
Sec. 5.5 Water recharge regulations.

Sec. 5.5.1 Purpose.

The purpose of this section shall be to establish standards to help assure ground water that is withdrawn by wells and other means is replenished. This procedure is part of the application and review process for obtaining a building permit. Typically, water recharge occurs as a result of rainwater or snowmelt soaking into the ground (water infiltration). How much water infiltrates depends on vegetation cover, slope, soil composition, depth to the water table, the presence or absence of confining beds and other factors. Recharge is promoted by natural vegetation cover, flat topography, permeable soils, a deep-water table and the absence of confining beds (groundwater beds that are saturated). The steep topography of much of the County creates a natural challenge for water infiltration and ground water recharge. Development activities create impervious surfaces that reduce the amount of water that enters the ground water system. In order to maintain the viability of ground water supplies, including wells, and to lessen the impact of surface runoff, reasonable limitations can be placed on the amount of impervious surface on lots and parcels developed for residential and other purposes. Promoting and/or providing incentives for the use of stormwater best management practices (BMPs), such as rain gardens, that promote the infiltration of stormwater into the soil also can promote water recharge. The following standards are meant to preserve the capacity for water recharge on properties that are developed for residential, commercial, and other uses.

Sec. 5.5.2 Jurisdiction.

The provisions of this section shall apply to all unincorporated areas of Jackson County, North Carolina. The provisions identified herein shall apply to new commercial, industrial, and multi-family development and to major subdivisions.

Sec. 5.5.3 Exemptions.

- (a) The provisions of this section shall not apply to:
- (i) Agricultural uses.
 - (ii) Single family residential construction.
 - (iii) Minor subdivisions (eight or fewer lots).
 - (iv) Development on the campus of Western Carolina University.

Sec. 5.5.4 Limitations on Impervious Surfaces.

~~(a) (a)~~ In an effort to promote the absorption of stormwater into the earth's surface and thence into the water table, the following limitations on impervious surfaces are hereby established:

- 1) maximum impervious surface on a tract of land is 30% without providing onsite stormwater mitigation.
- 2) For projects with less than 30% impervious surface are required to follow the design guidelines given in the most recent edition of the Stormwater Design Manual published by the North Carolina Department of Environmental Quality.

~~Table 5.2: Maximum Allowable Impervious Surface~~

Land Use	Lot Size	Maximum Allowable Impervious Surface
Multi-family residential	<1.0 acres	75%
Multi-family residential	>1.0 acres	70%
Industrial	All-sizes	70%
Commercial	All-sizes	70%
Open-space	All-sizes	12% (for roads, parking areas)

- (i) Pervious areas shall be dispersed throughout a subdivision or development rather than being concentrated in one area.
- (ii) The impervious surface standards identified in Table 5.2: Maximum Allowable Impervious Surface shall be applied on a per lot basis for subdivisions, not on the entire subdivision tract level.
- (iii) In large multi-family, commercial, and industrial developments of more than ten acres, no more than 25 percent of the pervious surfaces shall be located in any one area.
- (iv) On properties subject to Section 5.7 Mountain and Hillside Development, the provisions of that section limiting impervious surfaces shall apply.

Sec. 5.5.5 Exceeding Limitations on Impervious Surfaces- New Developments-

(a) —

(a) Tracts of land that exceed 30% impervious surface must comply with the following stormwater requirements:

(1) New development:

For new development the requirements for a stormwater management plan set forth in subsections c and d of this section shall apply.

(2) Existing development:

a. For existing development where the amount of impervious surface is being expanded but does not exceed 30% of the total site, a stormwater management system concept plan is required that follows the design guidelines given in the most recent edition of the Stormwater Design Manual published by the North Carolina Department of Environmental Quality. This concept plan only applies to the areas of expansion.

b. For existing development where the impervious surface is being expanded and the total amount is over 30%, the requirements for a stormwater management plan set forth in subsections c and d of this section shall apply to the areas of expansion.

(3) Stormwater management measures required.

a. For projects meeting the thresholds identified in (a)(ii) and (b)(ii) above, the property owner and/or developer shall provide a stormwater management plan that accommodates the stormwater run-off generated by a 10-year, 24-hour rain event or, if the property is located within a designated Protected Watershed Area, the 25-year storm. Stormwater measures shall be designed to remove, at a minimum, 85 percent of the Total Suspended Solids (TSS) from the first inch of rainfall of any rain event. Stormwater measures shall have a drawdown of at least 48 hours, but not more than 120 hours.

b. Stormwater measures shall be designed by an appropriately qualified engineer, landscape architect or other appropriately qualified professional, and shall be constructed and maintained

in accordance with commonly accepted best practices. Innovative designs that utilize "low impact" and non-structural control and treatment measures are encouraged.

c. Stormwater measures may be located off-site provided such measures are located within a parcel of land under the same ownership as the affected property or within a common area under the management of a property owners' association or similar entity.

d. Projects that exceed 40% imperviousness shall comply with Section 5.5.6, Required Natural Stormwater Treatment Designs.

(b) Stormwater management plan requirements. The stormwater management plan shall show:

- (1) The existing site topography and proposed site drainage improvements in sufficient detail to facilitate plan review and construction. The plan drawings shall be presented at a scale no larger than one inch = 50 feet.
- (2) Engineering drawings showing grading plan, details of piping, drainage structures, swales, and channels tying into a network of pre-existing manmade or natural channels.
- (3) Written project specifications governing work performance and materials.
- (4) Computations and assumptions sufficient to support the design of piping, drainage structures, retention/detention ponds, and permanent erosion control measures.
- (5) Location of proposed structural stormwater controls;
- (6) Low impact design elements;
- (7) Location of existing and proposed conveyance systems such as grass channels, swales, and storm drains;
- (8) Flow paths;
- (9) Location of floodplain/floodway limits;
- (10) Relationship of site to upstream and downstream properties and drainages;
- (11) Location of proposed stream channel modifications, such as bridge or culvert crossings;
- (12) Whatever other narrative statements are necessary to adequately describe the proposed site improvements.
- (13) Identify existing vegetation that will be preserved.

(c) Stormwater permit required. The Jackson County Planning Department shall review all stormwater plans required by this ordinance to ensure compliance therewith. In making this determination, the County shall use the Stormwater Best Management Practices Manual published by the North Carolina Department of Environment and Natural Resources or other commonly accepted information and engineering data. The County will review each complete plan submitted to them and within 30 calendar days of receipt thereof will notify the person submitting the plan that it has been approved, approved with modifications, approved with performance reservations, or disapproved. Incomplete plans shall be returned for completion. The 30 day review period will not begin until all required items are submitted. The Planning Department shall have five business days to check the plans for completeness. Failure to approve, approve with modifications, or disapprove a complete Stormwater Management System Concept Plan within 30 calendar days of receipt shall be deemed approval. Disapproval of a plan must specifically state, in writing, the reasons for disapproval. If, following commencement of a land-disturbing activity pursuant to an approved plan, the County determines that the plan is inadequate to meet the requirements of this ordinance, the County may require any revision of the plan that is necessary to comply with this ordinance. Failure to approve, approve

with modifications, or disapprove a revised Stormwater Management System Concept Plan within 15 calendar days of receipt shall be deemed approval of the plan. The County shall establish an expiration date of three years for Stormwater Management System Concept Plans approved under this ordinance. Fees as established by the Jackson County Board of Commissioners shall be due and payable upon submission of the application. If a person initiates land-disturbing activity which would have required a permit without obtaining such a permit, the Planning Department is authorized to double the regular permit fee.

(d) *Engineer's Certification.* For all developments subject to these standards, upon completion of a project, and before final project approval or a certificate of occupancy may be granted, the applicant's engineer shall certify that the completed project has been built in accordance with the approved stormwater management plans and designs.

(e) *Inspection and maintenance of measures.*

(1) All stormwater improvements must be maintained so they will continue to serve their intended functions. If the stormwater improvements are to be turned over to a property owners association or a property owner, the developer must maintain stormwater improvements until accepted by a property owners association or property owner. The developer must disclose which party will be responsible for continued maintenance on the record plat and on the stormwater management plan. The developer will be responsible for the installation, operation, and maintenance of the stormwater controls until ownership is conveyed. The responsibility and agreement for operation and maintenance for the stormwater system is transferred with title, as each property is conveyed.

(2) The County shall have the right to demand an inspection report at any time should there be reasonable belief that any stormwater structure or feature is constructed or being maintained in violation of this ordinance. Such inspection report shall be prepared by a registered North Carolina professional engineer, surveyor, or landscape architect performing services only in their area of competence. The report shall contain the following:

a. The name and address of the land owner.

b. The recorded book and page number of the lot of each stormwater control.

c. A statement that an inspection was made of all stormwater controls and features.

d. The date the inspection was made.

e. A statement that all inspected controls and features are performing properly and are in compliance with the terms and conditions of the approved maintenance agreement required by this ordinance.

f. The signature and seal of the engineer, surveyor, or landscape architect.

(3) Should the stormwater inspection reveal substantial maintenance or repair recommendations, it shall be the owner's responsibility to retain a registered professional engineer or landscape architect competent in the area of stormwater management to develop plans and specifications for such repairs within 30 days from finding that substantial maintenance or repair recommendations are necessary. Maintenance or repair work must commence within 60 days, and be completed within a reasonable amount of time, from the finding that substantial maintenance or repair recommendations are necessary. The owner of each stormwater measure, whether structural or non-structural in design, shall maintain it so as not to create or permit a nuisance condition.

(f) All Buildings and parking areas must be setback 25 ft. from any perineal stream.

(g) Removal of vegetation on property with a slope of 35 percent or more is regulated Section 5.5.

(h) Standards for preservation of vegetation on property with a slope of 35 percent or more can be found in

Sections 5.8.4 and 5.8.6.

The amount of impervious surface on a lot may exceed that which is allowed by the Table 5.2: Maximum Allowable Impervious Surface, provided that stormwater retention measures that collect and retain for percolation the runoff from the impervious areas are installed.

- (b) ~~The permitted increase in impervious surfaces shall be on a direct ratio basis. For example, if ten percent of the total stormwater generated by the development's impervious surfaces is retained, a ten percent increase in the permitted impervious surfaces shall be allowed; if 60 percent of the total stormwater generated by the development's impervious surfaces is retained, a 60 percent increase in the permitted impervious surfaces shall be permitted.~~
- (c) ~~Stormwater retention systems shall be designed by a registered professional engineer or landscape architect and their installation and construction certified by the designer.~~
- (d) ~~Standing water and installations that allow for water to collect and stagnate so as to provide a suitable habitat for mosquitoes should be prohibited.~~
- (e) ~~Development plans meeting these standards shall be approved for compliance with the impervious surface standards.~~

Sec. 5.5.6 ~~Granting of Modifications. Required Natural Stormwater Treatment Designs~~

- (a) ~~{a} Developments that exceed 40% impervious surfaces must include a minimum of two of the following stormwater treatment measures that will treat 50% of the TSS requirements found in Section 5.5.5 (a)(3):~~
 - i. ~~Bio-retention areas~~
 - ii. ~~Rain gardens~~
 - iii. ~~Green roof~~
 - iv. ~~Permeable pavement~~
 - v. ~~Suspended Pavement Systems~~
 - vi. ~~Cistern~~
- (b) ~~County Planning Director may approve additional treatment designs not listed above provided they are prepared by a design professional licensed in the State of North Carolina~~

The County Planning Board is authorized to approve a modification in those cases in which a development cannot meet the limitations on impervious surfaces identified above.

- (b) ~~The developer/property owner shall submit the application for a modification at least 30 days prior to the meeting of the Planning Board at which it is to be considered.~~
- (c) ~~The application shall state the reason(s) the water recharge standards cannot be met and shall describe any alternative proposed for the property. In applying for the modification, the applicant must identify physical characteristics of the property that preclude compliance with the standards and/or identify proposed systems for ensuring water recharge that meet or exceed the goals of this Section.~~

Sec. 5.5.7 ~~Preservation of Vegetation.~~

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- ~~(a) Preserving existing vegetation on a site can enhance the water recharge capacity of the property.~~
 - ~~(b) Grass, shrubs, and trees all contribute to the ability of a property to provide water recharge.~~
 - ~~(c) While the wholesale removal of existing trees and shrubs is discouraged, some vegetation removal and pruning is recommended to create a "firewise" home.~~
 - ~~(d) Existing vegetation within 30 feet of the home should be pruned and/or thinned to reduce the amount of fuel available for a fire.~~
 - ~~(e) All dead plant material, including leaves, should be removed in this 30-foot zone. Plants that can contain resins and oils that burn readily (ornamental junipers, hollies, and young pines) should not be planted in this area.~~
 - ~~(f) For more information regarding creating a "firewise" home, contact Firewise Communities at www.firewise.org.~~
 - ~~(g) Removal of vegetation on property with a slope of 30 percent or more is regulated Section 5.5.~~
 - ~~(h) Standards for preservation of vegetation on property with a slope of 30 percent or more can be found in of Sections 5.8.4 and 5.8.6.~~

Sec. 5.5.8 Variances

Variances may be requested per the process found in Section 3.