

**Sec. 44-434.****Watershed Protection District (WP-O).***Purpose:*

- ◆ *Surface waters of the state and County are a precious but delicate natural resource. They are life sustaining for humans, animals, and vegetation both directly and as a source of recharge for the underground aquifers. They provide an essential link in almost all natural processes, provide opportunities for recreation and refreshment, supply industrial needs for process and cooling water, generate power, and contribute immeasurably to scenic beauty.*
- ◆ *Most important, surface waters provide raw water for domestic consumption and fire protection to scores of communities in the state, including several in the County and its surrounding jurisdictions.*
- ◆ *For the protection of the public health, safety, and general welfare, it is essential that the integrity of these surface waters be protected from pollution, so that the well-being of present and future residents and visitors to the County and surrounding jurisdictions be assured, the costs of furnishing potable water be minimized, and the quality and quantity of surface water be protected.*
- ◆ *The intent of the watershed protection district (WP-O) is to provide regulations, which, will limit the exposure of watersheds, under the jurisdiction of the County and used as sources of supply for public water systems, to pollution. The sources of such pollution include leachate from septic tank nitrification fields; stormwater runoff; accidental spillage from residential, commercial and industrial operations.*
- ◆ *These occurrences can contribute biological contamination, turbidity from soil erosion and sedimentation, nutrient enhancement, and heavy metal pollution, all of which endanger the water supplies of communities dependent on these watersheds for life-giving and life-sustaining water.*
- ◆ *This section is enacted pursuant to NCGS 153A-121 and NCGS 143-211 - 143-215.74I.*

**Sec. 44-434.01.****Boundaries.**

- (a) The boundaries of the watershed protection district (WP-O) encompassing the watersheds within the County's jurisdiction are shown as overlay districts on the official zoning map and are adopted as part of this Chapter. Where watershed boundaries follow topographic boundaries and the official zoning map does not accurately represent the actual topographic boundary, a surveyed plat prepared by a registered land surveyor may be submitted to the County as evidence that one or more properties along these boundaries does not lie within the watershed area.
- (b) The watershed protection overlay district shall, as appropriate, impose greater restrictions, require higher development standards, prohibit certain uses and require additional approvals as stated in this Section.

**Sec. 44-434.02.****Existing development and exceptions to applicability.**

- (a) Existing development, as defined in this Section, is exempt from the requirements of this district. The term existing development is defined as those projects that are built or those projects that at a minimum have established a vested right under

state law as of the effective date of this Section (January 1, 1994) based on at least one of the following criteria:

- (1) Having expended substantial resources (time, labor, money) based on a good faith reliance upon having received a valid local government approval to proceed with the project;
  - (2) Having an outstanding valid building permit as authorized by NCGS 153A-344.1; or
  - (3) Having an approved site-specific or phased development plan as authorized by NCGS 153A-344.1.
- (b) A preexisting lot of record owned prior to the effective date of the County's Watershed Protection Ordinance (January 1, 1994), regardless of whether a vested right has been established, may be developed for single-family residential purposes without being subject to the restrictions of this Section, provided the property is zoned for this use and it meets the underlying zoning requirements.
- (c) Expansions to structures, other than single-family, classified as existing development must meet the requirements of this Section; however, the built-upon area of the existing development is not required to be included in the density calculations.
- (d) Any existing nonresidential or multi-family (3 or more dwelling units) structure or built-upon area not in conformance with the density or built-upon restrictions of this Section that has been damaged or removed may be repaired and/or reconstructed provided it meets the following conditions:
- (1) The repair or reconstruction is in compliance with Article VII, Nonconformities.
  - (2) Repair or reconstruction is initiated within 12 months and completed within 2 years of such damage; and
  - (3) The total amount of built-upon area may be increased according to the built-upon restrictions as allowed for existing development.
- (e) Uses existing on January 1, 1994, but which would not be permitted to be established in the watershed protection district in which they are located, may continue subject to Article 7, Nonconformities, except as follows:
- (1) When such nonconforming use of land has been changed to an allowed use, it cannot revert to any prohibited use.
  - (2) Expansions may be allowed subject to the built-upon restrictions as allowed for existing development.
- (f) If the requirements of this Section conflict with other portions of this Chapter, the more restrictive of each particular item apply.

**Sec. 44-434.03. Definitions.**

The definitions found in this Section apply specifically to this Section and are intended to supplement the definitions found in the Appendix. The following words, terms and phrases, when used in this Section, shall have the meanings ascribed to them in this Section, except where the context clearly indicates a different meaning:

*Balance of watershed (BW)* - the land area outside of the critical area which contributes surface drainage to a WS-II or WS-III watershed.

*Best management practice (BMP)* - a structural or nonstructural management-based practice used singularly or in combination to reduce non-point-source inputs to receiving waters in order to achieve water quality protection goals.

*Buffer (watershed only)* - an area of natural or planted vegetation through which stormwater runoff flows in a diffuse manner so that the runoff does not become channelized and which provides for infiltration of the runoff and filtering of pollutants. The buffer is measured landward from the normal pool elevation of impounded structures and from the bank of each side of streams or rivers.

*Built-upon area* includes that portion of a development project that is covered by impervious or partially impervious cover, including building, pavement, gravel areas such as roads, parking lots, paths, recreation facilities such as tennis courts, and the like. Note: wooden slatted decks and the water area of a swimming pool are considered pervious.

*Cluster development* - the grouping of buildings in order to conserve land resources and provide for innovation in the design of the project including minimizing stormwater runoff impacts. This term includes nonresidential development as well as single-family residential subdivisions and multi-family developments. For purposes of this Chapter, planned unit developments and mixed use developments are considered cluster developments.

*Existing lot of record* - a lot which is part of a subdivision, a plat of which has been recorded in the office of the register of deeds prior to January 1, 1994, in accordance with the subdivision regulations in effect at the time of recordation, or a lot described by metes and bounds, the description of which has been so recorded prior to July 31, 1982.

*Landfill (discharging)* - a facility with liners, monitoring equipment and other measures to detect and/or prevent leachate from entering the environment and in which the leachate is treated on site and discharged to a receiving stream.

*Nonresidential development* - all development other than residential development, agriculture and forestry.

*Protected area (PA)* - the area adjoining and upstream of the critical area of WS-IV watersheds. The boundaries of the protected area are defined as within 5 miles upstream of and draining to the normal pool elevation of the reservoir or to the ridgeline of the watershed,

whichever comes first; or within 10 miles of and draining to a water intake located in a stream or river or to the ridgeline of the watershed, whichever comes first.

*Residential development* - buildings for residence, such as attached and detached single-family dwellings, apartment complexes, condominiums, townhouses, cottages, and their associated outbuildings, such as garages, storage buildings, gazebos.

*Single-family residential* - any development where no building contains more than one dwelling unit, every dwelling unit is on a separate lot and where no lot contains more than one dwelling unit except for approved accessory dwelling units.

*Toxic substance* - any substance or combination of substances, including disease-causing agents, which, after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions including malfunctions or suppression in reproduction or growth, or physical deformities in such organisms or their offspring or cause other adverse health effects.

*Variance, major*, - a variance that results in any one or more of the following:

- (a) The relaxation, by a factor of more than 10%, of any management requirement under the low density option; or
- (b) The relaxation, by a factor of more than 5%, of the buffer, density or built-upon area requirement under the high-density option; or
- (c) Any variation in the design, maintenance or operation requirements of a wet detention pond or other approved stormwater management system.

*Variance, minor*, - a variance that does not qualify as a major variance.

*Water-dependent structure* - any structure for which the use requires access to or proximity to or situated within surface waters to fulfill its basic purpose, such as boat ramps, boathouses, docks and bulkheads. Ancillary facilities, such as restaurants, outlets for boat supplies, parking lots and commercial boat storage areas, are not water-dependent structures.

*Water quality critical area (WQCA)* - the area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed. The critical area is defined as extending either one-half mile from the normal pool elevation of the reservoir in which the intake is located or the ridgeline of the watershed, whichever comes first; or one-half mile upstream from the intake located directly in the stream or river (run of the river) or the ridgeline of the watershed, whichever comes first.

*Watershed* - the entire land area contributing surface drainage to a specific point, such as the water supply intake.

**Sec. 44-434.04. WS-II watershed area--water quality critical area (WS-II-WQCA).**

In order to maintain a low intensity land use development pattern, single-family residential uses are allowed on a lot with a minimum area of 80,000 square feet. All other residential and nonresidential development are allowed at a maximum 6% built-upon area. Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable. New residuals application sites and landfills are specifically prohibited.

- (a) Density and built-upon limits.
  - (1) For single-family residential development, the minimum lot area shall not be less than 80,000 square feet, except when approved as a cluster subdivision according to Sec. 44-544.
  - (2) All other residential and nonresidential development cannot exceed 6% built-upon area on a project-by-project basis. For the purpose of calculating the built-upon area, total project area includes acreage in the tract on which the project is to be developed.
- (b) *Uses allowed.* The following uses are permitted:
  - (1) Agriculture, subject to the provisions of the Food Security Act of 1985 and the Food, Agriculture, Conservation and Trade Act of 1990 and all rules and regulations of the Soil & Water Conservation Commission.
  - (2) Forestry, subject to the provisions of the Forest Practices Guideline Related to Water Quality (15A NCAC 11.0101-.0209). The division of forest resources is the designated management agency responsible for implementing this Subsection.
  - (3) Residential development.
  - (4) Nonresidential development, excluding landfills and sites for land application of residuals or petroleum-contaminated soils.

**Sec. 44-434.05. WS-II watershed area--balance of watershed (WS-II-BW).**

In order to maintain a low intensity land use development pattern, single-family residential uses are allowed on a lot with a minimum area of 40,000 square feet. All other residential and nonresidential development are allowed at a maximum of 12% built-upon area; in addition, nonresidential uses may occupy 10% of the balance of watershed area outside the water quality critical area, with a 70% built-upon area when approved as a 10/70 bonus permit according to Sec. 44-434.10. Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable.

- (a) *Density and built-upon limits.* Density and built-upon limits are as follows:
  - (1) For single-family residential development, the minimum lot area is at least 40,000 square feet, except when approved as a cluster subdivision according to Sec. 44-544.

- (2) All other residential and nonresidential development cannot exceed 12% built-upon area on a project-by-project basis, except that up to 10% of the balance of watershed may be developed for nonresidential uses to 70% built-upon area on a project-by-project basis subject to approval of a 10/70 bonus permit according to Sec. 44-434.10. For the purposes of calculating the built-upon area, total project area includes acreage in the tract on which the project is to be developed.
- (b) *Uses allowed.* The following uses are permitted:
- (1) Agriculture, subject to the provisions of the Food Security Act of 1985 and the Food, Agricultural, Conservation and Trade Act of 1990;
  - (2) Forestry, subject to the provisions of the Forest Practices Guidelines Related to Water Quality (15A NCAC 11.0101-.0209). The division of forest resources is the designated management agency responsible for implementing this subsection;
  - (3) Residential development; and
  - (4) Nonresidential development excluding discharging landfills.

**Sec. 44-434.06. WS-III watershed area--water quality critical area (WS-III-WQCA).**

In order to maintain a low to moderate land use intensity pattern, single-family residential uses are allowed on a lot with a minimum area of 40,000 square feet. All other residential and nonresidential development is permitted at a maximum of 12% built-upon area. Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable. New residuals application sites and landfills are specifically prohibited.

- (a) *Density and built-upon limits.* Density and built-upon limits are as follows:
- (1) For single-family residential development, the minimum lot area is at least 40,000 square feet, except when approved as a cluster subdivision according to Sec. 44-544.
  - (2) All other residential and nonresidential development cannot exceed 12% built-upon area on a project-by-project basis. For the purpose of calculating the built-upon area, total project area includes acreage in the tract on which the project is to be developed.
- (b) *Uses allowed.* The following uses are permitted:
- (1) Agriculture, subject to the provisions of the Food Security Act of 1985 and the Food, Agriculture, Conservation and Trade Act of 1990 and all rules and regulations of the Soil & Water Conservation Commission.
  - (2) Forestry, subject to the provisions of the Forest Practices Guideline Related to Water Quality (15A NCAC 11.0101-.0209). The division of forest resources is the designated management agency responsible for implementing this Subsection.
  - (3) Residential development.

- (4) Nonresidential development, excluding landfills and sites for land application of residuals or petroleum-contaminated soils.

**Sec. 44-434.07. WS-III watershed area--balance of watershed (WS-III-BW).**

In order to maintain a low to moderate land use intensity pattern, single-family residential uses are allowed on lots with a minimum area of 20,000 square feet. All other residential and nonresidential development are allowed a maximum of 24% built-upon area. In addition, nonresidential uses may occupy 10% of the balance of watershed area outside the water quality critical area, with a 70%-built-upon area when approved as a 10/70 bonus permit according Sec. 44-434.10. Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable.

(a) *Density and built-upon limits.* Density and built-upon limits are as follows:

- (1) For single-family residential development, the minimum lot area must be at least 20,000 square feet, except when approved as a cluster subdivision according to Sec. 44-544.
- (2) All other residential and nonresidential development cannot exceed 24% built-upon area on a project-by-project basis, except that up to 10% of the balance of watershed area may be developed for nonresidential uses to 70% built-upon area on a project-by-project basis subject to approval of a 10/70 bonus permit according to Sec. 44-434.10. For the purposes of calculating the built-upon area, total project area must include acreage in the tract on which the project is to be developed.

(b) *Uses permitted.* The following uses are permitted:

- (1) Agriculture, subject to the provisions of the Food Security Act of 1985 and the Food, Agricultural, Conservation and Trade Act of 1990.
- (2) Forestry, subject to the provisions of the Forest Practices Guidelines Related to Water Quality (15A NCAC 11.0101-.0209). The division of forest resources is the designated management agency responsible for implementing this Subsection.
- (3) Residential development.
- (4) Nonresidential development excluding discharging landfills.

**Sec. 44-434.08. WS-IV watershed area--water quality critical area (WS-IV-WQCA).**

Only new development activities that require an erosion/sedimentation control plan under state law are required to meet the requirements of this Section when located in the WS-IV watershed. Written verification of project exemption must be submitted from the entity responsible for enforcement of the erosion/sedimentation program. In order to address a moderate to high land use intensity pattern, single-family residential uses are allowed on a lot with a minimum area of 20,000 square feet. All other residential and nonresidential development is allowed 24% built-upon area. Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable. New residuals application sites and landfills

are specifically prohibited.

(a) *Density and built-upon limits.* Density and built-upon limits are as follows:

- (1) For single-family residential development, the minimum lot area must be at least 20,000 square feet, except when approved as a cluster subdivision according to Sec. 44-544.
- (2) All other residential and nonresidential development cannot exceed 24% built-upon area on a project-by-project basis. For the purpose of calculating the built-upon area, total project area includes acreage in the tract on which the project is to be developed.

(b) *Uses permitted.* The following uses are permitted:

- (1) Agriculture, subject to the provisions of the Food Security Act of 1985 and the Food, Agriculture, Conservation and Trade Act of 1990 and all rules and regulations of the Soil & Water Conservation Commission.
- (2) Forestry, subject to the provisions of the Forest Practices Guideline Related to Water Quality (15A NCAC 11.0101-.0209). The division of forest resources is the designated management agency responsible for implementing this Subsection.
- (3) Residential development.
- (4) Nonresidential development, excluding landfills and sites for land application of residuals or petroleum-contaminated soils.

**Sec. 44-434.09. WS-IV watershed area--protected area (WS-W-PA).**

Only new development activities that require an erosion/sedimentation control plan under state law are required to meet the requirements of this Section when located in a WS-IV watershed. Written verification of project exemption must be submitted from the entity responsible for enforcement of the erosion/sedimentation program. In order to address a moderate to high land use intensity pattern, single-family residential uses are allowed on a lot with a minimum area of 20,000 square feet without public water or sewer or 15,000 square feet with public water or sewer where a curb and gutter street system is not installed. All other residential and nonresidential development are allowed at a maximum of 24% built-upon area if a curb and gutter system is installed or 36% built-upon area if a curb and gutter system is not installed. Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable.

(a) *Density and built-upon limits.* Density and built-upon limits are as follows:

- (1) For single-family residential development, the minimum lot area must be at least 20,000 square feet without public water or sewer or 15,000 square feet with public water or sewer where a curb and gutter street system is not installed. An exception to these requirements is when a cluster subdivision is approved according to Sec. 44-544.

- (2) All other residential and nonresidential development cannot exceed 24% built-upon area if a curb and gutter system is installed or 36% built-upon area if a curb and gutter system is not installed. For the purpose of calculating the built-upon area, total project area includes acreage in the tract on which the project is to be developed.
- (b) *Uses permitted.* The following uses are permitted:
- (1) Agriculture, subject to the provisions of the Food Security Act of 1985 and the Food, Agricultural, Conservation and Trade Act of 1990.
  - (2) Forestry, subject to the provisions of the Forest Practices Guidelines Related to Water Quality (15A NCAC 11.0101-.0209). The division of forest resources is the designated management agency responsible for implementing this Subsection.
  - (3) Residential development.
  - (4) Nonresidential development.

**Sec. 44-434.10. 10/70 bonus permit.**

- (a) In addition to the nonresidential built-upon restrictions for the balance of WS-II and WS-III watersheds as stated in Sections 44-434.05 and 44-434.07, nonresidential uses may occupy no more than 10% of the balance of each WS-II and WS-III watershed outside the water quality critical area, with a maximum 70% built-upon area when approved as a 10/70 bonus permit. The 10/70 bonus permit must be considered as a special use permit that must be reviewed by the board of adjustment and is subject to all rules and procedures as established in Article III. Requests for a 10/70 bonus permit will be considered in order of receipt of completed applications. A 10/70 bonus permit is valid for 2 years, and if the development has not begun within that time period the permit shall expire. Reapplication cannot be made for a period of 12 months following the date the permit expired.
- (b) In reviewing an application for a 10/70 bonus permit, the board of adjustment shall make the findings of fact as stated in Sec. 44-328(f) . In addition, the board of adjustment shall consider whether the property can be developed as proposed according to any or all of the following pertinent factors:
- (1) Whether the proposal is in conformance with the County's current land use plan.
  - (2) Whether the development is in coordination with the County's thoroughfare plan and urban area transportation plan.
  - (3) The feasibility of the proposed development based on site-specific factors, such as but not limited to soil type; topography; distance to public utilities, such as water, sewer and gas lines; and road access.
  - (4) Projects must minimize built-upon surface area and direct stormwater runoff away from surface waters. Stormwater runoff from the

development shall be transported by vegetated conveyances to the maximum extent practicable.

- (c) Where developments are approved under a 10/70 bonus permit, a 100-foot wide vegetative buffer is required for new development along all perennial waters indicated on the most recent version of USGS 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies.

**Sec. 44-434.11. Watershed cluster development.**

Clustering of development is permitted in all watershed areas under the following conditions:

- (a) Minimum lot sizes are not applicable to single-family watershed cluster development projects; however, the overall density of the project must meet the associated density as required in Sections 44-434.04 – 44-434-09.
- (b) Built-upon area of projects shall not exceed that allowed for the applicable critical area or protected area/balance of the watershed as required in Sections 44-434.04 – 44-434-09.
- (c) All built-upon areas shall be designed and located to minimize stormwater runoff impact to the receiving waters and minimize concentrated stormwater flow.
- (d) The remainder of the tract must remain in a vegetated or natural state. The title to the open space must be conveyed to an incorporated homeowners' association for management, to a local government for preservation as a park or open space, or to a conservation organization for preservation in a permanent easement.

**Sec. 44-434.12. Buffer area required.**

- (a) In the watershed protection overlay (WP-O), a minimum 30-foot wide vegetative buffer is required for all new development along all perennial waters indicated on the most recent version of USGS 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies. Developments approved under the high-density option, including the 10/70 bonus permit, are required to maintain a 100-foot wide vegetative buffer.
- (b) No new development which requires a zoning authorization permit is allowed in the buffer except for water-dependent structures and public projects, such as road crossings, railroad rights-of-way and the like, where no practical alternative exists. These activities should minimize built-upon surface area, direct runoff away from the surface waters and maximize the utilization of stormwater best management practices. Desirable artificial streambank or shoreline stabilization is permitted.

**Sec. 44-434.13. Administration.**

- (a) Administration of this Section shall be as provided under Article II of this Chapter. Zoning authorization permits shall be issued for development in the watershed protection overlay (WP-O) as prescribed in Article III of this Chapter.

In addition to the general information required for a zoning authorization permit, the following must be submitted on detailed site plans, as applicable:

- (1) The square footage and percent of built-upon area for nonresidential and residential development excluding single-family. The area required to remain as nondevelopable land must be noted on the detailed site plan.
  - (2) The location of all perennial streams and natural drainage areas on the property.
  - (3) The location and landscaping proposed for all required buffer areas.
- (b) The County may make amendments to this Section as provided by this Chapter. Under no circumstances shall the County adopt such amendments that would cause this Section to violate the watershed protection rules as adopted by the state environmental management commission. The planning director shall keep records of all amendments to the water supply watershed regulations and shall provide copies of all amendments, upon adoption, to the state division of water quality.
- (c) The planning director shall keep a record of variances to the local watershed protection district. This record shall be submitted, for the calendar year, to the state division of water quality section on or before January 1st of the following year and shall provide a description of each project receiving a variance and the reasons for granting the variance.
- (d) The planning director shall keep records of the County's utilization of the provision that a maximum of 10% of the noncritical area of WS-II-BW and WS-III-BW watersheds may be developed with nonresidential development to a maximum of 70% built-upon surface area. Records for each watershed shall include the total acres of noncritical watershed area, total acres eligible to be developed under this option, total acres approved for this development option and individual file records for each development that is approved in these areas.

**Sec. 44-434.14. Variances.**

- (a) The board of adjustment may authorize, in specific cases, minor variances from the terms of this Section that will not be contrary to the public interest. An application for a variance must conform with Sec. 44-329. In addition, the County shall notify and allow 2 weeks for response from all other local governments having jurisdiction in the designated watershed and the entity using the water supply for consumption where the variance is being considered. In granting of a variance the board of adjustment shall make findings as required in Sec. 44-329(f).
- (b) If an application calls for the granting of a major variance, and if the board of adjustment decides in favor of granting the variance, the board shall prepare a preliminary record of the hearing within 30 days
- (1) The preliminary record of the hearing shall include the following:
    - a. The variance application;

- b. The hearing notices;
  - c. The evidence presented;
  - d. Motions, offers of proof, objections to evidence and rulings on them;
  - e. Proposed findings and exceptions; and
  - f. The proposed decision, including all conditions proposed to be added to the permit.
- (2) The preliminary record shall be sent to the environmental management commission for its review as follows:
- a. If the commission concludes from the preliminary record that the variance qualifies as a major variance and that the property owner can secure no reasonable return from nor make any practical use of the property unless the proposed variance is granted and will not result in a serious threat to the water supply, the commission shall approve the variance as proposed or approve the proposed variance with conditions and stipulations. The commission shall prepare a commission decision and send it to the board of adjustment. If the board of adjustment approves the variance as proposed, the board shall prepare a final decision granting the proposed variance. If the commission approves the variance with conditions and stipulations, the board shall prepare a final decision, including such conditions and stipulations, granting the proposed variance.
  - b. If the commission concludes from the preliminary record that the variance qualifies as a major variance and that the property owner can secure a reasonable return from or make a practical use of the property without the variance or the variance, if granted, will result in a serious threat to the water supply, the commission shall deny approval of the variance as proposed. The commission shall prepare a commission decision and send it to the board of adjustment. The board shall prepare a final decision denying the variance as proposed.

**Sec. 44-434.15. High-density development.**

- (a) *Requirements.* Development projects which require a sedimentation and erosion control plan in a WS-IV watershed area, which are being developed as a planned development as defined in this Chapter, may propose to be developed under a high-density option as described in this Section and must meet the following requirements:
- (1) WS-IV watershed area-water quality critical area (WS-IV-WQCA). Where single-family residential development exceeds 2 dwelling units per acre on the overall project or other residential and nonresidential development exceeds 24% built-upon area, engineered stormwater

controls must be used to control runoff from the first one inch of rainfall, and development cannot exceed 50% built-upon area.

- (2) WS-IV watershed area--protected area (WS-IV-PA). Where single-family residential development exceeds 2 dwelling units per acre on the overall project, or 3 dwelling units per acre on the overall project with public water or sewer where a curb and gutter system is not installed, or other residential and nonresidential development exceeds 24% built-upon area with curb and gutter installed, or 36% built-upon area for projects without a curb and gutter street system, engineered stormwater controls must be used to control the first one inch of rainfall, and development cannot exceed 70% built-upon area.
  - (3) A minimum 100-foot wide buffer consistent with Sec. 44-434.12 must be provided for all developments using the high-density option.
- (b) *High-density development permits.* Development projects requesting to use the high-density development option must follow the application, review, public hearing and approval procedures as required by this Chapter for planned developments.
- (c) *Stormwater control structures.* Standards for stormwater control structures are as follows:
- (1) All stormwater control structures must be designed by a NC registered professional with qualifications appropriate for the type of system required. Registered professionals are defined as professional engineers, landscape architects to the extent that NCGS Chapter 89A allows, and land surveyors to the extent that the design represents incidental drainage within a subdivision, as provided by NCGS 89C-3(7).
  - (2) All stormwater controls must use wet detention ponds as a primary treatment system unless alternative stormwater management measures, as outlined in Subsection (3) below, are used. Wet detention ponds must be designed for specific pollutant removal according to modeling techniques approved by the state division of water quality. Specific requirements for these systems must be in accordance with the following design criteria:
    - a. Wet detention ponds must be designed to remove 85% of total suspended solids in the permanent pool and storage runoff from a one-inch rainfall from the site above the permanent pool.
    - b. The design runoff storage volume must be above the permanent pool.
    - c. The discharge rate from these systems following the one-inch rainfall design storm must be such that the runoff does not draw down to the permanent pool level in less than 2 days and that the pond is drawn down to permanent pool level within at least 5 days.
    - d. The mean permanent pool depth must be a minimum of 3 feet.

- e. The inlet structure must be designed to minimize turbulence using baffles or other appropriate design features.
  - f. Vegetative filters must be constructed for the overflow and discharge of all stormwater wet detention ponds and be at least 30 feet in length. The slope and width of the vegetative filter must be determined to provide a non-erosive velocity of flow through the filter for a 10-year, 24-hour storm within a 10-year, one-hour intensity with a slope of 5% or less. Vegetation in the filter shall be natural vegetation, grasses or artificially planted wetland vegetation appropriate for the site characteristics.
- (3) Alternative stormwater management systems, consisting of one treatment option or a combination of treatment options, may be used. The design criteria for approval shall be 85% average annual removal of total suspended solids. In addition, the discharge rate must meet one of the following criteria:
- a. The discharge rate following the one-inch design storm must be such that the runoff draws down to the pre-storm stage within 5 days, but not less than 2 days; or
  - b. The post development peak discharge rate must equal the predevelopment rate for the 1-year, 24-hour storm.
- (4) In addition to the vegetative filters required in Subsection 2(f) above, all land areas outside of the pond must be provided with a ground cover sufficient to restrain erosion within 15 working days after any land disturbance for flat lands and 21 calendar days after any land disturbance for slopes. Upon completion of the stormwater control structure, a permanent ground cover must be established and maintained as part of the maintenance agreement in Subsection (d)(3) below.
- (5) A description of the area containing the stormwater control structure must be prepared and filed consistent with Subsection (g)(2) below as a separate deed with the office of the register of deeds for the County along with any easements necessary for general access to the stormwater control structure. The deeded area must include the stormwater control structure, vegetative filters, all pipes and water control structures, berms, dikes, and sufficient area to perform inspections, maintenance, repairs and reconstruction.
- (6) 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 of built-upon area for one site, it cannot be used to compute the built-upon area for any other site or area.
- (d) *Posting of financial security.* Posting of financial security is required as follows:
- (1) All new stormwater control structures must be conditioned on the posting of adequate financial assurance for the purpose of construction, maintenance, repair or reconstruction necessary for adequate performance of the stormwater control structures.

- a. *Construction security.* Financial security to ensure that the required stormwater control structures are installed as required must be provided to the County so that, if these structures are not properly installed, the County may use the financial security to have such structures properly installed. The bond or other instrument must be in an amount equal to 1.25 times the total cost of constructing the stormwater control structure, as estimated by the applicant and approved by the board of commissioners. The total cost of the stormwater control structure must include the value of all materials such as piping and other structures; seeding and soil stabilization; design and engineering; and grading, excavation and fill. The costs cannot be prorated as part of a larger project, but are considered under the assumption of an independent mobilization.
  - b. *Maintenance security.* Financial security, to ensure that the required stormwater control structures are properly maintained, must be provided to the County so that, if these structures are not properly maintained, the County may use the financial security to have the structures properly maintained or repaired. Consistent with Subsection (2) below, the applicant must deposit with the County either cash or other instrument approved by the board of commissioners that is readily convertible into cash at face value. The cash or security must 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 10-year period, whichever is greater. The estimated cost of maintaining the stormwater control structure must be consistent with the approved operation and maintenance plan or manual provided by the developer under Subsection (e)(1) below. The amount shall be computed by estimating the maintenance cost for 25 years and multiplying this amount by 2/5ths or 0.4.
- (2) *Financial assurance.* Financial assurance must be in the form of a certified check, a no-contest irrevocable bank letter of credit or a performance and payment bond underwritten by a state-licensed corporate surety company. Except for a certified check, such sureties cannot be accepted unless the County attorney has reviewed them and rendered a written opinion that the interests of the County are fully protected. The certified check must be deposited with the County manager, as escrow agent, who shall deposit the check in an interest-bearing escrow account of the County. The no-contest irrevocable bank letter of credit must be from a banking corporation licensed to do business in the state and having an office in the County. The terms of the letter must include the absolute right of the County manager to withdraw funds from the bank forthwith upon the County manager's certifying to the bank that the terms and conditions of the performance guarantee have been breached.

- (3) *Maintenance agreement.* The applicant must enter into a binding operation and maintenance agreement between the County and all interested parties in the development. The agreement must 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 must be filed with the County register of deeds.
  - (4) *Default under the construction security.* Upon default of the applicant to complete the stormwater control structure as spelled out in the performance bond or other security, the County may obtain and use all or any portion of the funds necessary to complete the improvements based on an engineering estimate. The County shall return any funds not spent in completing the required improvements to the owning entity.
  - (5) *Default under the maintenance 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 County must obtain and use all or any portion of the cash security to make the necessary improvements based on an engineering estimate. The expenditure of funds must be made after exhausting all other remedies seeking the owning entity to comply with the terms and conditions of the operation and maintenance agreement. The County shall not return any of the deposited cash funds.
- (e) *Maintenance and upkeep.* Maintenance and upkeep must be provided as follows:
- (1) An operation and maintenance plan or manual must be provided by the developer for each stormwater control structure, 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 must clearly indicate the steps that will be taken for restoring a stormwater control structure to design specifications if a failure occurs.
  - (2) Landscaping and grounds management must be the responsibility of the owning entity. However, vegetation must 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.
  - (3) Except for general landscaping and grounds management, the owning entity must notify the planning department prior to any repair or reconstruction of the stormwater control structure. All improvements must 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, the planning director shall

inspect the completed improvements and inform the owning entity of any required additions, changes or modifications and of the time period to complete the improvements. The planning director may consult with an engineer or landscape architect, to the extent that NCGS Chapter 89A allows.

- (4) Amendments to the plans and specifications of the stormwater control structure and/or operation and maintenance plan or manual must be approved by the board of commissioners. Proposed changes must be prepared by a state-registered professional engineer or landscape architect, to the extent that NCGS Chapter 89A allows, and submitted to and reviewed by the planning director.
  - a. If the board of commissioners approves the proposed changes, the owning entity of the stormwater control structure must file sealed copies of the revisions with the planning department.
  - b. If the board of commissioners disapproves the changes, the proposal may be revised and resubmitted as a new proposal. If the proposal has not been revised and is essentially the same as that already reviewed, the proposal will be returned to the applicant.
  - c. If the board of commissioners finds that the operation and maintenance plan or manual is inadequate for any reason, the planning director shall notify the owning entity of any required changes and prepare and file copies of the revised agreement with the County register of deeds, the planning department and the owning entity.

(f) *Application and inspection fees.* Application and inspection fees are required as follows:

- (1) Processing and inspection fees must be submitted in the form of a check or money order payable to the County. Applications will be returned if not accompanied by the required fee.
- (2) A permit and inspection fee schedule is available in the planning department.
- (3) Inspection fees are valid for 60 days. An inspection fee is required when improvements are made to the stormwater control structure consistent with Subsection (e)(3) above, except when a similar fee has been paid within the last 60 days.

(g) *Inspections and release of the performance bond.* Inspections will be made, and the performance bond released, in accordance with the following:

- (1) The stormwater control structure shall be inspected by the planning director after the owning entity notifies the department that all work has been completed. At this inspection, the owning entity must provide the following:

- a. The signed deed, related easements and survey plat for the stormwater control structure ready for filing with the register of deeds for the County.
  - b. A certificate sealed by an engineer or landscape architect, to the extent that NCGS Chapter 89A allows, stating that the stormwater control structure is complete and consistent with the approved plans and specifications.
- (2) The planning director will present the materials submitted by the developer, the inspection report and recommendations to the planning board at its next regularly scheduled meeting.
  - a. If the planning board approves the inspection report and accepts the certification, deed and easements, the board shall file the deed and easements with the office of the register of deeds for the County, release up to 75% value of the construction security and issue a letter of approval for the stormwater control structure.
  - b. If deficiencies are found, the planning board shall direct that improvements and inspections be made and/or documents be corrected and resubmitted to the planning board.
- (3) No sooner than one year after the filing date of the deed, easements and maintenance agreement, the developer may petition the planning board to release the remaining value of the construction security. Upon receipt of the petition, the planning director shall inspect the stormwater control structure to determine whether the controls are performing as designed and intended. The planning director shall present the petition, inspection report and recommendations to the planning board.
  - a. If the planning board approves the report and accepts the petition, the developer must deposit with the County a financial security for maintenance in an amount equal to that described in Subsection (d) (1)b. above, after which the board will release the remaining construction security.
  - b. If the planning board does not accept the report and rejects the petition, the board shall provide the developer with instructions to correct any deficiencies and all steps necessary for the release of the performance bond or other security.
- (4) A zoning compliance permit shall not be issued for any building within the permitted development until the planning board has approved the stormwater control structure, as provided in Subsection(g)(2) above.
- (5) All stormwater control structures will be inspected by the County at least on an annual basis to determine whether the controls are performing as designed and intended. The costs of the inspections are the responsibility of the owning entity and are subject to a fee schedule approved by the County. Records of inspections shall be maintained on forms approved or supplied by the state division of water quality. Annual inspections will

begin within one year of the filing date of the deed for the stormwater control structure.

- (6) If the County discovers the need for corrective action or improvements, the planning director shall notify the owning entity of the needed improvements and the date by which the corrective action is to be completed. All improvements must be made consistent with the plans and specifications of the stormwater control structure and operation and maintenance plan or manual. After notification by the owning entity, the planning director may consult with an engineer or landscape architect, to the extent that NCGS Chapter 89A allows.