

### **15A NCAC 02H .1003 REQUIREMENTS THAT APPLY TO ALL PROJECTS**

The following requirements shall apply to projects subject to any North Carolina stormwater program set forth in Rule .1001 of this Section.

- (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) areas below the Normal High Water Line (NHWL); and
    - (ii) areas defined as "coastal wetlands" pursuant to 15A NCAC 07H .0205, herein incorporated by reference, including any subsequent amendments and editions, and may be accessed at no cost at <http://reports.oah.state.nc.us/ncac.asp> as measured landward from the Normal High Water (NHW) line; and
  - (d) On a case-by-case basis as determined by the Division during application review, projects may be considered to have both high and low density areas based on one or more of the following criteria:
    - (i) natural drainage area boundaries;
    - (ii) variations in land use throughout the project; and
    - (iii) construction phasing.
- (2) **DESIGN REQUIREMENTS FOR LOW DENSITY PROJECTS.** Low density projects shall meet the following minimum design criteria:
  - (a) **DENSITY THRESHOLDS.** Low density projects shall not exceed the low density development thresholds set forth in the stormwater programs to which they are subject pursuant to Rules .1017, .1019, and .1021 of this Section. For projects subject to the requirements for Non-Coastal High Quality Waters and Outstanding Resource Waters, dwelling unit per acre may be used instead of density to establish low density status for single-family detached residential development as set forth in Rule .1021 in this Section;
  - (b) **DISPERSED FLOW.** Projects shall be designed to maximize dispersed flow through vegetated areas and minimize channelization of flow;
  - (c) **VEGETATED CONVEYANCES.** Stormwater that cannot be released as dispersed flow shall be transported by vegetated conveyances. A minimal amount of non-vegetated conveyances for erosion protection or piping for driveways or culverts under a road shall be allowed by the permitting authority when it cannot be avoided. Vegetated conveyances shall meet the following requirements:
    - (i) Side slopes shall be no steeper than 3:1 (horizontal to vertical) unless it is demonstrated to the permitting authority that the soils and vegetation will remain stable in perpetuity based on engineering calculations and on-site soil investigation; and
    - (ii) The conveyance shall be designed so that it does not erode during the peak flow from the 10-year storm as demonstrated by engineering calculations.
  - (d) **CURB OUTLET SYSTEMS.** Low density projects may use curb and gutter with outlets to convey stormwater to grassed swales or vegetated areas. Requirements for these curb outlet systems shall be as follows:
    - (i) The curb outlets shall be designed such that the swale or vegetated area can carry the peak flow from the 10-year storm at a non-erosive velocity;
    - (ii) The longitudinal slope of the swale or vegetated area shall not exceed five percent, except where not practical due to physical constraints. In these cases, devices to slow the rate of runoff and encourage infiltration to reduce pollutant delivery shall be provided;
    - (iii) The swale's cross-section 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);
  - (v) The minimum length of the swale or vegetated area shall be 100 feet; and
  - (vi) Low density projects may use treatment swales designed pursuant to Rule .1061 of this Section in lieu of the requirements specified in Sub-items (i) through (v) of this Item.
- (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 the following minimum design criteria:
- (a) **TREATMENT REQUIREMENTS.** SCMs shall be designed, constructed, and maintained so that the project achieves either "runoff treatment" or "runoff volume match" as those terms are defined in Rule .1002 of this Section.
  - (b) **OFF-SITE STORMWATER.** Stormwater runoff from off-site areas and existing development shall not be required to be treated in the SCM. Runoff from off-site areas or existing development that is not bypassed shall be included in the sizing of on-site SCMs at its full built-out potential.
  - (c) **OFF-SITE SCM.** A project that controls runoff through an off-site SCM shall be allowed on a case-by-case basis as determined by the permitting authority if the off-site SCM meets the provisions of Rules .1050 through .1061 of this Section.
  - (d) **EXPANSION OR REPLACEMENT OF EXISTING DEVELOPMENT.** When new built-upon area is added to existing development or existing development is replaced with new built-upon area, only the area of net increase shall be subject to this Section.
  - (e) **MDC FOR SCMS.** SCMs shall meet the relevant MDC set forth in Rules .1050 through .1062 of this Section except in accordance with Item (6) of this Rule.
- (4) **VEGETATED SETBACKS.** Vegetated setbacks shall be required adjacent to waters as specified in the stormwater rules to which the project is subject pursuant to this Section, in addition to the following requirements applicable to all vegetated setbacks:
- (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 vegetation;
  - (c) Built-upon area that meets the requirements of G.S. 143-214.7(b2)(2) shall be allowed within the vegetated setback.
  - (d) Built-upon area that does not meet the requirements of G.S. 143-214.7(b2)(2) shall be allowed within a vegetated setback when it is not practical to locate the built-upon area elsewhere, the built-upon area within the vegetated setback is minimized, and channelizing runoff from the built-upon area is avoided. Built-upon area within the vegetated setback shall be limited to:
    - (i) Publicly-funded linear projects such as roads, greenways, and sidewalks;
    - (ii) Water Dependent Structures; and
    - (iii) Minimal footprint uses such as poles, signs, utility appurtenances, and security lights.
  - (e) Stormwater that has not been treated in an SCM shall not be discharged through a vegetated setback; instead it shall be released at the edge of the vegetated setback and allowed to flow through the setback as dispersed flow.
  - (f) Artificial streambank and shoreline stabilization shall not be subject to the requirements of this Item.
- (5) **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.
- (6) **VARIATIONS FROM THIS SECTION.** The permitting authority shall have the option to approve projects that do not comply with all of the provisions of this Section on a case-by-case basis as follows:
- (a) If the variation pertains to an SCM design that does not meet all of the MDC, then the applicant shall provide technical justification based on engineering calculations and the

- results of research studies showing that the proposed design provides equal or better stormwater control and equal or better protection of waters of the State than the requirements of this Section and that it shall function in perpetuity. The permitting authority shall have the option to require compliance with the MDC in the event that the alternative SCM design fails;
- (b) If the variation pertains to other aspects of the project, then the applicant shall demonstrate that the project provides equal or better stormwater control and equal or better protection of waters of the State than the requirements of this Section; and
  - (c) Variations from this Section shall not be allowed if the project is being permitted under the fast-track process.
- (7) **DEED RESTRICTIONS AND PROTECTIVE COVENANTS.** The permittee shall record deed restrictions and protective covenants prior to the issuance of a certificate of occupancy to ensure that projects will be maintained in perpetuity consistent with the plans and specifications approved by the permitting authority. For projects owned by public entities, the permittee shall have the option to incorporate specific restrictions and conditions into a facility management plan or another instrument in lieu of deed restrictions and protective covenants.
- (8) **COMPLIANCE WITH OTHER REGULATORY PROGRAMS.** Project designs shall comply with all other applicable requirements pursuant to G.S. 143-214.1, G.S. 143-214.5, G.S. 143-214.7, and G.S. 143-215.3(a)(1).

*History Note: Authority G.S. 143-214.1; 143-214.7; 143-215.1(d); 143-215.3(a)(1); S.L. 2008-198; Eff. January 1, 1988; Amended Eff. December 1, 1995; September 1, 1995; Readopted Eff. January 1, 2017.*