Water Quality Monitoring Programs in the City of Greensboro

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Biographical Sketch of Author
Rebecca earned her Bachelor of Arts Degree in Geography with an Environmental Concentration from the University of North Carolina at Greensboro and has over three years experience as a Water Quality Specialist for the City of Greensboro's Stormwater Management Division. Her current duties involve overseeing the Lake Monitoring program, developing a Stream Channel Monitoring program, using GIS applications and analyzing data, inspecting and monitoring best management practices (BMPs), as well as identifying and eliminating illicit connections and improper disposals. Her recent accomplishments include developing and successfully implementing a Quality Assurance/Quality Control (QA/QC) program for the City's water quality monitoring programs.

Abstract
The City of Greensboro's Stormwater Management Division uses comprehensive, watershed-based water quality monitoring programs to identify pollution sources and determine long-term trends in water quality. The Instream Stormwater Monitoring (ISM) program utilizes the collection of instream stormwater samples during rain events to determine the effects of urban stormwater runoff on Greensboro's receiving stream water quality. The Ambient Monitoring program relies on collections of instream water samples during dry weather, or ambient, conditions to determine baseline water quality of our City's streams. Biological assessments of the aquatic life (macroinvertebrates and fish) within our streams are also conducted to complement chemical and physical water quality information related to the overall health of our streams. The Stream Channel Monitoring program uses permanent cross-sections to monitor long-term bank stability. Monitoring of various BMPs to determine pollutant removal of site-specific devices is also conducted to assess the pollutant removal efficiencies of conventional and non-conventional stormwater treatment devices.

The City has recently developed a web-based GIS application that allows our water quality data to be viewed by the public. This water quality index (WQI) is an unweighted index based upon the results of several pollutant parameters, which are then calculated into a single score to indicate the overall quality of the water. These WQI scores help water quality staff to easily analyze water quality trends over time as well as provide an easy way for the public, management or elected officials to interpret the data. The Water Quality Section has also produced and implemented a comprehensive QA/QC document for all monitoring programs to ensure that data collected and reported is of the highest quality. This document is currently being reviewed by the North Carolina Division of Water Quality.