

ENVIRONMENTAL STEWARDSHIP AGENDA
Wake County, North Carolina
Fiscal Year 2005-06

This Environmental Stewardship Agenda includes a vision and outlines programs to achieve that vision by improving water and air quality, maintaining open space, managing solid waste, improving public health, advancing environmental literacy and fostering an environmental stewardship ethic through environmental education of people in Wake County. The Environmental Stewardship Agenda takes the long-term view, and sets standards that other local governments can individually adopt within their jurisdictions to collectively further the goals of the ESA.

VISION

Wake County will always be a great place to live, work, learn and play. In Wake County, people can breathe clean air and enjoy clean water. People can enjoy open space that is adequate and conveniently located. They know that their solid waste is properly managed and that the environment is healthy and protected against natural and man-made threats. Residents and visitors are knowledgeable about the environment and take personal responsibility to support this vision.

1. WATER QUALITY

Goal- Wake County will provide leadership to protect and restore the uses and functions of the County's water resources including its sustainability and quality in a manner that is consistent with the community's values for balancing economic development, future demands upon water resources, environmental protection and natural resource conservation and management.

A. Watershed Management Plan

The Board of Commissioners accepted the Watershed Management Plan in January 21, 2003 and adopted the Growth and Environmental Initiatives Implementation Plan April 7, 2003, which included the following Watershed Management Plan actions:

- Floodplain protection –prohibit development and filling in the 100-year floodplain (*adopted by the Board of Commissioners May 19, 2003*). Complete.
- Riparian buffers –
 - Increase stream buffers to 100 feet on perennial streams in water-supply watersheds as a first step. (*Adopted by the Board of Commissioners May 19, 2003*)
 - Increase stream buffers to 100 feet on priority watersheds. (*To be addressed in the Unified Development Ordinance rewrite.*)
- Stormwater runoff –
 - Limit imperviousness or control overall stormwater runoff volume in priority and healthy watersheds. Review all existing development ordinances to remove impediments to reducing impervious surfaces. (*To be addressed in the Unified Development Ordinance rewrite.*)
 - Encourage use of low-impact development site planning principles.

- Use offset fees if development exceeds impervious surface limits. *(Staff is pursuing low-impact development as on-site mitigation for increased impervious surfaces rather than offset fees.)*
- Conservation subdivisions– adopt regulations to allow conservation subdivisions. Where there is municipal water and sewer, a minimum of 30 percent of open space should be preserved to qualify as a conservation subdivision. *(Open Space subdivision provisions adopted by the Board of Commissioners January 18, 2005.)*
- Erosion and sediment control –
 - Cross-train inspectors from other divisions to identify erosion problems.
 - Update the erosion and sediment control manual to incorporate new technologies
 - Provide education programs for contractors and residents. *(This is being done as a non-structural best management practice to help control post-construction site runoff as required in Wake County’s National Pollution Discharge Elimination System permit.)*
- Septic systems –
 - Inform homeowners of location of well and septic systems, and CD’s or videos be provided to people buying houses with septic system regarding maintenance. *(Completed in FY 2004, and ongoing, in partnership with realtors.)*
 - Conduct a pilot study to obtain better information on the causes of septic system failure and failure rates. If the study indicates that a management entity would be appropriate to provide assistance to homeowners on maintenance and operation practices for their septic system, create such a management entity. *(Pilot study completed, recommendations pending peer review.)*
 - Improve the data monitoring system for septic systems, creating a database for trend analysis.
 - Require certification for septic system installers. *(State bill to require certification did not pass in the General Assembly in 2004.)*
- Develop a high-level funding program to implement the watershed management plan. *(Wake County is undertaking a countywide stormwater management assessment as a first step toward determining appropriate measures to managing stormwater throughout the County.)*
- Develop an in-stream monitoring program to continue to characterize the quality and quantity of the County’s water resources. *(Wake County is addressing monitoring through the Capital Improvements Program and applying for matching funds from USGS.)*
- Stream Restoration- this is an ongoing process. In FY 04:
 - Wake County staff completed 52,854 linear feet of stream assessment and 1001 acres of wetland assessment.
 - NC Ecosystem Enhancement Program:
 - Completed two projects consisting of 6,700 feet of stream restoration
 - Accepted three Wake County projects comprising 11,800 linear feet of stream restoration
 - Is undertaking a feasibility study on Moccasin Creek - 2500 feet of stream restoration, 100 acres of wetland preservation)
 - Al Privette, a private landowner, completed one 400-foot stream restoration project. Wake County staff completed the design and managed construction.
 - Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of audiences on watershed science, data and trends; pollution sources and their environmental, economic and societal impacts; and best management practices and stewardship actions

that protect and sustain surface water resources. *(This is being done as a non-structural best management practice as required in Wake County's National Pollution Discharge Elimination System permit.*

B. Tree protection strategies of the Growth Management Strategy

The Board of Commissioners accepted the Growth Management Strategy February 3, 2003 and adopted the Growth and Environmental Initiatives Implementation Plan April 7, 2003. Wake County Growth Management Strategy implementation actions which support water quality include:

- Adopt tree protection ordinances to regulate clear-cutting. *(This was addressed through amendments to the Zoning Ordinance adopted January 18, 2005.)*
- Adopt tree-planting requirements for new developments. *(This is being addressed through the Unified Development Ordinance.*
- Enhance voluntary programs to plant trees. *(Approximately 2,000 trees planted annually through the Capital Trees program. Soil and Water Conservation District partners with others to plant trees as part of the cropland conversion program and wildlife enhancement program.*

C. Consolidated Open Space Plan recommendations

See section 2A.

D. Comprehensive Groundwater Investigation

Wake County staff has implemented a web-based Groundwater Information System that will provide the public with information on groundwater yields and quantity by areas of the County.

In July 2003, the Groundwater Study Advisory Committee completed its recommendations, which include the following:

- Lead in planning and developing an Environmental Monitoring Program involving local, state and federal governments, departments and agencies.
- Include a long-term monitoring well network, including monitoring wells and stream gauging stations throughout Wake County.
- Implement a community-based process to develop principles and policies for groundwater resource sustainability.
- Conduct a study to assess the water quality and quantity impacts to both surface and groundwater from development activities.
- Develop and implement a public education program to provide basic information about groundwater, wells and the risk and responsibilities of well ownership.
- Conduct additional investigation of radionuclides in groundwater throughout Wake County.
- Sample and analyze groundwater for constituents likely to be associated with agricultural practices (i.e. pesticides and herbicides) in Wake County. *(The Human Services Board revised well rules to require sampling and analysis.)*
- Sample and analyze groundwater for constituents likely to be associated with industrial or land disposal practices (i.e. underground fuel storage, wood treating operations, landfills) in Wake County. *(The Human Services Board revised well rules to require sampling and analysis.)*
- Collect data on new wells that do not yield sufficient water or contain constituents that threaten public health.

- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on ground water science, data and trends; pollution sources and their environmental, economic and societal impacts; and best management practices and stewardship actions that protect and sustain ground water resources.

E. Compliance with National Pollution Discharge Elimination System

On September 21, 2004, Wake County received its draft permit from the NC Department of Environment and Natural Resources Division of Water Quality for the Federal National Pollution Discharge Elimination System (NPDES). Wake County is included in the second phase of that program and partnered with Wake County Public School System and Wake Community College properties in the permit. The permit outlines what Wake County will do to address the following water quality concerns:

- Public Involvement and Participation,
- Illicit Discharge Detection and Elimination (required only in areas where the County owns or maintains a small municipal separate storm sewer system (small MS4)),
- Construction Site Stormwater Runoff Control
- Post-Construction Site Stormwater Runoff Controls in New Development and Redevelopment (required only in areas where the development exceeds the low density threshold established by EPA),
- Pollution Prevention/Good Housekeeping for Municipal Operations (required only in areas where the County owns or maintains a small municipal separate storm sewer system (small MS4))
- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on stormwater, impervious vs. pervious surfaces, nonpoint pollution sources, and stewardship actions that reduce peak flow, filter contaminants, recharge ground water, and protect water resources.

F. Implement the Wake Soil and Water Conservation District Business Plan.

- Evaluate and analyze natural resource management problems on private and public lands including farm, forest, and idle lands. Implement solutions to properly manage watersheds and other natural resources in cooperation with the Wake Soil and Water Conservation District. This will result in public water quality benefits from privately owned natural resources.
- Develop and implement watershed protection and restoration plans for priority watersheds.
- Provide technical resources to assist land users and owners to properly manage their soil, water, wetland, plant, and animal resources to maintain and improve water quality.
- Administer the Wake County Voluntary Agricultural District Program to help maintain and improve water quality.
- Provide natural resource information and reference materials to land users, consultants, businesses, homebuyers and homeowners to better manage their natural resources.
- Manage the Wake County Soil Survey Update; this will result in a more efficient implementation of the Watershed Management Plan.
- Coordinate the operation and maintenance of the Crabtree Watershed Project structures and provide general maintenance of watershed management projects.
- Publicly recognize land users for outstanding watershed stewardship.

- Lead Environmental Education efforts to develop effective programs and services for a variety of County audiences on the importance of soil and water conservation, including; best management practices that protect soil, water and air quality and enhance wildlife habitat; the environmental, economic and societal values of farmland; the products that local farms produce and the production pathway from field to table; diversification of farming and the rise of local farmer's markets; and the role of citizens in protecting and sustaining the natural resources of the County

2. OPEN SPACE

Wake County will define and provide leadership to maintain the “green infrastructure” of Wake County, including environmental, recreational, wildlife habitat, cultural and historic open spaces. A primary objective of the open space plan is to help maintain water quality. Wake County will, through a collective, collaborative and efficient process, develop recreation facilities for current residents and future generations. To achieve this goal, Wake County will take the following actions:

A. Consolidated Open Space Plan

The Board of Commissioners accepted the Consolidated Open Space Plan March 17, 2003 and adopted the Growth and Environmental Initiatives Implementation Plan April 7, 2003. Wake County Consolidated Open Space Plan implementation actions include:

- With municipalities, jointly identify and acquire 30,000 acres of open space lands in municipal jurisdictions. *(Wake County and its partners have acquired about 1800 acres of open space, valued at \$23 million, and Wake County’s contribution is \$11.64 million. November 2004 bond issue for \$26 million will keep the program going.)*
- Target open space prioritization and acquisition in areas outside of municipal jurisdictions
- Ensure that stewardship for all acquired open space lands is determined at the time of acquisition.
- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on the importance of biodiversity and the need to protect and enhance plant and wildlife habitat; the ecological services of forests and riparian buffers and the need to plant trees and native vegetation; the value of farmland, open space and land use planning; and the role of citizens in protecting and sustaining the “green infrastructure” of the County.

B. Parks and Recreation Master Plan

The Board of Commissioners adopted the Wake County Parks and Recreation Master Plan October 7, 2002. By adopting the plan, the Board made no commitments to future funding levels. Those will be decided as part of upcoming budget processes. However, the major foci of the plan are:

- Develop large parks of 100 acres and greater, but will also continue to collaborate with local, state and federal governments, non-profits and businesses to help develop recreational facilities around the County.
- Lead in providing assistance and resources to municipalities and the school system, such as the development of school parks and grants to help non-profits and municipalities with programs.
- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on the

importance of knowing one's ecological address, sense of place, and personal responsibility to environmental stewardship.

3. AIR QUALITY

The Air Quality Task Force completed its recommendations on air quality control measures July 25, 2003. The Board of Commissioners approved an Implementation Plan for those recommendations February 2, 2004. High priority control measures for Wake County to undertake include:

- Support the Triangle Air Awareness Program (*Active participant since May 2004 and winner of three awards this year*)
- Support the Triangle Clean Cities Coalition. (*Active participant since 2002*)
- Collaborate with others to foster regional cooperation in an organized manner. (*Partnered with TJCOG and others in 2004, ongoing.*)
- Become designated as a Best Workplaces for Commuters. (*Designated July 2004*)
- As fleet turns over, use Low Emission Vehicles, hybrid vehicles and alternative fuel vehicles. Use biodiesel fuel. (*60 flex-fuel vehicles purchased, 12 hybrid vehicles purchased, all 60 diesel vehicles are fueled by biodiesel.*)
- Work with Wake County Public School System to retrofit school buses, adopt idling policies. (*Awarded grant for \$100,000 to retrofit buses with diesel oxidation catalysts January 2004, installation completed November 2004. Additional grant funds to convert entire fleet requested in 2004*)
- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on the sources of air pollution; pros and cons of various energy sources; the impact of air deposition on water quality; and the important role of land use planning, transportation choices and stewardship actions in reversing the environmental, economic and societal impact of emissions on air quality and public health.

On February 7, 2005, the Board of Commissioners accepted a list of actions that individuals, employers, schools and local governments can do to improve air quality. The Wake County Air Quality Committee prepared this list.

4. SOLID WASTE

By the end of the 2003-2013 planning period, the local governments in Wake County covered by the 10-Year Comprehensive Solid Waste Management Plan ("participating local governments") will have joined together to implement and administer a comprehensive solid waste management system that provides the following on behalf of the residents, institutions, and businesses that they serve:

- Ensure a solid waste management system for waste reduction, reuse and recycling to the maximum extent practicable;
- Assure appropriate long-term disposal capacity located within a reasonable haul distance;
- Develop an efficient system for collection and delivery of solid waste to designated disposal facilities;
- Provide convenient opportunities for residents, institutions, and businesses to recycle a full range of marketable materials (including yard debris), and to properly dispose of waste requiring special handling (e.g., used motor oil, household

hazardous wastes, pesticide containers, automobile batteries, electronic waste, and others);

- Offer incentives, disincentives, and policies that motivate residents, businesses, and institutions to reduce and recycle waste, including institution of a countywide construction and demolition debris mandatory recycling ordinance;
- Devise an efficient recovery and processing infrastructure with the capacity to collect and divert from disposal all recyclable materials that have reliable market outlets;
- Supply accessible, user-friendly information to all citizens on how to reduce and recycle waste in their homes, places of work, and places of learning;
- Create methods to reduce illegal dumping and littering, and to monitor and enforce regulations prohibiting such behavior;
- Develop a plan and facilities, as needed, for the proper management of solid waste debris resulting from natural disasters and emergencies;
- Devise an expanded recycled products purchasing program with formal policies on procurement of products with recycled content and other "green" products by participating Wake local governments;
- Procure a secure and equitable funding system to cover current and future costs associated with those programs and services needed to meet the solid waste reduction and management goals outlined in the Wake County 10-Year Comprehensive Solid Waste Management Plan.
- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on the importance of reducing, reusing, and recycling solid waste; buying recycled products and creating new and local markets; and reducing personal consumption and/or disposal of material goods and/or packaging.

To achieve this vision, the participating local governments will work collectively to integrate and coordinate their respective services and programs, and to realize increased efficiencies and cost savings that result from these joint efforts. In addition, the participating local governments will strengthen their partnerships with each other and with private sector service providers, to provide for appropriate and effective use of both public and private sector services and facilities for the purpose of meeting the ongoing waste management needs and interests of Wake County citizens and businesses in the most environmentally sound and cost effective manner feasible. Lastly, Wake local governments will participate in regional planning and decision-making activities to address regional opportunities for enhancing the effectiveness and efficiency of recycling and solid waste management operations.

5. ENVIRONMENTAL HEALTH AND SAFETY

Wake County will protect and promote the health, safety and welfare of people and pets throughout the county and decrease the number of unwanted, owner-surrendered and stray pets impounded in order to prevent the unnecessary euthanasia of animals. Wake County will improve sheltering, adoption and reclaiming of animals through public/private partnerships.

Wake County will prevent illness and injury through the promotion of safe and sanitary operations in: food service; child care; lodging; public pools; institutional and tattoo establishments; mobile home parks and migrant labor facilities; plus the investigation and prevention of childhood lead exposure and vector borne diseases

Wake County will prepare a plan to identify, anticipate and minimize the effects of natural and man-made hazards for the safety and future of our communities.

- Wake County will implement recommendations of the Animal Control/SPCA Task Force to partner in the sheltering of animals in the county.
- A public/private partnership is being considered to address animal overpopulation and the impact on sheltering. The opening of the new SPCA of Wake County Adoption Center in partnership with Wake County and other agencies involved in animal welfare will raise the care of unwanted animals in the county to the next level.
- Prevent illness and injury through the promotion of safe and sanitary operations in: food service; child care; lodging; public pools; institutional and tattoo establishments; mobile home parks and migrant labor facilities
- Prevent illness and injury by investigating and preventing childhood lead exposure and vector borne diseases
- Wake County will prepare and implement a Hazard Mitigation Plan to reduce the current and future vulnerability of our communities to natural hazards. The Plan will meet or exceed all Federal and State minimum guidelines. The Plan will be prepared with the involvement of the public to insure that their concerns are addressed and expectations met. A Draft Plan will be prepared December of 2003 or January 2004, to be implemented later in 2004.
- The Wake County epidemiological team will continue to refine Wake County's response to potential bio-terrorism threats.
- Work with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on the sources of environmental health hazards and their prevention to safeguard environmental and public health.

6. ENVIRONMENTAL EDUCATION AND INFORMATION

Wake County will provide quality environmental education and environmental information to its employees and officials, government agencies, the regulated community, schools and the public at large. Wake County will advance environmental literacy and stewardship to support the goals and realize the vision of the Environmental Stewardship Agenda.

To achieve this goal, Wake County Environmental Education and Environmental Information Providers (hereafter referred to as the "Providers") will:

- Work collaboratively to provide a wide variety of environmental education and environmental information programs and services to Wake County citizens and employees that accomplish the goals of the Wake County ESA.

- Develop and adopt standards and accountability procedures to assure that environmental programs, services, and information are high quality, have relevance to targeted audiences, are of a timely nature, and are consistent throughout the county.
- Develop effective internal communication and accounting systems to support the collaborative nature and to report the ultimate success of the Environmental Education and Environmental Information Business Plan.
- Develop a formalized communication system to ensure that all County citizens have access to a centralized environmental education and environmental information clearinghouse.

Environmental education and local, accurate informational resources will be available to all Wake County citizens, including the general public, Wake County employees and officials, the regulated community, schools, and government agencies at all levels.

- Wake County employees and officials will become role models for environmental stewardship by adopting practices that protect the environment in their workplaces, homes, and communities. The County Environmental Stewardship Network will focus on internal environmental education and environmental information initiatives.
- Government agencies (*employees at all levels of government*) will utilize partnerships and develop collaborative initiatives that enhance the efficiency and effectiveness of environmental education and environmental information programs and services that result in the adoption of practices that protect the environment.
- Wake County regulated community (*businesses, developers, contractors, consultants, engineers, landowners, architects, farmers, government, green industry*) will be motivated to participate in environmental policy discussions and be active environmental stewards by adopting practices that protect the environment.
- Wake County citizens will become environmentally literate and motivated to be active environmental stewards by adopting practices that protect the environment in their homes, communities, and workplaces.
- Wake County schools (*students, parents and educators in public, private, home schools at all grade levels*) will become environmentally literate and motivated to be active environmental stewards by adopting practices that protect the environment on their school campus as well as in their homes and communities. Environmental education will be an integral part of every Wake County student's educational experience.

The purpose of environmental education is to create new patterns of environmentally responsible behavior. Documentation of effective environmental education is not solely measured by the number of programs or an increase in awareness and knowledge test scores, but in the willingness of citizens to apply new skills and personal commitment when given the opportunity to actively practice environmental stewardship in their community. All responsible citizen actions performed individually and collectively, will serve to successfully achieve the goals of the Wake County E S A.

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