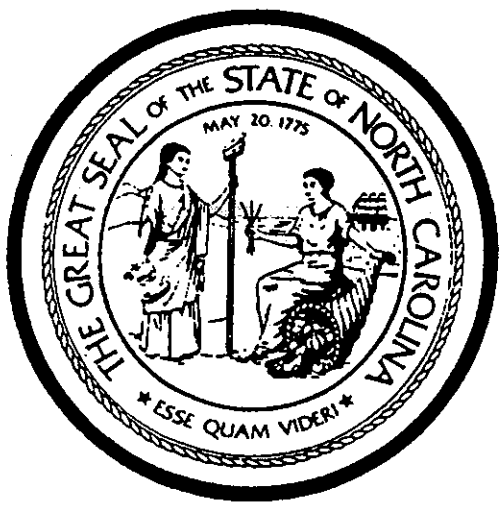
STATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

ADMINISTRATIVE CODE SECTION:

15 NCAC 2H .1000
Stormwater Runoff Disposal



Current Through January 1, 1988

Environmental Management Commission Raleigh, North Carolina

SECTION .1000 - STORMWATER RUNOFF DISPOSAL

.1001 STORMWATER DISPOSAL POLICY

(a) The increase in stormwater runoff associated with land development activities can substantially increase inputs of waste constituents present in stormwater to waters of the state over that which occurs in natural, undeveloped watersheds. The increased pollutant loading from stormwater runoff may degrade ambient water quality, adversely impact best usage or otherwise violate water quality standards. For these reasons, it is the goal of the commission to minimize any water quality impacts of development activities to ensure that existing and designated uses are maintained and protected in accordance with the provisions of this Section. In establishing this goal, the commission recognizes that the U.S. Environmental Protection Agency will be establishing permit requirements and best management practices for stormwater point sources pursuant to the Federal Water Pollution Control Act as amended.

(b) The rules in this Section to control pollutants associated with stormwater runoff apply to development of land for residential, commercial, industrial, or institutional use but do not apply to land management activities associated with agriculture or silviculture.

History Note: Statutory Authority G.S. 143-214.1; 143-215.3(a)(1); Eff. January 1, 1988.

.1002 DEFINITIONS

The definition of any word or phrase in this Section shall be the same as given in Article 21, Chapter 143 of the General Statutes of North Carolina, as amended. Other words and phrases used in this Section are defined as follows:

(1) Development means any land disturbing activity which adds to or changes the amount of impervious or partially impervious cover on a land area or which otherwise decreases the infiltration of precipitation into the soil thus altering the hydrological characteristics of the area;

(2) Drainage area or watershed means that area contributing runoff to a single point measured in a horizontal plane which is enclosed by a ridge line;

(3) Infiltration systems mean stormwater treatment systems designed to allow runoff to pass or move (infiltrate) into the soil surface;

(4) On-site stormwater systems mean the systems necessary to control stormwater within an individual development project;
(5) Off-site stormwater systems mean the systems necessary to control stormwater from more than one development which is owned and operated as a duly licensed utility or by a local government;
(6) Built-upon area means that portion of an individual development project that is covered by impervious or partially impervious cover including buildings, pavement, recreation facilities, etc. but not including decking.
(7) Redevelopment means any rebuilding activity following fires, hurricanes or other natural disaster or other public restoration projects designated by the commission;
(8) Wet detention pond means a structure that provides for the storage and treatment of runoff and includes a permanent pool of water.
(9) Coastal Counties include Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington;
(10) Sedimentation/erosion control plan means any plan submitted to the Division of Land Resources or delegated authority in accordance with 15 NCAC 4B .0005.
(11) CAMA major development permits mean those permits required by the Coastal Resources Commission according to 15 NCAC 7J Sections .0100 and .0200.
(12) Vegetative filter means an area of natural or planted vegetation through which stormwater runoff flows in a diffuse manner so that runoff does not become channelized and which provides for infiltration of runoff and filtering of pollutants. The direction of stormwater flow defines the width of the filter.
(13) Stormwater collection system means any pipe, channel, curb or gutter for the primary purpose of transporting (not treating) runoff but does not include grassed swales, or pipes used to carry drainage underneath built-upon surfaces that are associated with development controlled by the provisions of Rule .1003 (a) (2) and (3) in this Section.

History Note: Statutory Authority G.S. 143-214.1; 143-215.3(a)(1); Eff. January 1, 1988.

.1003 COASTAL STORMWATER DISPOSAL

(a) Applicability. The intent of the commission is to achieve the water quality protection which low density development near productive coastal waters would provide. To that end, the director by applying the standards in this Rule will cause development to comply with the antidegradation requirements specified in 15 NCAC 2B .0201 by protecting high quality waters and highly productive aquatic resources from the adverse impacts of uncontrolled high density development or the potential failure of stormwater control measures. Stormwater control measures as described in Paragraphs (c) through (l) of this Rule are required for any development activities in the coastal counties which require a CAMA major development permit or a sedimentation/erosion control plan after January 1, 1988 unless the development:

(1) is one acre or less;

(2) drains to SA waters or unnamed tributaries to SA waters; has a built-upon area of 25 percent or less; or proposes development of single-family residences on lots with one-third of an acre or greater with a built-upon area of 25 percent or less; has no stormwater collection system; and built-upon area is at least 30 feet from surface waters;

(3) drains to waters other than SA; has a built-upon area of 30 percent or less, or proposes development of single-family residences on lots with one-third of an acre or greater with a built-upon area of 30 percent or less; has no stormwater collection system; and built-upon area is at least 30 feet from surface waters;

(4) controls runoff through an off-site stormwater system meeting provisions of this Rule and permitted in accordance with G.S. 143-215.1(d);

(5) is redevelopment which meets the requirements of this Rule to the maximum extent practicable;

(6) otherwise meets the provisions of this Rule and has boat ramps, public roads and public bridges which minimize impervious surfaces, divert stormwater away from surface waters as much as possible and employ other best management practices to minimize water quality impacts; or

(7) is certified by the director that the site is situated such that water quality standards and uses are not threatened and the developer demonstrates that the development meets the following criteria:

(A) the plans and specifications indicate stormwater control measures which will be installed in lieu of the requirements of this Rule, or

(B) the development is located such a distance from surface waters that impacts from pollutants present in stormwater from the site will be effectively mitigated.

Development designed to meet the low density requirements in Subparagraphs (2) and (3) of this Paragraph must demonstrate that no areas within the project site are of such high density that stormwater threatens water quality. Deed restrictions and protective covenants used to ensure that subdivisions maintain the development consistent with the plans and specifications approved by the division will include the state as a beneficiary of the restrictions.

(b) Projects with stormwater control measures in accordance with the provisions of this Rule shall be deemed permitted pursuant to G.S. 143-215.1(d) upon receipt of a permit from the Division of Coastal Management or plan approval from the Division of Land Resources (or delegated authority). In addition, NPDES permits for stormwater point sources may be required according to the provisions of 15 NCAC 2H .0126.

(c) Stormwater Control Options. Stormwater control measures which can be approved pursuant to this Rule and which will not be considered innovative include:

(1) Stormwater infiltration systems including infiltration basins/ponds, swales, and vegetative filters; and

(2) Wet detention ponds.

(d) Innovative Systems. Innovative measure for controlling stormwater which are not well established through actual experience may be approved on a demonstration basis under the following conditions:

(1) There is a reasonable expectation that the control measures will be successful;

(2) The projects are not located near high quality waters;

(3) Monitoring requirements are included to verify the performance of the control measures; and

(4) Alternatives are available if the control measures fail and will be required when the director determines that the system has failed;

No more than five projects utilizing the same innovative control measure will be approved until the technology is proven over a time frame to be determined on a case-by-case basis. These five projects will include projects approved since November 1, 1986 according to the provisions of 15 NCAC 2H .0408.

(e) Design Criteria for Development Draining to Outstanding Resource Waters. Stormwater control requirements to protect coastal waters classified as Outstanding Resource Waters (ORW) pursuant to 15 NCAC 2B .0216 shall be determined in the process to reclassify the waters as ORW. After the commission has

received a request to classify Class SA waters as ORW and given permission to the director to schedule a public hearing to consider reclassification and until such time as specific stormwater design criteria become effective, only development which meets the requirements of Paragraph (a) (2), (5) or (6) will be approved within 575 feet of mean high water of these waters.

(f) Design Criteria for Development Draining Directly to Class SA Waters.

(1) Direct outlet channels or pipes to SA waters are prohibited unless permitted in accordance with 15 NCAC 2H .0126.

(2) Infiltration control systems must be designed to control the runoff from all impervious surfaces generated by one and one-half inches of rainfall. The size of the system must take into account the runoff from any pervious surfaces draining to the system.

(3) Runoff in excess of the design volume must flow overland through a vegetative filter with a minimum width of 50 feet measured from mean high water of SA waters;

(g) Design Criteria For Development Not Draining to SA Waters.

(1) Infiltration control systems must be designed to control the runoff from all impervious surfaces generated by one inch of rainfall. The size of the system must take into account the runoff from any pervious surfaces draining to the system;

(2) Wet detention ponds must be designed according to methods approved by the director for 85 percent removal of total suspended solids in the permanent pool and storage of runoff from a one inch rainfall from the site above the permanent pool;

(3) Vegetative filters are required for the overflow and discharge of all stormwater wet detention ponds. These filters shall be at least 30 feet in length;

(4) Additional control measures may be required on a case-by-case basis to protect high quality waters or specific water uses.

(h) Infiltration System Requirements. Infiltration systems may be designed to provide infiltration of the entire design rainfall volume required for a site or a series of successive systems may be utilized. Infiltration may also be used to pretreat runoff prior to disposal in a wet detention ponds. The following are requirements:

(1) Infiltration systems shall be a minimum of 30 feet from surface waters and 50 feet from Class SA waters;

(2) Infiltration systems shall be a minimum distance of 100 feet from water supply wells;
(3) The bottom of infiltration systems shall be a minimum of 2 feet above the seasonal high water table;
(4) Infiltration systems must be designed such that runoff in excess of the design volume by-passes the system and does not flush pollutants through the system;
(5) Infiltration systems must be designed to completely draw down to pre-storm levels within five days and a hydrogeologic evaluation may be required to determine whether the system can draw down in five days;
(6) Soils must have a minimum hydraulic conductivity of 0.52 inches per hour to be suitable for infiltration;
(7) Infiltration systems must not be sited on or in fill material;
(8) Infiltration systems must have an observation well to provide ready inspection of the system;
(9) If runoff is directed to infiltration systems during construction of the project, the system must be restored to design specifications after the project is complete and the entire drainage area is stabilized.

(i) Wet Detention Pond Requirements. These practices can be used as a primary treatment device or as a secondary device following an infiltration system. Wet detention ponds shall be designed for a specific pollutant removal according to modeling techniques approved by the director. Specific requirements for these systems are as follows:

(1) the design storage volume shall be above the permanent pool;
(2) The discharge rate from these systems following the one inch rainfall design storm shall be such that the runoff does not draw down to the permanent pool level in less than two days and that the pond is drawn down to the permanent pool level within at least five days;
(3) The mean depth shall be a minimum of three feet;
(4) The inlet structure must be designed to minimize turbulence using baffles or other appropriate design features;
(5) Pretreatment of the runoff by the use of infiltration swales is encouraged to minimize sedimentation and eutrophication of the detention pond.

(j) Vegetative Filter Requirements. Vegetative filters shall be used as a non-structural method for providing additional infiltration, filtering of pollutants and minimizing stormwater impacts. Requirements for these filters are as follows:

(1) A distribution device such as a swale shall be used to provide even distribution of runoff over the length of the vegetative filter;
(2) The slope and width of the vegetative filter shall be determined so as to provide a non-erosive velocity of flow-through the filter for a 10-year, 24-hour storm with a 10-year, 1-hour intensity and the portion of the filter representing the minimum filter width specified in Paragraphs (f) and (g) of this Rule shall have a slope of five percent or less;
(3) Vegetation in the filter may be natural vegetation, grasses or artificially planted wetland vegetation appropriate for the site characteristics;

(k) Operation and maintenance plans. An operation and maintenance plan or manual shall be provided by the developer for stormwater systems, 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 who is responsible for those actions prior to approval of the development by the division. The plan must clearly indicate the steps that will be taken and who will be responsible for restoring a stormwater system to design specifications if a failure occurs and will include an acknowledgement by the responsible party. Development must be maintained consistent with the requirements in these plans and modifications to these plans must be approved by the division.

(l) System Design. Stormwater systems must be designed by a North Carolina registered professional with qualifications appropriate for the type of system required; design stormwater management systems; these registered professionals are defined as:

(1) professional engineers;
(2) landscape architects, to the extent that the General Statutes, Chapter 89A, allow; and
(3) registered land surveyors, to the extent that the design represents incidental drainage within a subdivision, as provided in General Statute 89(C)-3(7).

Upon completion of construction, a registered professional appropriate for the type of stormwater system designed must certify that the system was inspected during construction and was constructed in substantial conformity with plans and specifications reviewed by the division and complies with the requirements of this Rule.

History Note: Statutory Authority G.S. 143-214.1; 143-215.1(d); 143-215.3(a)(1); Eff. January 1, 1988.

.1004 STATEWIDE STORMWATER GUIDELINES

The division will periodically develop guidelines for the control of stormwater pollution from various development practices and to protect specific water uses; these guidelines will be provided to requesting individuals, institutions, local governments, or state/federal agencies on request for use in developing control strategies for mitigating stormwater pollution.

History Note: Statutory Authority G.S. 143-214.1; 143-215.3(a)(1); 143-215.8A; Eff. January 1, 1988.