



## *Mecklenburg County Surface Water Improvement & Management (S.W.I.M.) Initiative*

By the mid 1990s, approximately 85% of the over 2000 miles of creeks in Mecklenburg County had become polluted by rapidly spreading urbanization and were being underutilized as a community resource. On October 15, 1996, the Mecklenburg County Board of County Commissioners (Board) took a stand in support of clean, usable surface waters through the adoption of the community's first "Creek Use Policy" calling for all Mecklenburg County surface waters to be "...suitable for prolonged human contact and recreational opportunities and supportive of varied species of aquatic life." At that time, only about 15% of Mecklenburg County's creeks met this policy statement. Much work was needed to protect the cleaner creeks and those creeks with poorer water quality needed to be restored. At the direction of the Board, a panel of stakeholders was convened in February 1997, including representatives from development and environmental interest groups. This Panel worked with City and County staff toward the development of a comprehensive strategy aimed at fulfilling the Board's policy statement. In January 1998, the Panel reported back to the Board with a three (3) phased approach for achieving its "Creek Use Policy." The Board approved the approach and the implementation of Phase I began in FY 1998-1999. The approach, entitled Surface Water Improvement & Management or S.W.I.M, prioritized creek basins and tasks using the philosophy of:

- preventing further degradation,
- preserving the best waters,
- improving the good and
- remediating the worst waters.

The following principles are used to guide S.W.I.M. efforts:

- use of a holistic approach in addressing the community's water quality, quantity and greenspace issues;
- basin level community involvement and support;
- basin specific analysis using modeling and stream assessment; and
- use of proven, scientifically sound watershed management techniques.

S.W.I.M. Phase I focused on the basic steps necessary to address the County's worst pollutants and prevent further water quality degradation. The program has been successful, resulting in measurable improvements to water quality conditions in Mecklenburg County including:

1. Enhancement of efforts to enforce erosion control ordinances and educate the development community resulting in a reduction in sediment levels in some streams by as much as 79%.
2. Enhancement of measures to protect drinking water supply reservoirs by working in close cooperation with developers to improve land development techniques and protect water quality (The Palisades).
3. Establishment of vegetative stream buffers countywide through the adoption of ordinances. These buffers serve to filter storm water pollutants and protect water quality.
4. Enhancement of efforts to address elevated bacteria levels in surface waters resulting in reductions in bacteria counts by as much as 76% in several urban streams.

5. Implementation of water quality modeling techniques for the development of watershed based management plans aimed at maintaining and restoring water quality conditions.
6. Development of automated water quality monitoring techniques, which provide water quality data 24 hours a day, 7 days a week significantly enhancing capabilities for identifying and eliminating pollution problems. This technique was employed in cooperation with N.C. DOT to ensure the protection of Long Creek from sediment discharges from I-485 construction activities and is being expanded to other locations around the County.
7. Improved coordination between City and County staff involved in stream related activities through the development of the Creek Coordination Committee (CCC), which meets monthly to coordinate stream improvement activities.
8. Implementation of stream inventory and assessment activities to better characterize current stream conditions and identify threats to water quality.
9. Increased public education and involvement resulting in a 75% increase in volunteer participation in several water quality restoration initiatives including “Adopt-A-Stream” and “Storm Drain Marking.”

S.W.I.M. Phase II was implemented beginning in FY02-03 for the purpose of maintaining and/or restoring water quality conditions in identified special interest watersheds. Efforts focus on the development and implementation of comprehensive watershed management strategies for identifying and eliminating pollution sources to achieve “swimmable/fishable” waters. During its first year of implementation, S.W.I.M. Phase II made significant progress toward achieving this goal. In general, S.W.I.M. Phase II utilizes the tools developed in S.W.I.M. Phase I, such as water quality monitoring and modeling, to eliminate specific point and non-point source pollution problems in special interest watersheds. During FY02-03, these special interest watersheds included McDowell, Gar, Goose, Duck and Stevens Creeks in Mecklenburg County. The overall goal of the watershed management strategy is to maintain and/or restore water quality conditions in these watersheds through the use of scientifically sound management techniques, performance based land development requirements and state-of-the art water quality restoration initiatives. To fulfill this goal, during FY02-03 one of the most progressive water quality ordinances in the southeast was adopted for McDowell and Gar Creeks upstream of the Charlotte-Mecklenburg drinking water intake in Mountain Island Lake as well as those creeks draining to the Rocky River within the jurisdiction of the Town of Huntersville in Mecklenburg County. The objective of this ordinance is to prevent further water quality degradation from continued land development activities utilizing low impact development (LID) techniques and water quality modeling capabilities. In addition, Mecklenburg County is in the process of designing retrofitted structural best management practices (BMPs) to reduce existing pollutant loads in McDowell Creek. For Goose, Duck and Stevens Creeks, which are located within the Town of Mint Hill in Mecklenburg County, a post-construction ordinance utilizing LID and modeling techniques is currently under development with implementation planned for March 2004.

Implementation of S.W.I.M. Phase III is underway for the purposes of applying the watershed based managed tools developed in Phases I and II to the remaining waters county-wide with the ultimate goal of achieving the Board’s “swimmable/fishable” goal by 2015.