

Recommendations for Section 304 of the
Chatham County Watershed Protection Ordinance

By the Chatham County Environmental Review Board (ERB)
21 June 2007
(revised 11/13/07)

Section 304. Riparian Buffers Required.

(A) Buffers Required. Where applicable, a permanently protected “riparian buffer” shall be required for development. Field location and classification of streams to locate perennial, intermittent or ephemeral stream will be conducted using the most current NC Division of Water Quality methodologies and methodologies described in this Ordinance. Surface waters or streams may be indicated on the latest USGS 1:24,000 scale (*7.5 minute*) quadrangle map, the NRCS Soil Survey for Chatham County, NC, and other maps provided by the County. These maps may be used in combination as a screening tool only and do not represent the actual extent and location of surface waters and streams in Chatham County.

(B) Field Delineations. Field delineations of wetlands shall continue to be conducted using the 1987 U.S. Army Corps of Engineers methodologies¹ and supplements for each development project. The U.S. Army Corps of Engineers and the North Carolina Division of Water Quality has jurisdiction over wetlands or “waters of the United States”. For the purposes of this Ordinance, all field delineations of streams, seeps and springs must be conducted by a qualified professional who has received documented certification of training in classifying surface waters and/or wetland delineation methodologies in North Carolina. All field determinations of streams, seeps and springs shall be subject to review and approval by the County.

(C) Exemptions to Riparian Buffer Requirements.

1). Existing lots and existing development as set forth in § 103 and § 307 of this Ordinance. For the purposes of this Ordinance, the existing lots and existing developments are required to meet the riparian buffer requirements set forth in the Watershed Protection Ordinance in effect from January 1, 1994 up to the date immediately prior to the adoption of these amendments.

¹ Currently, the applicable version is known as: *Environmental Laboratory (1987) Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, and supplements, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

2). Existing Agricultural Activities. (see definition of Agricultural Activities in § 109).

3). Existing Silvicultural Activities. (see definition of Silvicultural Activities in § 109).

(D) Buffers by Surface Waters Classification.

1. *Perennial Streams* - The riparian buffer shall be one hundred (100') feet landward, measured horizontally on a line perpendicular from top of bank; this distance shall be measured on all sides of perennial streams, or shall be the full horizontal extent of the Area of Special Flood Hazard ² as most recently mapped by the North Carolina Floodplain Mapping Program, NC Division of Emergency Management, whichever is the greater horizontal distance.

2. *Intermittent Streams* - The riparian buffer shall be fifty (50') feet landward, measured horizontally on a line perpendicular from top of bank; this distance shall be measured on all sides of intermittent streams.

3. *Ephemeral Streams* - The riparian buffer shall be thirty (30') feet landward, measured horizontally on a line perpendicular from top of bank; this distance shall be measured on all sides along all ephemeral streams.

4. *Wetlands* - The riparian buffer shall be fifty (50') feet landward, measured horizontally on a line perpendicular from the delineated boundary, surrounding all features classified as wetlands and linear wetlands.

5. *Seeps and Springs* - The riparian buffer shall be thirty (30') feet landward surrounding all seeps and springs measured horizontally on a line perpendicular from the delineated boundary.

(E) Identification Procedures.

1. The origins, endpoints and boundaries of classified streams and water bodies shall be clearly marked with flagging and accurately located on a map. All delineated streams, water bodies and boundaries shall be submitted to the County for review and approval. If adjacent property access is necessary to render a classification, permission from the relevant property owner(s) is required. Otherwise, classifications will be based on the observable features within the property in question.

2. Before any land disturbance activities may begin, and in addition to any erosion control notification, the riparian buffer boundaries shall be clearly flagged in the field and approved by county staff. Tree protection fencing or

² Chatham County Flood Damage Prevention Ordinance (adopted December 18, 2006).

other approved protective measures shall be installed along the approved flagging lines.

3. Allowable methodologies for establishing the location and extent of streams and water bodies in the field is described in the guidance document entitled, "*Field Procedures for the Classification of Streams and Waterbodies, Chatham County, NC*" (adopted November 19, 2007).

(F) Allowed Structures and Uses in Riparian Buffer.

The following structures and uses are allowed in the riparian buffer:

1. Water dependent structures (see definition of "water dependent structures" herein).

2. Signs and lighting as necessary for public health, safety and welfare purposes.

3. Drainage and forestry maintenance associated with agricultural and silvicultural activities, provided the applicable Best Management Practices are followed.³

4. Stream crossings (roads, driveways, trails) that are perpendicular to the stream flow. Stream crossings shall be designed to minimize the amount of stream channel bed and bank disturbance and shall comply with all applicable Best Management Practices and permit requirements. Stream crossing design alternatives that are preferred include: arches, span bridges and submerged culverts.⁴ The following shall apply for stream crossings:

a. Bents or other support structures for bridges are not allowed within the bankfull area of perennial streams, except where necessary by permit on the Haw, Cape Fear and Deep Rivers.

b. For private road crossings, bridging is required for crossing perennial streams with a bankfull width greater than 10 feet. Otherwise culverts or arches are acceptable.

³ Food Security Act of 1985; Food, Agriculture, Conservation and Trade Act of 1990; and *Forest Practices Guidelines Related to Water Quality* (15 NCAC 11.0101-.0209).

⁴ See CSI Mitigation Measure No. 7 contained in the *Guidance Memorandum To Address And Mitigate Secondary And Cumulative Impacts To Aquatic And Terrestrial Wildlife Resources And Water Quality*, N.C. Wildlife Resources Commission (August 2002).

c. For public road crossings, the crossing design shall be according to the alternative that best meets the intent of this Ordinance and as required by permit.⁵

d. Culverts or arches are allowed for crossing perennial streams with a bankfull width less than 10 feet and for crossing intermittent and ephemeral streams. Culverts and arches must be sized and designed in accordance to standard design practices, including allowing for safe passage for wildlife and floodplain flows. See footnotes 4, 5 and 6.

e. Fill required for crossings must not restrict flows up to a 25-year, 24 hour storm event, based on hydrologic and hydraulic models. Additional culverts within the “floodplain” and at bankfull elevation may be required to ensure these flows are not restricted. See footnotes 4, 5 and 6.

f. All stream crossings within a riparian buffer require an informal consultation meeting with County staff for private roads and County/NCDOT representatives for public roads, prior to sketch design submittal. See Subdivision Regulations, Section 4.2 A.

g. Concentrated discharge of road or driveway runoff into riparian buffers is not allowed. Diffuse flow into riparian buffers are allowed using Best Management Practices.⁶

5. Utilities crossings (water, sanitary sewer, electric, communication lines, easements, manholes, and appurtenances) are allowed in the riparian buffer only where no practicable alternative exists. Where stream crossings are necessary, the preferred methodology for crossings are (1) by attaching to bridges as permitted by NCDOT or private bridge owner; or (2) by directional boring under the riparian buffer and associated stream, water body, wetland, seep or spring, or (3) in combination with road crossings, culvert-type design within the road right-of-way. Culvert-type crossings shall not cause any restriction of stream channel flows up to the 25-year 24-hour design storm.

6. Electric, petroleum and gas pipeline construction and maintenance activities within the prescribed easement area.

⁵ *Subdivision Roads Minimum Construction Standards*, N.C. Division Of Highways Board Of Transportation (January 1, 2000.) (This document is currently being amended. Subsequent amendments to this Construction Manual shall apply.)

⁶ Stormwater Best Management Practices Manual, NC Division of Water Quality (July, 2007).

7. Stream and riparian buffer restoration and associated maintenance activities.

8. All trails, provided that Best Management Practices and an approved Trail Management Plan are employed for recreational purposes, such as pedestrian, mountain biking, general recreation and equestrian uses. Land disturbance associated with these activities is limited to outer or landward fifty (50') feet for perennial, thirty (30') for intermittent and twenty (20') feet for ephemeral streams, measured from top of bank.

9. Where required by state or federal law for public health and safety purposes, wastewater treatment and disposal components, including surface and subsurface wastewater disposal areas, where no practicable alternative exists.

10. Maintenance activities associated with the uses listed above are allowed.

(G) Prohibited Structures and Uses in Riparian Buffer.

1. Utilities (i.e., gas, electric, communications, water lines, wells, sanitary sewer, lift stations, etc.) except where stream and buffer crossings are required. Stream and buffer crossings for utilities must be perpendicular to stream flow.

2. Receiving, collection, storage or distribution areas for hazardous waste and hazardous materials.

3. Sanitary landfills and landfills as defined in this Ordinance. Mulching or chipping of inert, organic plant materials is allowed for forestry or maintenance activities.

4. Constructed storm water features.

5. Discharge of concentrated storm water runoff or drainage from culverts, ditches, and other conveyances.

6. Entry by motor powered vehicles, except for the purpose of maintaining existing utility corridors (or new power line or gas corridors) and providing emergency services.

7. Excavation, land clearing, grading or fill material that is not allowed by permit.

8. Stream or buffer maintenance activities unless otherwise allowed by permit.

(H) Buffer vegetation requirements.

From and after the date of adoption of this ordinance, any of the above riparian buffers shall minimally remain in their existing vegetated condition. Other than for silvicultural or allowable forest management activities using Best Management Practices, clear cutting or forest thinning activities (less than a density of 100 stems per acre that are greater than 5 inches diameter 48" in height.), is prohibited. If this activity occurs, the required buffer widths for the associated stream type must be doubled in width (excluding floodplain widths if applicable). If required, this density evaluation shall be completed by a forester, biologist, or environmental scientist and submitted to the County for review.

The riparian buffer shall otherwise remain in its existing forested condition, or if not forested, the following is required:

1. Natural regeneration of forest vegetation, OR
2. Planting of trees, shrubs, or ground cover plants provided that Best Management Practices are used. Plantings shall consist of species native to Chatham County.⁷
3. Invasive species listed by the North Carolina Botanical Garden may be physically removed from the buffer and is an allowed maintenance activity.⁸

(I) Determination of "No Practicable Alternative" or "Variances".

1. *No Practicable Alternative Authorization* The process, procedure and requirements for obtaining this authorization is an Administrative Review procedure as found in § 507(A) of this Ordinance.

Owners of a lot who wish to undertake uses designated as "allowed" under subsections F(5) and F(9) above shall submit a request for a "no practicable alternatives" determination by the Watershed Review Board or delegated authority. The applicant shall certify that the criteria identified in subsections (a), (b) and (c) below are met. The Watershed Review Board or delegated authority shall review the entire project and make a finding of fact as to whether a "no practicable alternatives" determination is met. The Watershed Review Board or delegated authority shall grant an "Authorization Statement" upon a "no practicable alternatives" determination. The procedure for issuing an Authorization Statement shall be based upon meeting all of the following criteria:

⁷ Weakly, Allen S.; *Flora of the Carolinas, Virginia, and Georgia, and Surrounding Areas*, (UNC Herbarium, NC Botanical Garden, 2007).

⁸ *Plants to Avoid in the Southeastern United States* compiled by Allison Schwarz and Johnny Randall, Spring 1999; Controlling Invasive Plants, NC Botanical Gardens (UNC Press, 2002).

(a) The basic project purpose cannot be accomplished in a manner that would cause less land disturbance, preserve aquatic life and habitat, and protect water quality;

(b) The use cannot be reduced in size or density, reconfigured or redesigned to cause less land disturbance, preserve aquatic life and habitat and protect water quality; and

(c) Best Management Practices are used to cause less land disturbance, preserve aquatic life and habitat and protect water quality.

2. *Variances.* Persons who believe they are entitled to seek relief from a requirement of § 304 of this Ordinance may apply for a Variance. The process, procedure and requirements for obtaining a Variance are found in § 507(B) of this Ordinance.