

City of Greensboro

NPDES Phase II Post Construction

Proposed Ordinance Text Amendment Changes

The City of Greensboro must adopt and implement the State minimum requirements for the Phase II NPDES post-construction requirements by June 1, 2009. New and revised ordinance language is being proposed to comply with the new regulations. Some of the proposed changes also implement the recommendations of the Stormwater Advisory Board (SWAB) with regard to the City's comprehensive plan initiatives regarding stream buffers. The proposed changes should consolidate and clarify ordinance language and references, and continue efforts started with revisions of the Storm Drainage Design Manual and the Stormwater Management Manual. In brief, stream buffers are proposed to be moved to Chapter 30, while water "quantity" control requirements will remain in Chapter 27. Water "quality" control requirements in all watersheds will remain in Chapter 30. This will consolidate (and hopefully simplify) many of the often confusing requirements into one location and also provide for a stream buffer variance process.

Major proposed changes include:

1. Enhanced stream buffer requirements
2. Water quality control requirements jurisdiction wide
3. As-Built drawings for drainage infrastructure and BMP's

Specific proposed ordinance language changes can be found attached at the end of this document. Additionally, the proposed NPDES Phase II text amendment changes have been posted on the City of Greensboro Stormwater web site under "Featured Links." The web page address is: <http://www.greensboro-nc.gov/departments/Water/stormwater/>

Any comments concerning the proposed text amendment changes should be submitted in written form **by 12 p.m. on January 30, 2009** using the following guidelines:

- a. Detail(s) describing the comment(s)
- b. Specific section of the ordinance the comment(s) pertains to

Comments can be submitted either by e-mail or regular mail to:

E-mail:
mike.borchers@greensboro-nc.gov

US Postal Service:
Stormwater Division
Attn: Mike Borchers
2602 S. Elm-Eugene Street
Greensboro, NC 27406

Chapter 30 Zoning, Planning and Development

- A. Added the term “**Other Watershed Districts**” to identify those areas within the city’s current or future jurisdiction that are located outside the water supply watersheds. Specifically, the area referred to as “other watershed districts” includes the North and South Buffalo Creek watersheds and the Reedy Fork watershed downstream of Lake Townsend.
1. The term “other watershed district” is being added to the following sections:
 - 30-1-3.2(G)
 - 30-1-3.12 (Water Supply Watershed Management and Protection Purposes)
 - 30-4-1.3 (Overlay Districts)
 - 30-4-4.6 (Watershed Critical Area Overlay Districts and General Watershed Area Overlay Districts)
 - 30-5-4.1(A) (Exemptions)
 - 30-6-9.2(F) (Plat Recordation)
 - 30-6-13.7(A)(1)
 - 30-7-1 (Water Supply Watershed), including 30-7-1.2
 - 30-7-2 (General Watershed Areas (GWA))
 - 30-9-6.4(B) (Watershed Exception)
 - 30-9-11.5(A) (Minor Watershed Modifications)
- B. Added or revised the following definitions in Chapter 30-2-2.2:
1. **Disturbed Area.** Any land area which has been cleared, grubbed, graded, disturbed or otherwise altered for the purposes of development.
 2. **High Density Project.** Any project that exceeds the low density project threshold for dwelling units per acre or built-upon area percentage. (also see definition of Low Density Project)
 3. **Larger Common Plan of Development, Redevelopment or Sale.** Any area where multiple separate and distinct construction or land-disturbing activities will occur under one plan.
 4. **Low Density Project.** A project that has no more dwelling units per acre or percent built-upon area for all residential and non-residential development as specified by Table 30-7-1-4 (Density Limits In Water Supply Watersheds And Other Watershed Districts In Dwelling Units Per Acre & % Built-Upon Area).
 5. **Post Construction.** The condition of a development once the land disturbing activity is complete as it relates to the management and control of stormwater runoff quantity and quality.
 6. **Storm, one-year 24-hour.** The surface runoff resulting from a 24-hour rainfall of an intensity expected to be equaled or exceeded, on average, once in 12 months and with a duration of 24 hours.
 7. **Structural Best Management Practice.** A physical device designed to trap, settle out, or filter pollutants from stormwater runoff; to alter or reduce stormwater runoff velocity, amount, timing, or other characteristics; to approximate the pre-development hydrology on a developed site; or to achieve any combination of these goals. Structural BMP includes physical practices such as constructed

wetlands, vegetative practices, filter strips, grassed swales, and other methods installed or created on real property. “Structural BMP” is synonymous with “structural practice,” “stormwater control facility,” “stormwater control practice,” “stormwater treatment practice,” “stormwater management practice,” “stormwater control measures,” and “structural stormwater treatment systems.”

8. ***Watershed, Other*** - All areas within the jurisdiction not encompassed within a water supply watershed district.
- C. Revised the definition of intermittent and perennial stream by adding the following (stream ID) clarification language: (see Section 30-2-2.2)
1. In the event of a conflict in stream determination, a NC Division of Water Quality or U.S. Army Corps of Engineers determination shall supersede any local designation.

The intent with this proposed change is to clarify that the City will honor an official stream determination made by a higher regulatory authority.

- D. The following clarifying language was added to Section 30-7-1.5(D), Permanent Engineered Stormwater Controls,:
1. An operation and maintenance plan for the permanent engineered stormwater control shall be submitted with the watershed development plan.

The Post-Construction minimum requirement includes an operation plan as well, whereas the previous requirement only asked for a maintenance plan.

- E. In Section 30-7-1.6(B), Construction of Watershed Protection Improvements, added the following additional requirements:
1. A final inspection and approval by the Enforcement Officer shall occur before the release of any performance securities.

This allows, by ordinance, an extra measure for the City in the event that a BMP becomes problematic or should a development go bankrupt during construction.

- F. Submission of As-Built Plans (see Section 30-7-1.6 and 27-22(e)):
1. Prior to the issuance of any certificate of compliance the applicant shall submit under seal actual as-built plans for all stormwater conveyances. The plans shall show the final design specifications for all stormwater conveyances with the field location, size, depth, controls, and devices, as installed. This shall include plan view drawings showing all public and private storm drainage piping twelve (12) inches or larger in diameter with associated invert elevation data.
 2. Upon completion of the structural best management practices and before a final certificate of compliance is granted, the applicant shall submit under seal as-built plans for the structural best management practice.

- G. Stream Buffers (30-7-1.8):

The City proposes to consolidate and move the stream buffers requirements for water-supply watersheds and other watersheds districts from Chapter 27 to Chapter 30. Also included are the minimum Phase II NPDES post-construction requirements and the City’s comprehensive plan initiatives as recommended by the Stormwater Advisory Board (SWAB). In summary, a 50’ stream buffer will be required on all intermittent and perennial streams throughout the jurisdictional limits, with the first 30’ undisturbed (except for 100’ stream buffer for high density projects within the water-supply watersheds as originally required). . Additionally, moving the stream buffer language to Chapter 30 now allows for a variance process. The tables describing stream buffers have been consolidated and simplified as listed below:

TABLE 30-7-1
LOW DENSITY STREAM BUFFER WIDTH* REQUIREMENTS
IN WATERSHED DISTRICTS

LOW DENSITY OPTION

TABLE INSET:

Watershed District	Perennial Streams, Lakes & Ponds			Intermittent Streams		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Greensboro	0--30	30--50	N/A	0--30	30--50	N/A
Lake Mackintosh	0--30	30--50	N/A	0--30	30--50	N/A
Polecat Creek	0--30	30--50	N/A	0--30	30--50	N/A
Randleman	0--30	30--50	N/A	0--30	30--50	N/A
Other Watershed Districts	0--30	30--50	N/A	0--30	30--50	N/A

TABLE 30-7-2
HIGH DENSITY STREAM BUFFER WIDTH* REQUIREMENTS
IN WATERSHED DISTRICTS

HIGH DENSITY OPTION

TABLE INSET:

Watershed District	Perennial Streams, Lakes & Ponds			Intermittent Streams		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Greensboro	0--30	30--50	50--100	0--30	30--50	N/A
Lake Mackintosh	0--30	30--50	50--100	0--30	30--50	N/A
Polecat Creek	0--30	30--50	50--100	0--30	30--50	N/A
Randleman	0--30	30--50	50--100	0--30	30--50	N/A
Other Watershed Districts	0--30	30--50	N/A	0--30	30--50	N/A

*Distances on all sides of water bodies are in feet and are with reference to top of bank for streams and normal pool elevation for all other water bodies. Thus, "0" equals top of bank or normal pool elevation and "30" equals 30 feet landward from top of bank or normal pool elevation.

H. Density Requirements (30-7-1.11):

Per the Phase II post-construction minimum requirements, density limitations for low density project are no more than 2 dwelling units per acre and less than or equal to 24% BUA and high density projects are anything greater than 24% BUA. (See Table 30-7-1.4) For low density projects, Section 30-7-2 was revised to provide the option to utilize the Watershed Scoresheet in Other Watershed Districts.

Additional design criteria was also added to meet the minimum Phase II post-construction requirements as follows (see Section 30-7-1.12(B) and 27-22(a)):

1. The design criteria for approval shall include control and treatment of the first one inch (1") of rainfall and a minimum of eighty-five percent (85%) average annual removal for Total Suspended Solids (TSS), as well as discharge the storage volume at a rate equal to or less than the predevelopment discharge rate for the one-year, 24-hour storm. Runoff volume drawdown time shall be a minimum of forty-eight (48) hours but not more than one hundred twenty (120) hours.
 2. For low density development in Other Watershed Districts the use of vegetated conveyances shall be used to the maximum extent practicable.
 3. New development that drains in whole or part to class NSW waters or waters assigned a Total Maximum Daily Load (TMDL) by North Carolina DWQ shall design and implement best stormwater management practices, up to and including the installation of engineered stormwater controls, that reduce nutrient loading, or other pollutant of concern, while still meeting other requirements of this ordinance. The Enforcement Officer shall have final approval of any proposed structural best management practice (BMP) required to meet State mandated nutrient loading or other pollutant of concern reduction measures in order to facilitate treatment of the nutrient or pollutant of concern to the maximum extent practicable.
- I. Added the following exemptions to the stormwater quality control provisions of Section 30-7-1.12 (Stormwater quality controls):
1. Development in Other Watershed Districts that cumulatively disturbs less than one acre and is not part of a *Larger Common Plan of Development, Redevelopment or Sale* is exempt from the stormwater quality control provisions of this section. Development that cumulatively disturbs less than one acre is not exempt if such activities are part of a *Larger Common Plan of Development, Redevelopment or Sale*, even though multiple, separate or distinct activities take place at different times on different schedules.
 2. Development that meets all of the following requirements is exempt from the stormwater quality control provisions of this section:
 - The division of a tract in single ownership;
 - The tract area is not greater than two (2) acres;
 - The division does not result in more than three (3) lots;
 - No street right-of-way dedication is involved; and
 - The resultant lots are equal to or exceed the standards of this ordinance.