with a land disturbing activity on a tract which involves the uncovering of more than 12,000 square feet of land or new residential development on an individual lot shall be required to have an approved erosion and sedimentation control plan or ESC installation and maintenance agreement in accordance with this section.
- F. The Town shall forward to the Director of the Division of Water Resources (NCDEQ) a copy of each plan for a land disturbing activity that involves the utilization of ditches for the purpose of dewatering or lowering the water table of the tract.

Section 9.2.7 Design and Performance Standards

Erosion and sedimentation control measures, structures, and devices shall be so planned, designed, and constructed as to provide protection from the calculated maximum peak rate of stormwater runoff from the ten-year storm. Stormwater runoff rates shall be calculated using the procedures in the USDA, Natural Resources Conservation Service's National Engineering Field Manual for Conservation Practices, or other acceptable calculation procedures.

In High Quality Water (HQW) zones the following design standards shall apply:

- A. Limit on Uncovered Area.** Uncovered areas in HQW zones shall be limited at any time to a maximum total area of twenty acres within the boundaries of the tract. Only the portion of the land-disturbing activity within a HQW zone shall be governed by this section. Larger areas may be uncovered within the boundaries of the tract with written approval.

- B. Maximum Peak Rate of Runoff Protection.** Erosion and sedimentation control measures, structures, and devices within HQW zones shall be planned, designed and constructed to provide protection from the runoff of the twenty-five year storm which produces the maximum peak rate of runoff as calculated according to procedures in the United States Department of Agriculture Soil Conservation Service's "National Engineering Field Manual for Conservation Practices" or according to procedures adopted by any other agency of this state or the United States or any generally recognized organization or association.
- C. Settling Efficiency.** Sediment basins within HQW zones shall be designed and constructed such that the basin will have a settling efficiency of at least 70% for the 40 micron (0.04 millimeter) size soil particle transported into the basin by the runoff of that two year storm which produces the maximum peak rate of runoff as calculated according to procedures in the United States Department of Agriculture Soil Conservation Service's "National Engineering Field Manual for Conservation Practices" or according to procedures adopted by any other agency of this state or the United States or any generally recognized organization or association.
- D. Grade.** Newly constructed open channels in HQW zones shall be designed and constructed with side slopes no steeper than two horizontal to one vertical if a vegetative cover is used for stabilization unless soil conditions permit a steeper slope or where the slopes are stabilized by using mechanical devices, structural devices or other acceptable ditch liners. In any event, the angle for side slopes shall be sufficient to restrain accelerated erosion.
- E. Ground Cover.** Ground cover sufficient to restrain erosion must be provided for any portion of a land-disturbing activity in a HQW zone within 15 working days or 60 calendar days following completion of construction or development, whichever period is shorter.

Section 9.2.8 Stormwater Outlet Protection

- A. Persons shall conduct land disturbing activity so that the post-construction velocity of the ten-year storm runoff in the receiving watercourse to the discharge point does not exceed the greater of:
1. The velocity established in table 9.1; or
 2. The velocity of the ten-year storm runoff in the receiving watercourse prior to the land disturbing activity.
- B. If the conditions of subsection (a) of this section cannot be met, then the receiving watercourse to and including the discharge point shall be designed and constructed to withstand the expected velocity anywhere the velocity exceeds the "prior to land disturbing activity" velocity by ten percent.

- C. Acceptable management measures. Measures applied alone or in combination to satisfy the intent of this section are acceptable if there are no objectionable secondary consequences. The town recognizes that the management of stormwater runoff to minimize or control downstream channel and bank erosion is a developing technology. Innovative techniques and ideas will be considered and may be used when shown to have the potential to produce successful results. Some alternatives are to:
1. Avoid increases in surface runoff volume and velocity by including measures to promote infiltration to compensate for increased runoff from areas rendered impervious.
 2. Avoid increases in stormwater runoff discharge velocities by using vegetated or roughened swales and waterways in lieu of closed drains and high velocity paved sections.
 3. Provide energy dissipaters at outlets of storm drainage facilities to reduce flow velocities to the point of discharge. These may range from simple rip-rapped sections to complex structures.
 4. Protect watercourses subject to accelerated erosion by improving cross sections and/or providing erosion-resistant lining.
- C. Exceptions. This rule shall not apply where it can be demonstrated that stormwater discharge velocities will not create an erosion problem in the receiving watercourse.
- D. Maximum permissible velocity for stormwater discharges shall be regulated in accordance with Table 9.1.

Section 9.2.9 *Borrow and Waste Areas*

When the person conducting the land disturbing activity is also the person conducting the borrow or waste disposal activity, areas from which borrow is obtained and which are not regulated by the provisions of the Mining Act of 1971, and waste areas for surplus materials other than landfills regulated by the state department of environment and natural resources' division of solid waste management, shall be considered as part of the land disturbing activity where the borrow material is being used or from which the waste material originated. When the person conducting the land disturbing activity is not the person obtaining the borrow and/or disposing of the waste, these areas shall be considered a separate land disturbing activity.

Section 9.2.10 *Access and Haul Roads*

Temporary access and haul roads, other than public roads, constructed or used in connection with any land disturbing activity shall be considered a part of such activity.

Material	Feet/Second	Meters/Second
Fine sand (non colloidal)	2.5	0.8
Sandy loam (non colloidal)	2.5	0.8
Silt loam (non colloidal)	3.0	0.9
Ordinary firm loam	3.5	1.1
Fine gravel	5.0	1.5
Stiff clay (very colloidal)	5.0	1.5
Graded, loam to cobbles (non colloidal)	5.0	1.5
Graded, silt to cobbles (colloidal)	5.5	1.7
Alluvial silts (non colloidal)	3.5	1.1
Alluvial silts (colloidal)	5.0	1.5
Coarse gravel (non colloidal)	6.0	1.8
Cobbles and shingles	5.5	1.7
Shales and hard pans	6.0	1.8

Section 9.2.11 Operations in Lakes or Natural Watercourses

Land disturbing activity in connection with construction in, on, over, or under a lake or natural watercourse shall be planned and conducted in such a manner as to minimize the extent and duration of disturbance of the stream channel. The relocation of a lake, stream or other watercourse where relocation is an essential part of the proposed activity, shall be planned and executed so as to minimize changes in the lake, stream or other watercourse flow characteristics, except when justification acceptable to the town for significant alteration to flow characteristic is provided.

Section 9.2.12 Responsibility for Maintenance

During the development of a site, the person conducting the land disturbing activity shall install and maintain all temporary and permanent erosion and sedimentation control measures as required by the approved plan or any provision of this chapter or any order adopted pursuant to this chapter. After site development, the landowner or person in possession of the land shall install and/or maintain all necessary permanent erosion and sediment control measures, except those measures installed within a road or street right-of-way or easement accepted for maintenance by a governmental agency.

Section 9.2.13 Additional Measures

Whenever the erosion control specialist determines that significant sedimentation is occurring as a result of land disturbing activity, despite application and maintenance of protective practices, the person conducting the land disturbing activity will be required to and shall take additional protective action.

Section 9.2.14 Existing Uncovered Areas

- A. All uncovered areas which resulted from land disturbing activity which areas exceed one acre of land, that are subject to continued accelerated erosion and are causing off-site damage from sedimentation, shall be provided with a ground cover or other protective measures, structures, or devices sufficient to restrain accelerated erosion and control off-site sedimentation.
- B. The erosion control specialist will serve upon the landowner, or other person in possession or control of that land, a written notice of violation by registered or certified mail, return receipt requested, or other means reasonably calculated to give actual notice. The notice will set forth the measures needed to comply, and will state the time within which such measures must be completed. In determining the measures required and the time allowed for compliance, the erosion control specialist shall take into consideration the economic feasibility, technology, and quantity of work required, and shall set reasonable and attainable time limits of compliance.
- C. The erosion control specialist reserves the right to require preparation and approval of a plan in any instance where extensive control measures are required.

Section 9.2.15 Permits

- A. No person shall undertake any land disturbing activity subject to this chapter without having first obtained a plan certificate and letter of approval or ESC installation and maintenance agreement approval from the erosion control specialist, except that no plan certificate and letter of approval or ESC installation and maintenance agreement approval shall be required for any land disturbing activity:
 - 1. For the purpose of fighting fires;
 - 2. For the stock piling of raw or processed sand, stone, or gravel in material processing plants and storage yards, provided that sediment control measures have been utilized to protect against off-site damage; or
 - 3. That does not disturb more than 12,000 square feet in surface area. In determining the area, lands under one or diverse ownership being developed as a unit will be aggregated.
- B. Although a plan certificate and letter of approval is not required for land disturbing

activity comprising less than 12,000 square feet of land or less than one acre for residential projects, such activity shall be subject to all other requirements of this chapter and any other applicable standards or ordinances adopted by the town.

- C. Submittals for erosion and sediment control plan approval and erosion control inspections shall be subject to any and all relevant fees as adopted by the Board of Commissioners and prescribed in this Code. Fees shall accompany plan submittals, otherwise the submittal shall be determined incomplete and shall be returned to the applicant.

Section 9.2.16 Erosion and Sedimentation Control Plans

- A. Persons conducting land disturbing activity shall be responsible for preparing a plan for all land disturbing activities subject to this chapter whenever the proposed activity is to be undertaken on a tract disturbing more than 12,000 square feet of land, excluding single-family residential development.
- B. Seven complete copies of the plan shall be filed with the control specialist in the office of the development services department at least 30 days prior to the commencement of the proposed activity. A fee, made payable to the town, shall be charged for each plan review. Such fee shall be in accordance with a fee schedule adopted by the Board of Commissioners. No plan shall be considered complete unless accompanied by such fee and a performance bond in the form of a certified check, cash or irrevocable letter of credit, in an amount deemed sufficient by the engineering department to cover all costs of protection or other improvements required to establish protective cover on the site in conformity with this chapter. The performance bond shall remain effective until work has been completed, inspected and approved by the development services department.
- C. The erosion control specialist shall transmit a copy of the complete plan to the county soil and water conservation district (SWCD) for their review. The SWCD shall be given up to 20 days to make a comment on the plan. Failure of the SWCD to submit its comments to the erosion control specialist within such time period shall not delay final action on the proposed plan by the erosion control specialist.
- D. The erosion control specialist shall render a decision on a plan within 30 days of submittal. The erosion control specialist shall condition approval of a draft plan upon the applicant's compliance with local, state and federal water quality laws, regulations, ordinances and rules. Such decision shall be approval, approval with modifications, approval with performance reservations, or disapproval. Failure to approve, approve with modifications or performance reservations, or disapprove a complete plan within 30 days of receipt shall be deemed approval.
- E. Any final decision made pertaining to the proposed plan shall be filed in the Development Services Department (or as otherwise designated by the town) and sent to the applicant by first class mail.

- F. Denial of a plan or a revised plan must specifically state in writing the reasons for disapproval. The erosion control specialist must approve, approve with modifications or performance reservations, or disapprove a revised plan within 15 days of receipt, or it is deemed to be approved.
- G. Plan approval shall expire three years following the date of approval, if no land disturbing activity has been undertaken, or if no land disturbing activity has occurred within three years. If, following commencement of a land disturbing activity pursuant to an approved plan, the erosion control specialist determines that the plan is inadequate to meet the requirements of this chapter, the erosion control specialist may require any revision of the plan that is necessary to comply with this chapter.
- H. Persons conducting land disturbing activities which are addressed by this section shall have secured a plan certificate and letter of approval (in accordance with procedures described herein) before any land disturbing activities commence. A copy of the approved plan and the certificate of plan approval shall be maintained at the job site by the persons conducting the land disturbing activity. After approving the plan, if the erosion control specialist, either upon review of such plan or on inspection of the job site, determines that a significant risk of accelerated erosion or off-site sedimentation exists, the specialist may require that a revised plan be submitted. Pending the preparation and approval of the revised plan, work shall cease or shall continue under conditions outlined by the erosion control specialist.
- I. A plan may be disapproved unless accompanied by an authorized statement of financial responsibility and ownership. This statement shall be signed by the person financially responsible for the land disturbing activity or their attorney-in-fact. The statement shall include the mailing and street addresses of the principal place of business of the person financially responsible and of the owner of the land or their registered agents. If the person financially responsible is not a resident of the state, a state agent must be designated in the statement for the purpose of receiving notice of compliance or noncompliance with the plan, the Act, this chapter, or rules or orders adopted or issued pursuant to this chapter. If the applicant is not the owner of the land to be disturbed, the draft erosion and sedimentation control plan must include the owner's written consent for the applicant to submit a draft erosion and sedimentation control plan and to conduct the anticipated land disturbing activity.
- J. The person submitting a plan to the erosion control specialist is, prior to submission of the plan, solely and exclusively responsible for determining whether the proposed land disturbing activities require any form of state or federal environmental certification or documentation. Any plan submitted for a land disturbing activity for which an environmental document is required by the North Carolina Environmental Policy Act (G.S. 113A-1 et seq.) shall be deemed incomplete until a complete environmental document is available for town review. The erosion control specialist, upon discovery that an environmental certification or documentation is required but was not obtained, shall promptly notify the person submitting the plan that the 30-day time limit for review of the plan pursuant to subsection (d) of this section shall not

begin until a complete environmental document or certificate is available for review by the erosion control specialist. However, no term or condition in this chapter shall be interpreted to place the burden for determining the necessity for an environmental certificate or documentation upon the erosion control specialist, and the person submitting the plan, as well as any other persons specified by law, rule or regulation, shall remain solely and exclusively responsible for such determination.

- K. The plan required by this section shall contain architectural and engineering drawings, maps, assumptions, calculations, and narrative statements as needed to adequately describe the proposed development of the tract and the measures planned to comply with the requirements of this chapter. All erosion and sediment control measures and devices must be drawn to scale and contour when deemed applicable by the erosion control specialist. Plan content may vary to meet the needs of specific site requirements. Detailed guidelines for plan preparation shall be found in the Town of Waxhaw Engineering, Standards and Procedures Manual. The erosion control specialist shall automatically disapprove a plan if it is determined that implementation of the plan would result in a violation of rules adopted by the environmental management commission to protect riparian buffers along surface waters.
- L. A plan may be disapproved upon a finding that an applicant, or a parent, subsidiary, or other affiliate of the applicant:
1. Is conducting or has conducted land disturbing activity without an approved plan, or has received notice of violation of a plan previously approved by the North Carolina Sedimentation Control Commission (NCSCC)(or the town pursuant to the Act and has not complied with the notice within the time specified in the notice;
 2. Has failed to pay a civil penalty assessed pursuant to the Act or a local ordinance adopted pursuant to the Act by the time the payment is due;
 3. Has been convicted of a misdemeanor pursuant to G.S. 113A-64(b) or any criminal provision of a local ordinance adopted pursuant to the Act; or
 4. Has failed to substantially comply with applicable local, state or federal laws, regulations, rules or ordinances adopted pursuant to the Act. For purposes of this subsection (L), an applicant's record may be considered for only two years prior to the application date.
- M. Applications for amendment of a plan in written and/or graphic form may be made at any time under the same format as the original application. Until such time as said amendment is approved by the erosion control specialist, land disturbing activity shall not proceed except in accordance with the plan as originally approved.
- N. Any person engaged in land disturbing activity who fails to file a plan in accordance with this chapter, or who conducts a land disturbing activity except in accordance with provisions of an approved plan shall be deemed in violation of this chapter.

Section 9.2.17 Transfer of Plans

- A. The town may transfer a plan if all of the following conditions are met:
1. The successor-owner of the property submits to the local government a written request for the transfer of the plan and an authorized statement of financial responsibility and ownership.
 2. The local government finds all of the following:
 - a. The plan holder is one of the following:
 - i. A natural person who is deceased.
 - ii. A partnership, limited liability corporation, corporation, or any other business association that has been dissolved.
 - iii. A person who has been lawfully and finally divested of title to the property on which the permitted activity is occurring or will occur.
 - iv. A person who has sold the property on which the permitted activity is occurring or will occur.
 - b. The successor-owner holds title to the property on which the permitted activity is occurring or will occur.
 - c. The successor-owner is the sole claimant of the right to engage in the permitted activity.
 - d. There will be no substantial change in the permitted activity.
- B. The plan holder shall comply with all terms and conditions of the plan until such time as the plan is transferred.
- C. The successor-owner shall comply with all terms and conditions of the plan once the plan has been transferred.
- D. Notwithstanding changes to law made after the original issuance of the plan, the local government may not impose new or different terms and conditions in the plan without the prior express consent of the successor-owner. Nothing in this subsection shall prevent the local government from requiring a revised plan.
- E. Denials of transfer requests may be appealed pursuant to Section 9.2.22.

Section 9.2.18 Inspections and Investigations

- A. The erosion control specialist will periodically inspect land disturbing activities to ensure compliance, this chapter, or rules or orders adopted or issued pursuant to this chapter, and to determine whether the measures required in the plan are effective in controlling erosion and sediment resulting from land disturbing activity. Notice of the right to inspect shall be included in the certificate of approval of each plan. The landowner, the financially responsible party, or the landowner's or the financially responsible party's agent shall perform an inspection of the area covered by the plan after each phase of the plan has been completed and after establishment of temporary ground cover. The person who performs the inspection shall maintain and make available a record of the deviation from the approved erosion control plan, identify any measures that may be required to correct the deviation, and document the completion of those measures. The record shall be maintained until permanent ground cover has been established as required by the approved erosion and sedimentation control plan.
- B. No person shall willfully resist, delay, or obstruct the erosion control specialist, while inspecting or attempting to inspect a land disturbing activity under this section.
- C. If it is determined that a person engaged in the land disturbing activity has failed to comply with this article, or rules, or orders adopted or issued pursuant to this article, or has failed to comply with an approved plan, a notice of violation shall be served upon that person. The notice shall be served by registered or certified mail or by any means authorized under G.S. 1A-1, Rule 4. The notice of violation shall specify a date by which, or a cure period within which, the person must comply with this article, and inform the person of the actions that need to be taken to comply with this article. The notice shall set forth the measures necessary to achieve compliance with the plan, specify a reasonable time period within which such measures shall be completed, and warn that failure to correct the violation within the time period stated is subject to a civil penalty and other enforcement actions. However, no time period for compliance need be given for failure to submit a plan for approval, for obstructing, hampering or interfering with an authorized representative while in the process of carrying out his official duties, or for the penalty that may be assessed pursuant to this article for the day the violation is assessed by the erosion control specialist. Any person who fails to comply within the time specified in the notice is subject to additional civil and criminal penalties for a continuing violation as provided in this article. If the person engaged in the land disturbing activity has not received a previous notice of violation under this section, the erosion control specialist shall deliver the notice of violation in person and shall offer assistance in developing corrective measures. Assistance may be provided by referral to a technical assistance program in the department, referral to a cooperative extension program, or by the provision of written materials such as department guidance documents. If the erosion control specialist is unable to deliver the notice of violation in person within 15 days following discovery of the violation, the notice of violation may be served in the manner prescribed for service of process by G.S. 1A-1, Rule 4, and shall include information on how to obtain assistance in

developing corrective measures.

- D. The erosion control specialist shall have the power to conduct such investigation as may be reasonably deemed necessary to carry out duties as prescribed in this article, and for this purpose to enter at reasonable times upon any property, public or private, for the purpose of investigating and inspecting the sites of any land disturbing activity. No person shall refuse entry or access to the erosion control specialist who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such representative while in the process of carrying out their official duties as provided in this article.
- E. The erosion control specialist shall also have the power to require written statements, or the filing of reports under oath, with respect to pertinent questions relating to land disturbing activity.
- F. On any tract on which five or more acres are disturbed, the person conducting land disturbing activity will be responsible for self-inspection of erosion and sedimentation control facilities at least once every seven days or within 24 hours of a storm event of greater than one-half inch of rain per 24-hour period.

Section 9.2.19 Penalties; Stop Work Orders

- A. *Civil penalties.* Any person who violates any of the provisions of the applicable state, federal or local laws, rules, regulations or ordinances, including this article, or rules or orders adopted or issued pursuant to applicable state, federal or local laws, rules, regulations or ordinances, including this article, or who initiates or continues a land disturbing activity for which an erosion and sedimentation control plan is required except in accordance with the terms, conditions, and provisions of an approved plan, is subject to a civil penalty. The maximum civil penalty for a violation is \$5,000.00. A civil penalty may be assessed from the date of the violation. Each day of a continuing violation shall constitute a separate violation. When the person has not been assessed any civil penalty under this subsection for any previous violation and that person abated continuing environmental damage resulting from the violation within 180 days from the date of the notice of violation, the maximum cumulative total civil penalty assessed under this subsection for all violations associated with the land disturbing activity for which the erosion and sedimentation control plan is required is \$25,000.00.

Civil Penalty Assessment Factors. The governing body of the Town shall determine the amount of the civil penalty based upon the following factors:

1. the degree and extent of harm caused by the violation,
2. the cost of rectifying the damage,
3. the amount of money the violator saved by noncompliance,

4. whether the violation was committed willfully, and

5. prior record of the violator in complying or failing to comply with this ordinance. The erosion control specialist shall determine the amount of the civil penalty and shall notify the person who is assessed the civil penalty of the amount of the penalty, the reason for assessing the penalty, the option available to that person to request a remission of the civil penalty under G.S. 113A-64.2, the date of the deadline for that person to make the remission request regarding this particular penalty, and, when that person has not been assessed any civil penalty under this section for any previous violation, the date of the deadline for that person to abate continuing environmental damage resulting from the violation in order to be subject to the maximum cumulative total civil penalty. The notice of assessment shall be served by any means authorized under G.S. 1A-1, Rule 4, and shall direct the violator to either pay the assessment or contest the assessment within 30 days or file a request with the Sedimentation Control Commission for remission of the assessment within 60 days of receipt of the notice. A remission request must be accompanied by a waiver of the right to a contested case hearing pursuant to Chapter 150B of the North Carolina General Statutes and a stipulation of the facts on which the assessment was based.

Final Decision. The final decision on contested assessments shall be made by the governing body of the Town in accordance with the local ordinances or regulations adopted to establish and enforce the erosion and sedimentation control program.

Appeal of Final Decision. Appeal from the final decision of the Board of Commissioners shall be to the appropriate North Carolina Court. Such appeals must be made within 30 days of the final decision of the Commissioners.

Collection. If payment is not received within 60 days after it is due, the Town may institute a civil action to recover the amount of the assessment. The civil action may be brought in the Superior Court with jurisdiction in Waxhaw. Such civil actions must be filed within three years of the date the assessment was due. An assessment that is not contested is due when the violator is served with a notice of assessment. An assessment that is contested is due at the conclusion of the administrative and judicial review of the assessment.

Credit of Civil Penalties. The clear proceeds of civil penalties collected by the Town under this subsection shall be remitted to the Civil Penalty and Forfeiture Fund in accordance with G.S. 115C-457.2. Penalties collected by the Town may be diminished only by the actual costs of collection.

B. Criminal penalties. Any person who knowingly or willfully violates any provision of this chapter, or who knowingly or willfully initiates or continues a land disturbing activity for which a plan is required, except in accordance with the terms, conditions, and provisions of an approved plan, shall be guilty of a Class 2 misdemeanor which may include a fine not to exceed \$5,000.00.

C. Stop work orders.

1. The erosion control specialist may issue a stop work order if he finds that a land disturbing activity is being conducted in violation of this section or of any rule adopted or order issued pursuant to this section, that the violation is knowing and willful, and that either:
 - a. Off-site sedimentation has eliminated or severely degraded a use in a lake or natural watercourse or that such degradation is imminent.
 - b. The land disturbing activity is being conducted without an approved plan.
2. Off-site sedimentation has caused severe damage to adjacent land or that such damage is imminent.
3. The stop work order shall be in writing and shall state what work is to be stopped and what measures are required to abate the violation. The order shall include a statement of the findings made by the town pursuant to subsection (a) of this section, and shall list the conditions under which work that has been stopped by the order may be resumed. The delivery of equipment and materials which does not contribute to the violation may continue while the stop work order is in effect. A copy of this section shall be attached to the order.
4. The stop work order shall be served by the county sheriff or by some other person duly authorized by law to serve process as provided by G.S. 1A-1, Rule 4, and shall be served on the person at the site of the land disturbing activity who is in operational control of the land disturbing activity. The sheriff or other person duly authorized by law to serve process shall post a copy of the stop work order in a conspicuous place at the site of the land disturbing activity. The town shall also deliver a copy of the stop work order to any person that the town has reason to believe may be responsible for the violation.
5. The directives of a stop work order become effective upon service of the order. Thereafter, any person notified of the stop work order who violates any of the directives set out in the order may be assessed a civil penalty. A stop work order issued pursuant to this section may be issued for a period not to exceed five days.
6. The erosion control specialist shall designate an employee (which may be the erosion control specialist) to monitor compliance with the stop work order. The name of the employee so designated shall be included in the stop work order. The employee so designated, or the erosion control specialist, shall rescind the stop work order if all the violations for which the stop work order are issued are

corrected, no other violations have occurred, and all measures necessary to abate the violations have been taken. The erosion control specialist shall rescind a stop work order that is issued in error.

7. The issuance of a stop work order shall be a final agency decision subject to judicial review in the same manner as an order in a contested case pursuant to G.S. ch. 150B, art. 4. The petition for judicial review shall be filed in the superior court of the county in which the land disturbing activity is being conducted.
8. As used in this section, days are computed as provided in G.S. 1A-1, Rule 6.
9. The attorney for the town shall file a cause of action to abate the violations which resulted in the issuance of a stop work order within two business days of the service of the stop work order. The cause of action shall include a motion for an ex parte temporary restraining order to abate the violation and to effect necessary remedial measures. The resident superior court judge, or any judge assigned to hear the motion for the temporary restraining order, shall hear and determine the motion within two days of the filing of the complaint. The clerk of superior court shall accept complaints filed pursuant to this section without the payment of filing fees. Filing fees shall be paid to the clerk of superior court within 30 days of the filing of the complaint.

Section 9.2.20 Injunctive Relief

- A. Whenever the Erosion Control Specialist has reasonable cause to believe that any person is violating or threatening to violate this article or any term, condition, or provision of an approved plan, he may, either before or after the institution of any other action or proceeding authorized by this article, institute a civil action for injunctive relief to restrain the violation or threatened violation. The action shall be brought in the superior court in the county.
- B. Upon determination by a court that an alleged violation is occurring or is threatened, the court shall enter any order of judgment that is necessary to abate the violation, to ensure that restoration is performed, or to prevent the threatened violation. The institution of an action for injunctive relief under this section shall not relieve any party to the proceedings from any civil or criminal penalty prescribed for violations of this article.

Section 9.2.21 Restoration of Areas Affected by Failure to Comply

The Erosion Control Specialist may require a person who engaged in a land disturbing activity and failed to retain sediment generated by the activity to restore the waters and land affected by the failure so as to minimize the detrimental effects of the resulting pollution by sedimentation. This authority is in addition to any other civil or criminal penalty or injunctive relief authorized under this article.

Section 9.2.22 Appeals

Procedures which constitute the appeals process are related to the following actions:

A. *Plan approval with modifications or plan disapproval.* The appeal of an approval, approval with modifications or disapproval of a plan made by the erosion control specialist with regard to this article shall be governed by the following provisions:

1. The order of approval, disapproval, or modification of any proposed plan made by the Erosion Control Specialist shall entitle the person challenging such decision to a public hearing before the board of adjustment if such person submits written demand for a hearing and completes the necessary forms and pays the required appeals fee within 15 days following the date the decision was filed in the development services department office or mailed to the applicant, whichever date is later. Such written request and completed forms shall be submitted to the clerk of the board of adjustment or his designee. Forms shall be available at the town hall, or as directed by the erosion control specialist. A fee for such public hearing shall be in accordance with a fee schedule adopted by the Board of Commissioners. No request shall be considered complete unless accompanied by such fee.
2. Notice of the Board of Adjustment public hearing shall be sent by first class mail to the applicant at least ten days prior to the public hearing and to any person who has submitted written request to receive such notice at least ten days prior to the date of the public hearing. The hearing shall be held no later than 30 days after the date of receipt of said written request.
3. A hearing shall be conducted by the Board of Adjustment. A concurring vote per the board of adjustment's officially adopted bylaws will be necessary to reverse any order, requirement, decision, or determination of any official charged with the enforcement of this article, or to decide in favor of an appellant any matter upon which is required to pass or to grant variance from the provisions of this article. The town shall keep minutes of the proceedings, showing the votes of each member upon each question and the attendance of each member at such hearings. The final disposition of the town shall be based on findings of fact.
4. A party dissatisfied with the decision of the Board of Adjustment following the public hearing shall appeal such decision as provided by G.S. 113A-61(c).

B. *Plan disapproval due to prior violation, unpaid penalties, or noncompliance.* In the event that a plan is disapproved, the town control specialist shall notify the director of the division of land resources of such disapproval, along with the reasons therefor,

within ten days after the date of the decision. The erosion control specialist shall advise the applicant and the director of the division of land resources in writing as to the specific reasons that the plan was disapproved. The applicant may appeal the erosion control specialist's disapproval of the plan directly to the NCSCC.

- C. *Issuance of notice of violation*, penalties, or order of restoration. The appeal of issuance of notice of violation, assessment of civil penalty, or order of restoration made by the town with regard to this article shall be governed by the following provisions: The issuance of a notice of violation, assessment of a civil penalty, or an order of restoration by the erosion control specialist shall entitle the person alleged to be in violation of this article (petitioner) to appeal within 30 days by filing a petition for a contested case with the state office of administrative hearings.

Section 9.3 Flood Damage Prevention

Section 9.3.1 Statutory Authorization, Findings of Fact, Purposes and Objectives

Statutory Authorization. The Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143; Parts 3, 5, and 8 of Article 19 of Chapter 160A; and Article 8 of Chapter 160A of the North Carolina General Statutes, delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare.

Therefore, the Board of Commissioners for the Town of Waxhaw, North Carolina, does ordain as follows:

A. Findings of Fact.

1. The flood prone areas within the jurisdiction of Waxhaw, North Carolina are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
2. 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.

B. Statement of Purpose.

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

1. Restrict or prohibit uses that are dangerous to health, safety, and property due to water or erosion hazards or that result in damaging increases in erosion, flood heights or velocities;

2. Require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
4. Control filling, grading, dredging, and all other development that may increase erosion or flood damage; and
5. Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands.

C. Objectives.

The objectives of this ordinance are to:

1. Protect human life, safety, and health;
2. Minimize expenditure of public money for costly flood control projects;
3. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. Minimize prolonged business losses and interruptions;
5. 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;
6. Minimize damage to private and public property due to flooding;
7. Make flood insurance available to the community through the National Flood Insurance Program;
8. Maintain the natural and beneficial functions of floodplains;
9. Help maintain a stable tax base by providing for the sound use and development of flood prone areas; and
10. Ensure that potential buyers are aware that property is in a Special Flood Hazard Area.

Section 9.3.2 *General Provisions*

A. Lands to Which This Ordinance Applies.

This ordinance shall apply to all Special Flood Hazard Areas within the jurisdiction of the Town of Waxhaw. Basis for Establishing the Special Flood Hazard Areas.

- B. The Special Flood Hazard Areas are those identified under the Cooperating Technical State agreement between the State of North Carolina and FEMA in its Flood Insurance Study (FIS) dated October 16, 2008 for Union County and associated DFIRM panels, including any digital data developed as part of the Flood Insurance Study, which are adopted by reference and declared a part of this ordinance. Future revisions to the FIS and DFIRM panels that do not change flood hazard data within the jurisdictional authority of The Town of Waxhaw are also adopted by reference and declared a part of this chapter Subsequent Letter of Map Revisions (LOMRs) and Physical Map Revisions (PMRs) shall be adopted within three months.
- C. Establishment of Floodplain Development Permit. A Floodplain Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities within Special Flood Hazard Areas.
- D. Compliance. No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this ordinance and other applicable regulations.
- E. Abrogation and Greater Restrictions. This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- F. Interpretation. In the interpretation and application of this ordinance, all provisions shall be:
1. Considered as minimum requirements;
 2. Liberally construed in favor of the Town of Waxhaw; and
 3. Deemed neither to limit nor repeal any other powers granted under state law.
- G. Warning and Disclaimer of Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Special Flood Hazard Areas or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of the Town of Waxhaw or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.
- H. Penalties for Violation. Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall be enforced in accordance with chapter 3 of this code, as amended.

Section 9.3.3 Administration

A. Designation of Floodplain Administrator.

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

B. Floodplain Development Application, Permit and Certification Requirements.

1. Application Requirements. Application for a Floodplain Development Permit shall be made to the Floodplain Administrator prior to any development activities located within Special Flood Hazard Areas. The following items shall be presented to the Floodplain Administrator to apply for a floodplain development permit:

- a. A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:
 - i. The nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
 - ii. The boundary of the Special Flood Hazard Area as delineated on the FIRM or other flood map or a statement that the entire lot is within the Special Flood Hazard Area;
 - iii. Flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map;
 - iv. The boundary of the floodway(s) or non-encroachment area(s) (NEAs);
 - v. The Base Flood Elevation (BFE);
 - vi. The old and new location of any watercourse that will be altered or relocated as a result of proposed development; and
 - vii. The certification of the plot plan by a registered land surveyor or professional engineer.
- b. Proposed elevation, and method thereof, of all development within a Special Flood Hazard Area including but not limited to:
 - i. Elevation in relation to mean sea level NAVD 1988 of the proposed reference level (including basement) of all structures;

- ii. Elevation in relation to mean sea level NAVD 1988 to which any non-residential structure in Zone AE, A or AO will be floodproofed; and
- iii. Elevation in relation to mean sea level NAVD 1988 to which any proposed utility systems will be elevated or floodproofed.
- c. If floodproofing, a floodproofing Certificate (FEMA Form 81-65) with supporting data, an operational plan, and an inspection and maintenance plan that include, but are not limited to, installation, exercise, and maintenance of floodproofing measures.
- d. A Foundation Plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:
 - i. The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls); and
 - ii. Openings to facilitate automatic equalization of hydrostatic flood forces on walls when solid foundation perimeter walls are used in Zones A, AO, AE, and A1-30.
- e. Usage details of any enclosed areas below the lowest floor.
- f. Plans and details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage.
- g. Certification that all other Local, State and Federal permits required prior to floodplain development permit issuance have been received.
- h. Documentation for placement of Recreational Vehicles or Temporary Structures, when applicable, to ensure that the provisions of this code are met.
- i. A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.

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

- a. A complete description of all the development to be permitted under the floodplain development permit (e.g. house, garage, pool, septic, bulkhead,

- cabana, pier, bridge, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials, etc.).
- b. The Special Flood Hazard Area determination for the proposed development.
 - c. The Regulatory Flood Protection Elevation required for the reference level and all attendant utilities.
 - d. The Regulatory Flood Protection Elevation required for the protection of all public utilities.
 - e. All certification submittal requirements with timelines.
 - f. A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse, as applicable.
 - g. The flood openings requirements, if in Zone A, AO, AE or A1-30, A99.
 - h. Limitations on use of enclosed areas below the lowest floor (if applicable), i.e., parking, building access and limited storage only.
 - i. A statement, that all materials below BFE/RFPE must be flood resistant materials.

3. Certification Requirements.

- a. Elevation Certificates
 - i. An Elevation Certificate (FEMA Form 81-31) (FEMA Form 086-0-33) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the elevation of the reference level, in relation to mean sea level NAVD 1988. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.
 - ii. An Elevation Certificate (FEMA Form 81-31) (FEMA Form 086-0-33) is required after the reference level is established. Within seven calendar days of establishment of the reference level elevation, it shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the elevation of the reference level, in relation to mean sea level NAVD 1988. Any work done within the seven day calendar period and prior to submission of the certification shall be at the permit holder's risk. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being permitted to proceed.

Failure to submit the certification or failure to make required corrections shall be cause to issue a stop-work order for the project.

- iii. A final as-built Finished Construction Elevation Certificate (FEMA Form 81-31) (FEMA Form 086-0-33) is required after construction is completed and prior to Certificate of Occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy. The Finished Construction Elevation Certificate certifier shall provide at least two photographs showing the front and rear of the building taken within 90 days from the date of certification. The photographs must be taken with views confirming the building description and diagram number provided in Section A. To the extent possible, these photographs should show the entire building including foundation. If the building has split-level or multi-level areas, provide at least two additional photographs showing side views of the building. In addition, when applicable, provide a photograph of the foundation showing a representative example of the flood openings or vents. All photographs must be in color and measure at least 3" × 3". Digital photographs are acceptable.

b. Floodproofing Certificate

- i. If non-residential floodproofing is used to meet the Regulatory Flood Protection Elevation requirements, a Floodproofing Certificate (FEMA Form 81-65) (FEMA Form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to mean sea level NAVD 1988. Floodproofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a Certificate of Occupancy.

- ii. A final Finished Construction Floodproofing Certificate (FEMA Form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the issuance of a Certificate of Occupancy. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to NAVD 1988. Floodproofing certificate shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to Certificate of Occupancy. Failure to submit the certification or failure to make required corrections shall be cause to deny a Floodplain Development Permit. Failure to construct in accordance with the certified design shall be cause to deny a Certificate of Occupancy.

If a manufactured home is placed within Zone A, AO, AE, or A1-30 and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required.

- c. If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.
- d. The following structures, if located within Zone A, AO, AE, or A1-30, are exempt from the elevation/floodproofing certification requirements specified in items (a) and (b) of this subsection:
 - i. Recreational Vehicles
 - ii. Temporary Structures
 - iii. Accessory Structures

4. Determinations for existing buildings and structures.

For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the Building Official, shall:

- a. Estimate the market value, or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work; in the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made;
- b. Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure;
- c. Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; and
- d. Notify the applicant if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood resistant construction requirements of the NC Building Code and this ordinance is required.

C. Duties and Responsibilities of the Floodplain Administrator.

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

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

8. Obtain actual elevation (in relation to mean sea level) of all public utilities.
9. When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect.
10. Where interpretation is needed as to the exact location of boundaries of the Special Flood Hazard Areas, floodways, or non-encroachment areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
11. When Base Flood Elevation data have not been provided to obtain, review, and reasonably utilize any BFE data, along with floodway data or non-encroachment area data available from a Federal, State, or other source, in order to administer the provisions of this ordinance.
12. When Base Flood Elevation data are provided but no floodway or non-encroachment area data have been provided to obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a Federal, State, or other source in order to administer the provisions of this ordinance.
13. When the lowest floor and the lowest adjacent grade of a structure or the lowest ground elevation of a parcel in a Special Flood Hazard Area are above the Base Flood Elevation, advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the LOMA issued by FEMA in the floodplain development permit file.
14. Permanently maintain all records that pertain to the administration of this ordinance and make these records available for public inspection, recognizing that such information may be subject to the Privacy Act of 1974, as amended.
15. Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the Floodplain Administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the Floodplain Administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.
16. Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the Floodplain Administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing or in charge

of the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor.

17. Revoke floodplain development permits as required. The Floodplain Administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, and specifications; for refusal or failure to comply with the requirements of State or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable State or local law may also be revoked.
18. Make periodic inspections throughout the Special Flood Hazard Areas within the jurisdiction of the community. The Floodplain Administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.
19. Follow through with corrective procedures.
20. Review, provide input, and make recommendations for variance requests.
21. Maintain a current map repository to include, but not limited to, historical and effective FIS Report, historical and effective FIRM and other official flood maps and studies adopted in accordance with the provisions of this ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
22. Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-Fs) and Letters of Map Revision (LOMRs).

D. Corrective Procedures.

1. Violations to be Corrected: When the Floodplain Administrator finds violations of applicable State and local laws; it shall be his or her duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law cited in such notification.
2. Actions in Event of Failure to Take Corrective Action: If the owner of a building or property shall fail to take prompt corrective action, the Floodplain Administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:
 - a. That the building or property is in violation of the floodplain management regulations;

- b. That a hearing will be held before the Floodplain Administrator at a designated place and time, not later than ten 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. That following the hearing, the Floodplain Administrator may issue an order to alter, vacate, or demolish the building; or to remove fill as applicable.
 3. Order to Take Corrective Action: If, upon a hearing held pursuant to the notice prescribed above, the Floodplain Administrator shall find that the building or development is in violation of the Flood Damage Prevention Ordinance, he or she shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than 60 calendar days, nor more than 120 calendar days. Where the Floodplain Administrator finds that there is imminent danger to life or other property, he or she may order that corrective action be taken in such lesser period as may be feasible.
 - a. Appeal: Any owner who has received an order to take corrective action may appeal the order to the Board of Adjustment. In the absence of an appeal, the order of the Floodplain Administrator shall be final.
 - b. Failure to Comply with Order: If the owner of a building or property fails to comply with an order to take corrective action for which no appeal has been made or fails to comply with an order of the Board of Adjustment following an appeal, the owner shall be subject to the penalties set forth in chapter 3-or-the owner shall be guilty of a Class 1 misdemeanor pursuant to NC G.S. § 143-215.58 and shall be punished at the discretion of the court.

E. Variance Procedures.

1. The Board of Adjustment as established by the Town of Waxhaw shall hear and decide requests for variances from the requirements of this code.
2. Any person aggrieved by the decision of the board may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.
3. Variances may be issued for:
 - a. The repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and that the variance is the minimum necessary to preserve the historic character and design of the structure;
 - b. Functionally dependent facilities are protected by methods that minimize flood damages during the base flood and create no additional threats to public

safety; or

- c. Any other type of development provided it meets the requirements of this Section
4. In passing upon variances, the Board of Adjustment shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this code, and:
 - a. The danger that materials may be swept onto other lands to the injury of others;
 - b. The danger to life and property due to flooding or erosion damage;
 - c. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - d. The importance of the services provided by the proposed facility to the community;
 - e. The necessity to the facility of a waterfront location as a functionally dependent facility, where applicable;
 - f. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
 - g. The compatibility of the proposed use with existing and anticipated development;
 - h. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 - i. The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - j. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
 - k. 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.
 5. A written report addressing each of the above factors shall be submitted with the application for a variance.
 6. Upon consideration of the factors listed above and the purposes of this ordinance, the Board of Adjustment may attach such conditions to the granting of variances

as it deems necessary.

7. Any applicant to whom a variance is granted shall be given written notice specifying the difference between the Base Flood Elevation (BFE) and the elevation to which the structure is to be built and that such construction below the BFE increases risks to life and property, and that the issuance of a variance to construct a structure below the BFE will result in increased premium rates for flood insurance up to \$25 per \$100 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.
8. The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the State of North Carolina upon request.
9. Conditions for Variances:
 - a. Variances shall not be issued when the variance will make the structure in violation of other Federal, State, or local laws, regulations, or ordinances.
 - b. Variances shall not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
 - c. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - d. Variances are subject to the requirements in chapter 3 in addition to the following:
 - i. A showing of good and sufficient cause;
 - ii. A determination that failure to grant the variance would result in exceptional hardship; and
 - iii. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
10. A variance may be issued for solid waste disposal facilities or sites, hazardous waste management facilities, salvage yards, and chemical storage facilities that are located in Special Flood Hazard Areas provided that all of the following conditions are met.
 - a. The use serves a critical need in the community.

- b. No feasible location exists for the use outside the Special Flood Hazard Area.
- c. The reference level of any structure is elevated or floodproofed to at least the Regulatory Flood Protection Elevation.
- d. The use complies with all other applicable Federal, State and local laws.
- e. The Town of Waxhaw has notified the Secretary of the North Carolina Department of Public Safety of its intention to grant a variance at least 30 calendar days prior to granting the variance.

Section 9.3.4 PROVISIONS FOR FLOOD HAZARD REDUCTION

A. General Standards.

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

1. All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure.
2. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage in accordance with the FEMA Technical Bulletin 2, Flood Damage-Resistant Materials Requirements.
3. All new construction and substantial improvements shall be constructed by methods and practices that minimize flood damages.
4. Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding to the Regulatory Flood Protection Elevation. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, hot water heaters, and electric outlets/switches.
 - a. Replacements part of a substantial improvement, electrical, heating, ventilation, plumbing, air conditioning equipment, and other service equipment shall also meet the above provisions.
 - b. Replacements that are for maintenance and not part of a substantial improvement, may be installed at the original location provided the addition and/or improvements only comply with the standards for new construction consistent with the code and requirements for the original structure.
5. All new and replacement water supply systems shall be designed to minimize or

7. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
8. Any alteration, repair, reconstruction, or improvements to a structure, which is in compliance with the provisions of this ordinance, shall meet the requirements of “new construction” as contained in this ordinance.
9. Nothing in this ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the Regulatory Flood Protection Elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this ordinance.
10. New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted. A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a Special Flood Hazard Area only if the structure or tank is either elevated or floodproofed to at least the Regulatory Flood Protection Elevation.
11. All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
12. All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
13. All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
14. All subdivision proposals and other development proposals shall have received all necessary permits from those governmental agencies for which approval is required by Federal or State law.
15. When a structure is partially located in a Special Flood Hazard Area, the entire structure shall meet the requirements for new construction and substantial improvements.
16. When a structure is located in multiple flood hazard zones or in a flood hazard risk zone with multiple Base Flood Elevations (BFEs), the provisions for the more restrictive flood hazard risk zone and the highest BFE shall apply.

B. Specific Standards

In all Special Flood Hazard Areas where Base Flood Elevation (BFE) data have been provided, the following provisions are required:

1. Residential Construction. The freeboard shall be two feet. New construction and substantial improvement of any residential structure (including manufactured homes) shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation.
2. Non-Residential Construction. The freeboard shall be one foot. New construction and substantial improvement of any commercial, industrial, or other non-residential structure shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation. Structures located in A, AE, AO, and A1-30 Zones may be flood proofed to the Regulatory Flood Protection Elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the Regulatory Flood Protection Elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the floodproofing standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator, along with the operational plan and the inspection and maintenance plan.
3. Manufactured Homes.
 - a. New and replacement manufactured homes shall be elevated so that the reference level of the manufactured home is no lower than two feet above the Regulatory Flood Protection Elevation.
 - b. Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by certified engineered foundation system, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes adopted by the Commissioner of Insurance pursuant to NCGS 143-143.15. Additionally, when the elevation would be met by an elevation of the chassis 36 inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above 36 inches in height, an engineering certification is required.
 - c. An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood prone areas. This plan shall be filed with and approved by the Floodplain Administrator and the local Emergency Management Coordinator.

4. Elevated Buildings. Fully enclosed area, of new construction and substantially improved structures, which is below the lowest floor:
- a. Shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;
 - b. Shall not be temperature-controlled or conditioned;
 - c. Shall be constructed entirely of flood resistant materials at least to the Regulatory Flood Protection Elevation; and
 - d. Shall include, in Zones A, AO, AE, and A1-30, flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet or exceed the following minimum design criteria:
 - i. A minimum of two flood openings on different sides of each enclosed area subject to flooding;
 - ii. The total net area of all flood openings must be at least one square inch for each square foot of enclosed area subject to flooding;
 - iii. If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
 - iv. The bottom of all required flood openings shall be no higher than one foot above the adjacent grade;
 - v. Flood openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and
 - vi. Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings as outlined above.

5. Additions/Improvements.

- a. Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
 - i. Not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages and must not be any more non-conforming than the existing structure.
 - ii. A substantial improvement, with modifications, rehabilitations, improvements to the existing structure or the common wall is structurally modified more than installing a doorway, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
- b. Additions to pre-FIRM or post-FIRM structures that are a substantial improvement with no modifications/rehabilitations/improvements to the existing structure other than a standard door in the common wall, shall require only the addition to comply with the standards for new construction
- c. Additions or improvements to post-FIRM structures when the addition or improvements, in combination with any interior modifications to the existing structure, are:
 - i. Not a substantial improvement, the addition or improvements only must comply with the standards for new construction.
 - ii. A substantial improvement, the existing structure, and the addition or improvements must comply with the standards for new construction.
- d. Any combination of repair, reconstruction, rehabilitation, addition or improvement of a building or structure taking place during a one year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started must comply with the standards for new construction. For each building or structure, the one year period begins on the date of the first improvement or repair of that building or structure after the effective date of this ordinance. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The requirement does not, however, include either:

- i. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assume safe living conditions.
 - ii. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.
6. Recreational Vehicles. Recreational vehicles shall either:
 - a. Temporary Placement
 - i. Be on site for fewer than 180 consecutive days; or
 - ii. Be fully licensed and ready for highway use. (A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions.)
 - b. Permanent Placement. Recreational vehicles that do not meet the limitations of Temporary Placement shall meet all the requirements for new construction.
7. Temporary Non-Residential Structures. Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the Floodplain Administrator for review and written approval:
 - a. A specified time period for which the temporary use will be permitted. Time specified may not exceed three months, renewable up to one 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 72 hours before landfall of a hurricane or immediately upon flood warning notification);
 - d. A copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and
 - e. Designation, accompanied by documentation, of a location outside the Special Flood Hazard Area, to which the temporary structure will be moved.

8. Accessory Structures. When accessory structures (sheds, detached garages, etc.) are to be placed within a Special Flood Hazard Area, the following criteria shall be met:
 - a. Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);
 - b. Accessory structures shall not be temperature-controlled;
 - c. Accessory structures shall be designed to have low flood damage potential;
 - d. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
 - e. Accessory structures shall be firmly anchored;
 - f. All service facilities such as electrical shall be installed; and
 - g. Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below Regulatory Flood Protection Elevation.
 - h. An accessory structure with a footprint less than 150 square feet or a minimal investment of \$3,000 or less that satisfies the criteria outlined above does not require the elevation or floodproofing. Elevation or floodproofing certifications are required for all other accessory structures.

9. Tanks. When gas and liquid storage tanks are to be placed within a Special Flood Hazard Area, the following criteria shall be met:
 - a. Underground tanks. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the effects of buoyancy assuming the tank is empty;
 - b. Above-ground tanks, elevated. Above-ground tanks in flood hazard areas shall be attached to an elevated to or above the design flood Regulatory Flood Protection Elevation on a supporting structure that is designed to prevent flotation, collapse or lateral movement during conditions of the design flood. Tank-supporting structures shall meet the foundation requirements of the applicable flood hazard area;
 - c. Above-ground tanks not elevated. Above-ground tanks that do not meet the elevation requirements of this code shall be permitted in flood hazard areas provided the tanks are anchored or otherwise designed and constructed to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the

effects of buoyancy assuming the tank is empty and the effects of flood-borne debris. designed, constructed, installed, and anchored to resist all flood-related and other loads, including the effects of buoyancy, during conditions of the design flood and without release of contents in the floodwaters or infiltration by floodwaters into the tanks. Tanks shall be designed, constructed, installed, and anchored to resist the potential buoyant and other flood forces acting on an empty tank during design flood conditions.

- d. Tank inlets and vents. Tank inlets, fill openings, outlets and vents shall be:
 - i. At or above the Regulatory Flood Protection Elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood; and
 - ii. Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.

10. Other Development. Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the Floodplain Administrator for review and written approval:

- a. Fences in regulated floodways and Non Encroachment Areas (NEAs) that have the potential to block the passage of floodwaters, such as stockade fences and wire mesh fences.
- b. Retaining walls, sidewalks and driveways in regulated floodways and NEAs. Retaining walls and sidewalks and driveways that involve the placement of fill in regulated floodways.
- c. Roads and watercourse crossings in regulated floodways and NEAs. Roads and watercourse crossings, including roads, bridges, culverts, low-water crossings and similar means for vehicles or pedestrians to travel from one side of a watercourse to the other side, that encroach into regulated floodways.

C. Standards for Floodplains Without Established Base Flood Elevations

Within the Special Flood Hazard Areas designated as Approximate Zone A where no Base Flood Elevation data have been provided by FEMA, the following provisions shall apply:

- 1. No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of twenty feet each side from top of bank or five times the width of the stream, whichever is greater,

unless certification with supporting technical data by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

2. The BFE used in determining the Regulatory Flood Protection Elevation shall be determined based on the following criteria:
 - a. When Base Flood Elevation data are available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or floodproofed in accordance with standards in.
 - b. When floodway or non-encroachment data are available from a Federal, State, or other source, all new construction and substantial improvements within floodway and non-encroachment areas shall also comply with the requirements of.
 - c. All subdivision, manufactured home park and other development proposals shall provide Base Flood Elevation data if development is greater than five acres or has more than 50 lots/manufactured home sites. Such BFE data shall be adopted by reference in accordance with the provisions of and utilized in implementing this ordinance.
 - d. When Base Flood Elevation data are not available from a Federal, State, or other source as outlined above, the reference level shall be elevated or floodproofed (nonresidential) to or above the Regulatory Flood Protection Elevation.

D. Standards for Riverine Floodplains with Base Flood Elevations but Without Established Floodways or Non-Encroachment Areas

Along rivers and streams where Base Flood Elevation data is provided by FEMA or is available from another source but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

E. Floodways and Non-Encroachment Areas

Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles. The following provisions shall apply to all development within such areas:

1. No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed and certified by a registered professional civil engineer, in accordance with standard engineering practice that the proposed encroachment would not result in any increase (0.00 feet) in the flood levels during the occurrence of the base flood and/or future base flood (if applicable). The certification and technical data shall be presented to the Floodplain Administrator for any change which would cause a rise in the base flood or future base flood elevation (if applicable) and will require notification of adjoining property owners and a Conditional Letter of Map Revision (CLOMR) from FEMA. If approved and constructed, as-built plans must be submitted by the property owner and approved by FEMA and a letter of map revision (LOMR) issued. A certificate of occupancy will not be issued without the above stated letter of map revision.
2. All development shall comply with all applicable flood hazard reduction provisions of this ordinance.
3. Construction of any vehicular parking lot in association with an Active Park or Passive Park shall be allowed provided that a permit is obtained from the Floodplain Administrator demonstrating that no fill is added to the floodway or non-encroachment area and there are no obstructions to the floodway or non-encroachment area. Any parking area authorized under this section does not have to be paved but must otherwise comply with other town regulations.
4. No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, provided the following provisions are met:
 - a. Anchoring and elevation standards are satisfied

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