

*Designation of the Critical Areas of Drinking Water Supply Watersheds as well as
McDowell & Goose Creek Watersheds as
Critical Erosion Control Areas
November 30, 2006*

Sediment is one of the primary causes of degraded water quality and biological conditions in Mecklenburg County streams and lakes. Currently, Mecklenburg County has a very progressive sediment and erosion control ordinance that is being strictly administered countywide to ensure the proper installation and maintenance of erosion control measures; however, some sediment is still able to leave construction sites to cause cumulative impacts downstream. Erosion control measures are designed to remove 85% of sediment for up to a 10-year, 24 hour storm event (4.8 inches of rainfall in a 24 hour period). The remaining 15% of the sediment as well as sediment discharged as a result of a storm exceeding the 10-year, 24 hour event will discharge to downstream surface waters. The cumulative affect of such sediment discharges can cause significant negative water quality impacts. In addition, if an erosion control measure fails, as they sometimes do, the resulting discharge can cause significant releases of sediment to surface waters. In some watersheds the cumulative impacts of these sediment discharges can cause significant downstream degradation and impacts to the quality and usability of surface water resources.

Charlotte-Mecklenburg Storm Water Services (CMSWS) has identified the critical areas in water supply watersheds as well as the watershed areas draining to Goose Creek and McDowell Creek in Mecklenburg County as “Critical Areas” for the use of enhanced erosion control measures to prevent surface water quality degradation as discussed above. The reason for this designation for the critical areas in water supply watersheds is that these areas are within close proximity to a water supply intake or reservoir and have a greater risk for causing water pollution than other areas in the watershed. The Goose Creek watershed is being identified as a critical area for enhanced erosion control because it is home to the Carolina heelsplitter, a federally listed endangered species of freshwater mussel. Enhanced erosion control measures are necessary to reduce sediment discharge to Goose Creek, which is a primary threat to the survival of the heelsplitter. McDowell Creek is designated as a “Critical Area” for the control of erosion because it is located upstream of the Charlotte-Mecklenburg drinking water intake on Mountain Island Lake. This watershed is also subject to significantly elevated turbidity levels due to an unstable substrate, which further exaggerates negative water quality impacts. In addition, CMSWS has established as one of its FY2006-2007 Program Measures the reduction of the annual total suspended solids (TSS) load in McDowell Creek to less than or equal to 0.461 tons/acre/year. The load during FY2005-2006 was measured at 0.544 tons/acre/year. The results of TSS measurements in McDowell Creek are reported to the County Manager’s Office quarterly. In addition, both EPA and the N.C. Division of Water Quality have designated McDowell Creek as “Special Interest Waters.” McDowell Creek is identified on the State’s 303(d) list as being impaired due to poor biological conditions. McDowell Creek’s designation as “Special Interest Waters” makes this waterbody a high priority for efforts to restore water quality, further supporting CMSWS’s designation of McDowell Creek as a “Critical Area” for the control of

erosion, which is the creek's biggest source of impairment.

Section 7(a) of the Mecklenburg County Soil Erosion and Sedimentation Control Ordinance specifies that plans identify "Critical Areas" including off-site areas that are especially vulnerable to damage from erosion and/or sedimentation and that these areas receive special attention. As discussed above, CMSWS recognizes the critical areas in water supply watersheds in the northern Towns as well as the Goose Creek and McDowell Creek Watersheds as Critical Areas for the control of erosion. Therefore, effective January 1, 2007 all new sediment and erosion control plans submitted for land development projects in these areas shall contain the following enhanced erosion control measures.

1. Baffles or forebays shall be installed in all sediment basins.
2. Surface water draw down devices (risers or skimmers) shall be installed in all sediment basins.
3. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenever a sediment trap, basin, pit, hole or building foundation is being pumped out to remove sediment laden water. This activity must be inspected and approved by the Mecklenburg County erosion control inspector.
4. Double silt fence shall be used along wetlands, streams, lakes or other surface water bodies as well as adjacent to all S.W.I.M. Buffers. High hazard silt fence will be installed as determined necessary by the field inspector.
5. The amount of uncovered area at any one time shall be limited to no more than 20 acres.
6. A 10-foot undisturbed buffer shall be provided around the outside edge of drainage features such as ephemeral, intermittent and perennial streams, ponds and wetlands. Incidental drainage improvements or repairs will be permitted within the buffer as approved by Mecklenburg County staff.
7. Installation of temporary ground cover or seeding must be performed within five (5) working days or slope drains installed after fill slopes are brought up in height.
8. Permanent terraces shall be installed on all slopes over 10 feet in height to reduce runoff velocity coming down the slopes.

Critical Erosion Control Areas

