

CHAPTER 11: Stormwater Management and Erosion Control

11.1 GENERAL PURPOSE AND INTENT

11.1.1 FINDINGS OF FACT

- A. Stormwater Management:** It has been determined that development and redevelopment can alter the hydrologic response of local watersheds and increases stormwater runoff rates and volumes, flooding, soil erosion, stream channel erosion, nonpoint and point source pollution, and sediment transport and deposition, as well as reducing groundwater recharge. These changes in stormwater runoff contribute to increased quantities of water-borne pollutants and alterations in hydrology which are harmful to the public health and safety as well as to the natural environment. These effects can be managed and minimized by applying proper design and well-planned controls to manage stormwater runoff from development sites. Further, the Federal Water Pollution Control Act of 1972 (“Clean Water Act”) and federal Phase II requirements, compel certain urbanized areas, including the Town of Tarboro, to adopt stormwater controls such as those included in this Chapter.
- B. Erosion and Sedimentation Control:** The erosion of soil from unstabilized development sites has adverse impacts on the condition of public and private property, impairs the Town of Tarboro stormwater system, and causes pollution and accelerated siltation of lakes, streams, and other watercourses. Pursuant to the North Carolina Sedimentation Pollution Control Act of 1973, as amended, the Town of Tarboro has been directed to implement an erosion and sedimentation control program as outlined in this Chapter.

11.1.2 PURPOSE

- A. Stormwater Management:** The purpose of this section 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-development stormwater runoff and nonpoint and point pollution associated with new development and redevelopment. This Ordinance seeks to meet its general purpose through the following specific objectives and means:
1. Establishing decision-making processes for development that protects the integrity of watersheds and preserves the health of water resources;

2. Requiring that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as is practicable in order to reduce flooding, stream bank erosion, nonpoint and point source pollution, and to maintain the integrity of stream channels and aquatic habitats;
3. Establishing minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quality and quantity;
4. Establishing design review criteria for the construction, function, and use of structural stormwater control measures (SCM) to ensure that they continue to function as designed, are maintained properly, and pose no threat to public safety;
5. Establishing administrative procedures for the submission, review, approval, and disapproval of stormwater management plans, for the inspection of approved projects, and to assure appropriate long-term maintenance.

B. Erosion and Sedimentation Control: The erosion and sedimentation control regulations of this Chapter are adopted for the purposes of regulating certain land-disturbing activities to control accelerated erosion and sedimentation of lakes and watercourses and prevent damage to public and private property by erosion and sedimentation.

11.2 STORMWATER MANAGEMENT AND EROSION CONTROL

11.2.1 NATURAL DRAINAGE SYSTEM TO BE UTILIZED

- A. To the extent practicable, all development shall conform to the natural contours of the land and natural and pre-existing man-made drainageways shall remain undisturbed.
- B. To the extent practicable, lot boundaries shall be made to coincide with natural and pre-existing man-made drainageways within subdivisions to avoid the creation of lots that can be built upon only by altering such drainageways.

11.2.2 DEVELOPMENTS MUST DRAIN PROPERLY

- A. All development shall be provided with a drainage system that is adequate to prevent undue retention of surface water on the development site. Surface water shall not be regarded as unduly retained if:

1. The retention results from a technique, practice, or device deliberately installed as part of an approved sedimentation or stormwater control plan; or
 2. The retention is not substantially different in location or degree than that experienced by the development site in its pre-development stage, unless such retention presents a danger to health or safety.
- B. No surface water may be channeled or directed into a sanitary sewer.
- C. Whenever practicable, the drainage system of a development shall coordinate and connect to the drainage systems or drainageways on surrounding properties or streets.
- D. Unless authorized by the Administrator, or elsewhere in this Ordinance, streets within the Town of Tarboro shall utilize curb and gutter and storm drains to provide adequate drainage.
- E. Drainage swales, curb and gutter, and storm drains shall be constructed in accordance with the design and construction standards of the Town of Tarboro.

11.2.3 STORMWATER MANAGEMENT

- A. The general standards contained in this Chapter shall apply throughout the planning jurisdiction of the Town of Tarboro. Developments located within Watershed Overlay Districts shall comply with the applicable requirements in §2.5 of this Ordinance.
- B. All developments shall be constructed and maintained so that adjacent properties are not unreasonably burdened with surface waters as a result of such developments. More specifically:
1. No development may be constructed or maintained so that such development unreasonably impedes the natural flow of water from higher adjacent properties across such development, thereby unreasonably causing substantial damage to higher adjacent properties; and

2. No development may be constructed or maintained so that surface waters from such development are unreasonable collected and channeled onto lower adjacent properties at such locations or at such volumes as to cause substantial damage to such lower adjacent properties.
- C. All developments shall contain an adequate drainage system for the proper drainage of all surface water. No new construction and no substantial improvements of a structure may take place unless the design of a drainage system is reviewed by the Administrator to assure that:
1. No surface water shall be channeled or directed into a sanitary sewer.
 2. Where feasible, the subdivider shall connect to an existing storm drainage system.
 3. Where an existing storm drainage system cannot feasibly be extended to the subdivision, a surface drainage system shall be designed to protect the proposed development from water damage.
 4. Surface drainage courses shall have side slopes of not less than the natural angle of repose for the soil but not less than a three 3:1 slope in which the course is constructed and courses shall be of sufficient size to accommodate the drainage area without flooding the adjacent properties.
 5. The proposed storm drainage system is consistent with the Town of Tarboro Manual of Standard Design, Details, and Specifications.
- D. A drainage plan shall be required for any development or land use except for land developed or used for agricultural purposes which involves or would create more than one-half acre of impervious ground cover. No building permit will be issued for any such development until the drainage plan is approved by the Administrator.
- E. A drainage plan submitted for approval under these provisions must include, but is not limited to, the following information: a site plan showing existing and proposed buildings; storm drainage facilities, easements, and ground cover; site construction plans, grading plans, and drainage system; drainage facility design data including a drainage area map, engineering calculations, area of impervious cover, and total land area.

- F. A drainage plan submitted for approval under these provisions will be proposed and approved using the standards of the Administrator.
- G. Impervious cover, for the purposes of this Chapter, means any ground cover including asphalt, concrete, stone, brick terrazzo, roofing, clay tile, or any other natural or manmade material that resists the absorption of surface water.
- H. These standards of this Section do not apply to structures or impervious ground cover in existence prior to the adoption of these provisions and these previously existing areas will not be used in calculating the 20,000 square feet in §11.2.3.D
- I. The Administrator will not approve a drainage plan if the impervious cover which would result would increase the storm water rate of runoff from the site unless measures are taken to control and limit the rate of runoff to the level which existed prior to the installation of the impervious cover. This determination will be based on the expected ten-year storm (a flood which could be expected to occur once in ten (10) years). The Administrator will waive the requirement for a drainage plan if the land being developed is part of a larger project which has received prior approval for and has implemented an overall drainage plan so long as the rate of runoff from the property presently under consideration does not exceed that which was previously approved. The Administrator may also waive any requirements for the detention of water when it would drain directly into land subject to the floodway regulations of the Town Code.

11.2.4 SEDIMENTATION AND EROSION CONTROL

- A. No zoning or Special Use Permit, or major development permit may be issued with respect to any development that would cause land disturbing activity prior to submission of an erosion and sedimentation control plan to the NC Department of Land Management under NCGS §113A-57(4) unless the Commission has certified to the Town either that:
 - 1. An erosion control plan has been submitted to and approved by the Commission; or

2. The Commission has examined the preliminary plans for the development and it reasonably appears that an erosion control plan can be approved upon submission by the developer of more detailed construction or design drawings. However, in this case, construction of the development may not begin, no building permits may be issued, and final plat approval for subdivisions may not be given until the Commission approves the erosion control plan.
- B. For the purposes of this Section, “land disturbing activity” means any use of the land by any person in residential, industrial, educational, institutional, or commercial development, highway and road construction and maintenance that results in a change in the natural topography or cover, and that may cause or contribute to sedimentation except activities that are exempt under NCGS §113A-52(6). Sedimentation occurs whenever solid particulate matter, mineral or organic, is transported by water, air, gravity, or ice from the site of its origin.
 - C. Except where a larger buffer area is required for developments located in Watershed Overlay Districts, all developments shall maintain a twenty-five-foot vegetated buffer along each side of a stream or natural drainageway. The twenty-five-foot distance shall be measured from the top edge of the streambank or drainageway. If no drainageway bank exists, the centerline of the drainageway swale shall be used for measurement purposes. The vegetated buffer shall remain undisturbed except as may be necessary to accommodate roads (provided they cross at a horizontal angle of at least 60 degrees, utilities and their easements, pedestrian paths and their easements and approved water-dependent uses such as marinas, docks, piers, boat ramps and bridges. In cases in which a twenty-five-foot buffer may not be practical nor desirable, the Planning board may consider a special exception if it finds that an acceptable alternative means of handling stormwater can be achieved without maintaining a twenty-five-foot vegetated buffer.

11.2.5 STORMWATER CONTROL STRUCTURES

- A. All stormwater control structures shall be designed by either a North Carolina registered professional engineer or landscape architect, to the extent that the General Statutes, Chapter 89A, allow. Other stormwater systems shall be designed by a North Carolina registered professional with qualifications appropriate for the type of system required; these registered professionals are defined as professional engineers, landscape architects, to the extent that the General Statutes, Chapter 89A allow and land surveyors, to the extent that the design represents

incidental drainage within a subdivision, as provided in General Statutes 89(C)-3(7).

- B. Any device permitted in the North Carolina Best Management Practices Manual is permitted within the Town of Tarboro as long as the proposed device meets all required standards and specifications.
- C. In addition to the vegetative filters required in subsection §11.2.5.C.6, all land areas outside of the pond shall be provided with a ground cover sufficient to restrain erosion within 30 days after any land disturbance. Upon completion of the stormwater control structure, a permanent ground cover shall be established and maintained as part of the maintenance agreement described in §11.2.6 of this Ordinance.
- D. A description of the area containing the stormwater control structure shall be prepared and filed, consistent with §11.2.7, as a separate deed with the Edgecombe County Register of Deeds along with any easements necessary for general access to the stormwater control structure. The deeded area shall include the detention pond, vegetative filters, all pipes and water control structures, berms, dikes, etc., and sufficient area to perform inspections, maintenance, repairs and reconstruction.
- E. Qualifying areas of the stormwater control structure may be considered pervious when computing total built-upon area. However, if the structure is used to compute the percentage built-upon area for one site, it shall not be used to compute the built-upon area for any other site or area.

11.2.6 FINANCIAL SECURITY FOR STORMWATER CONTROL STRUCTURES

- A. All new stormwater control structures authorized in Chapter 12 shall be conditioned on the posting of adequate financial assurance for the purpose of maintenance, repairs or reconstruction necessary for adequate performance of the stormwater control structures.
- B. Financial assurance shall be in the form of the following:

- 1. Surety performance bond or other security:** The permit applicant shall obtain either a performance bond from a surety bonding company authorized to do business in North Carolina, an irrevocable letter of credit or other instrument readily convertible into cash at face value payable to the Town of Tarboro or placed in escrow with a financial institution designated as an official depository of the Town of Tarboro. The bond or other instrument shall be in an amount equal to 125% of the total cost of the stormwater control structure, as estimated by the Administrator and approved by the Town Council. The total cost of the stormwater control structure shall include the value of all materials such as piping and other structures; seeding and soil stabilization; design and engineering; and, grading, excavation, fill, etc. The costs shall not be prorated as part of a larger project, but rather under the assumption of an independent mobilization.
- 2. Cash or equivalent security deposited after the release of the performance bond.** Consistent with §11.2.8., the permit applicant shall deposit with the Town of Tarboro either cash or other instrument approved by the Town Council that is readily convertible into cash at face value. The cash or security shall be in an amount equal to 15% of the total cost of the stormwater control structure or the estimated cost of maintaining the stormwater control structure over a ten-year period, whichever is greater. The estimated cost of maintaining the stormwater control structure shall be consistent with the approved operation and maintenance plan or manual provided by the developer under §11.2.8. The amount shall be computed by estimating the maintenance cost for 25 years and multiplying this amount by two-fifths (2/5) or four-tenths (0.4).
- C.** Consistent with Chapter 12 of this Ordinance, the permit applicant shall enter into a binding operation and maintenance agreement between the Town of Tarboro and all interests in the development. Said agreement shall require the owning entity to maintain, repair and, if necessary, reconstruct the stormwater control structure in accordance with the operation and management plan or manual provided by the developer. The operation and maintenance agreement shall be filed with the Edgecombe County Register of Deeds by the Administrator.
- D.** Default under the performance bond or other security. Upon default of the permit applicant to complete and/or maintain the stormwater control structure as spelled out in the performance bond or other security, the council may obtain and use all or any portion of the funds necessary to complete the improvements based on an engineering

estimate. The council shall return any funds not spent in completing the improvements to the owning entity.

- E. Default under the cash security. Upon default of the owning entity to maintain, repair and, if necessary, reconstruct the stormwater control structure in accordance with the operation and maintenance agreement, the council shall obtain and use all or any portion of the cash security to make necessary improvements based on an engineering estimate. Such expenditure of funds shall only be made after exhausting all other reasonable remedies seeking the owning entity to comply with the terms and conditions of the operation and maintenance agreement. The council shall not return any of the deposited cash funds.

11.2.7 MAINTENANCE AND INSPECTION OF STORMWATER CONTROL STRUCTURES

- A. An operation and maintenance plan or manual shall be provided by the developer for each stormwater control structure authorized in Chapter 12, indicating what operation and maintenance actions are needed, what specific quantitative criteria will be used for determining when those actions are to be taken and, consistent with the operation and maintenance agreement, who is responsible for those actions. The plan shall clearly indicate the steps that will be taken for restoring a stormwater control structure to design specifications if a failure occurs.
- B. Landscaping and grounds management shall be the responsibility of the owning entity. However, vegetation shall not be established or allowed to mature to the extent that the integrity of the control structure is diminished or threatened, or to the extent of interfering with any easement or access to the stormwater control structure.
- C. Except for general landscaping and grounds management, the owning entity shall notify the Administrator prior to any repair or reconstruction of the stormwater control structure. All improvements shall be made consistent with the approved plans and specifications of the stormwater control structure and the operation and maintenance plan or manual. After notification by the owning entity, a qualified professional employed by the Town of Tarboro shall inspect the completed improvements and shall inform the owning entity of any required additions, changes or modifications and of the time period to complete said improvements. The Administrator may consult with an engineer or landscape architect (to the extent that the General Statutes, Chapter 89A allow) designated by the Town Council.
- D. Amendments to the plans and specifications of the stormwater control structure and/or the operation and maintenance plan or manual shall be approved by the Town Council. Proposed changes shall be prepared by a North Carolina registered professional engineer or landscape

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architect (to the extent that the General Statutes, Chapter 89A allow) and submitted to and reviewed by the Administrator prior to consideration by the Town Council.

- 1.** If the Town Council approves the proposed changes, the owning entity of the stormwater control structure shall file sealed copies of the revisions with the office of the Administrator.
 - 2.** If the Town Council disapproves the changes, the proposal may be revised and resubmitted to the Town Council as a new proposal. If the proposal has not been revised and is essentially the same as that already reviewed, it shall be returned to the applicant.
- E.** If the Town Council finds that the operation and maintenance plan or manual is inadequate for any reason, the council shall notify the owning entity of any required changes and shall prepare and file copies of the revised agreement with the Edgecombe County Register of Deeds, the office of the Administrator and the owning entity.
- F.** Processing and inspection fees shall be submitted in the form of a check or money order made payable to the town. Applications shall be returned if not accompanied by the required fee.
- G.** A permit and inspection fee schedule, as approved by the Tarboro Town Council shall be posted in the office of the Administrator.
- H.** Inspection fees shall be valid for 60 days. An inspection fee shall be required when improvements are made to the stormwater control structure consistent with Subsection 11.2.7.C, except in the case when a similar fee has been within the last 60 days.
- I.** The stormwater control structure shall be inspected by the Administrator, after the owning entity notifies the Administrator that all work has been completed. At this inspection, the owning entity shall provide:
 - 1.** The signed deed, related easements and survey plat for the stormwater control structure ready for filing with the Edgecombe County Register of Deeds;
 - 2.** A certification sealed by an engineer or landscape architect (to the extent that the General Statutes, Chapter 89A, allow) stating that the stormwater control structure is complete and consistent with the approved plans and specifications.

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- J.** The Administrator shall present the materials submitted by the developer and the inspection report and recommendations to the Town Council at its next regularly scheduled meeting.

 - 1.** If the council approves the inspection report and accepts the certification, deed and easements, the council shall file the deed and easements with the Edgecombe County Register of Deeds, release up to 75% percent of the value of the performance bond or other security and issue an occupancy permit for the stormwater control structure, consistent with Chapter 15 of this Ordinance.
 - 2.** If deficiencies are found, the council shall direct that improvements and inspections be made and/or documents corrected and resubmitted to the council.

- K.** No sooner than 1 year after the filing date of the deed, easements and maintenance agreement, the developer may petition the Town Council to release the remaining value of the performance bond or other security. Upon receipt of said petition, the Administrator shall inspect the stormwater control structure to determine whether the controls are performing as designed and intended. The Administrator shall present the petition, inspection report and recommendations to the Town Council.

 - 1.** If the council approves the report and accepts the petition, the developer shall deposit with the Town Council a cash amount equal to that described in §11.2.6.C after which, the council shall release the performance bond or other security.
 - 2.** If the council does not accept the report and rejects the petition, the council shall provide the developer with instructions to correct any deficiencies and all steps necessary for the release the performance bond or other security.

- L.** All stormwater control structures shall be inspected on an annual basis and submitted to the Administrator by October 1st every year to determine whether the controls are performing as designed and intended. Records of inspection shall be maintained on forms approved or supplied by the North Carolina Division of Environmental Management. Annual inspections shall begin within one year of filing date of the deed for the stormwater control structure.

- M.** In the event the Administrator discovers the need for corrective action or improvements, the Administrator shall notify the owning entity of the needed improvements and the date by which the corrective action is to be completed. All improvements shall be made consistent with the

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plans and specifications of the stormwater control structure and the operation and maintenance plan or manual. After notification by the owning entity, the Administrator shall inspect and approve the completed improvements. The Administrator may consult with an engineer or landscape architect (to the extent that the General Statutes, Chapter 89A, allow) designated by the Town Council.