15A NCAC 02H .1013 is proposed for amendment as follows:

15A NCAC 02H .1013 minimum Design Criteria for all projects subject to state stormwater programs.

The following requirements apply to projects subject to a stormwater program set forth in 15A NCAC 02H .1001.

(1) CALCULATION OF PROJECT DENSITY. The following requirements shall apply to the calculation of project density.

(a) Project density shall be calculated as the total built-upon area divided by the total project area;

(b) A project with existing development may use the calculation method in Sub-Item (1)(a) or shall have the option of calculating project density as the difference of total built-upon area minus existing built-upon area divided by the difference of total project area minus existing built-upon area.

(c) Total project area shall exclude the following:

(i) The normal pool of impounded areas;

(ii) The area between the banks of streams and rivers;

(iii) The area below the Normal High Water (NHW) line or Mean High Water (MHW) line; and

(iv) Areas defined as “coastal wetlands” pursuant to 15A NCAC 07H .0205, as measured landward from the Normal High Water (NHW) line.

(d) Projects under a common plan of development shall be considered as a single project for purposes of density calculation;

(2) DESIGN REQUIREMENTS FOR LOW DENSITY PROJECTS. Low density projects shall meet all of the following minimum design criteria:

(a) DENSITY THRESHOLDS. Low density projects shall not exceed the low density development thresholds set forth in the stormwater program to which they are subject. For projects subject to the requirements for High Quality Waters, Outstanding Resource Waters, and Water Supply Watersheds, dwelling unit per acre or minimum lot size may be used instead of density to establish low density status for single-family detached residential development as set forth in Rules 15A NCAC 02H .1015 and .1023;

(b) DIFFUSE FLOW. Projects shall be designed to maximize diffuse flow through vegetated areas and minimize channelization of flow;

(c) VEGETATED CONVEYANCES. Stormwater that cannot be released as diffuse flow shall be transported by vegetated conveyances. A minimal amount of non-vegetated conveyance solely for erosion protection or a minimal amount of piping for driveways or culverts shall be allowed when it cannot be avoided; and

(d) CURB OUTLET SWALES. Low density projects may use curb and gutter with outlets to convey stormwater to grassed swales or vegetated areas prior to the runoff discharging to vegetative filters or wetlands. Requirements for these curb outlet systems are as follows:

(i) The curb outlets shall be located such that the swale or vegetated area can carry the peak flow from the 10-year storm and at a non-erosive velocity;

(ii) The longitudinal slope of the swale or vegetated area shall not exceed five percent, where practicable. Where this is not practical due to physical constraints, devices to slow the rate of runoff and encourage infiltration to reduce pollutant delivery shall be provided;

(iii) The swale shall be trapezoidal with a minimum bottom width of two feet;

(iv) The side slopes of the swale or vegetated area shall be no steeper than 3:1 (horizontal to vertical) and;

(v) The minimum length of the swale or vegetated area shall be 100 feet.

(e) AREAS OF CONCENTRATED DEVELOPMENT. Areas of concentrated development within a low density development shall be located away from surface waters and drainageways to the maximum extent practicable.

(3) DESIGN REQUIREMENTS FOR HIGH DENSITY PROJECTS. High density projects are projects that do not conform to Item (2) of this rule. High density projects shall meet all of the following minimum design criteria:

(a) TREATMENT REQUIREMENTS. The stormwater from the project shall be treated in SCMs. The SCMs shall be designed, constructed, and maintained so that the project achieves either runoff treatment or runoff volume match.

(i) Runoff treatment shall be achieved when all of the stormwater runoff from new built-upon areas on the project at the ultimate built-out potential is treated in a primary SCM. Primary SCMs shall include: wet ponds, stormwater wetlands, infiltration systems, sand filters, bioretention cells, permeable pavement, green roofs, rainwater harvesting, and approved new stormwater technologies.

(ii) Runoff volume match shall be achieved when stormwater from the project at the ultimate built-out potential is controlled such that post-development runoff volume does not exceed pre-development runoff volume.

(b) OFF-SITE STORMWATER. Stormwater runoff from off-site areas and existing development is not required to be treated in the SCM. Runoff from off-site areas or existing development that is not bypassed shall be included in sizing of on-site SCMs.

(c) CALCULATION METHODS. The required runoff volume to be controlled shall be calculated using either the Simple Method or the difference between pre- and post-development runoff volume computed using the discrete Natural Resources Conservation Service (NRCS) Curve Number Method. The depth of the design storm is set forth in the stormwater program to which the project is subject.

(d) MDC FOR SCMS. SCMs shall meet the relevant MDC set forth in Rules .1040 through .1060 of this Section.

(4) VEGETATED SETBACKS. Vegetated setbacks shall be required along waters indicated on the most recent versions of the United States Geological Survey (USGS) 1:24,000 scale (7.5 minute) quadrangle topographic maps, or other maps developed by the Department or a local government and approved by the Commission. Vegetated setback requirements shall not apply in cases where a water is recorded in the river basin classification schedule but the applicant provides documentation from the Division of Water Resources or the U.S. Army Corps of Engineers that the water is not present on the ground. These setbacks shall be in accordance with the stormwater programs to which they are subject in addition to the following:

(a) The width of a vegetated setback shall be measured horizontally from the normal pool elevation of impounded structures, from the top of bank of each side of streams or rivers, and from the mean high waterline of tidal waters, perpendicular to the shoreline;

(b) Vegetated setbacks may be cleared or graded, but shall be replanted and maintained in grass or other plant material;

(c) Built-upon area in the vegetated setback shall be limited to:

(i) Publicly-funded linear projects such as roads, greenways, and sidewalks;

(ii) Water dependent structures such as docks; and

(iii) Minimal footprint uses such as poles, signs, and security lights.

(d) In order to place built-upon area within a vegetated setback, the applicant shall demonstrate that:

(i) There is no practical alternative to siting the built-upon area within the vegetated setback;

(ii) That the built-upon area has been minimized; and

(iii) That channelizing runoff from the built-upon area has been avoided.

(e ) Artificial streambank and shoreline stabilization shall not be subject to the requirements of this Item.

(5) VEGETATED CONVEYANCES. Vegetated conveyances shall meet all of the following requirements:

(a) Vegetated conveyances shall be designed:

(i) With side slopes no steeper than 3:1 (horizontal to vertical). Steeper side slopes may be allowed by the Division on a case-by-case basis provided that it is demonstrated with engineering calculations and on-site soil investigation that the soils and vegetation will remain stable in perpetuity; and

(ii) Such that they do not erode during the peak flow from the 10-year storm event as demonstrated by engineering calculations.

(b) An operation and maintenance (O&M) plan shall be provided for the vegetated conveyances. An O&M plan shall indicate the steps that shall be taken and who shall be responsible for restoring a stormwater system to design specification if a failure occurs. O&M plans shall include an acknowledgment by the owner and shall be signed and notarized. O&M plans shall be recorded on the plat.

(6) STORMWATER OUTLETS. Stormwater outlets shall be designed so that they do not cause erosion downslope of the discharge point during the peak flow from the 10-year storm event as shown by engineering calculations.

(7) DEED RESTRICTIONS. The permittee shall record deed restrictions and protective covenants to ensure development activities maintain the development consistent with the plans and specifications approved by the Division.

(8) COMPLIANCE WITH OTHER REGULATORY PROGRAMS. Project designs shall comply with all other applicable requirements pursuant to G.S. 143-214.1, 143-214.5, 143-214.7, and 143-215.3(a)(1).

History Note: Authority G.S. 143‑214.1; 143‑214.7; 143‑215.1; 143‑215.3(a);

Eff. September 1, 1995;

This Rule is superseded by S.L. 2008-211 Eff. October 1, 2008;

Amended Eff. March 1, 2013; July 3, 2012.