

Conclusions & Recommendations



WATER 2030 **INITIATIVE**



THE NORTH CAROLINA WATER 2030 INITIATIVE

Preparing North Carolina's leaders and citizens to make sound decisions about our water future

Water 2030 is a statewide water resources initiative launched in March 2004 to ensure that North Carolinians in every part of the state have access to ample supplies of clean water. The initiative has produced extensive information on the state's public infrastructure and long-term water supply and is engaging leaders and citizens in discussions about North Carolina's water future.

Background

In the coming years, North Carolinians will be called upon to make unprecedented decisions about water resources. Although the state has long been considered water rich, evidence is mounting that the state's water resources are under stress. In some areas of the Coastal Plain, where aquifers supply most of the water for residential and business use, withdrawals have exceeded nature's capacity to replenish the supply. Nearest the coast, withdrawals of fresh groundwater have resulted in saltwater intrusion, which may necessitate costly water treatment. In the Piedmont, population growth is stretching available supplies of surface water. This came into focus in 2002, when a four-year drought peaked and more than 90 water systems were forced to order mandatory conservation.

As water use increases, so do challenges to the supply of fresh water. Excessive nutrients and other pollutants threaten surface and groundwater systems while development overloads stormwater collection systems and destroys wetlands that once served as natural filters. North Carolina's continued prosperity depends on protecting its water resources in ways that balance many competing demands, including:

- **A growing population.** North Carolina's population – now 8.5 million – is expected to exceed 12 million by the year 2030.
- **Natural ecosystems and industries that depend on natural resources.** North Carolina's seafood industry alone is valued at \$100 million, and recreation and ecotourism industries are growing.
- **New industries.** Many of the state's emerging industries, such as pharmaceuticals, resins and biotechnology, are heavily dependent on clean water.

The Initiative

The Water 2030 Initiative builds on previous work by federal and state agencies, local governments, university researchers and nonprofit organizations. In the early 1970s, Congress passed groundbreaking legislation that led to cleaner rivers, lakes and streams; federal aid for construction of municipal wastewater treatment plants; and safety standards for drinking water. The North Carolina General Assembly made its own clean water history in 1989, becoming the first state in the nation to mandate the creation of state and local water supply plans. That same year, the legislature also passed a law requiring the creation of minimum statewide standards for watershed protection. In the next decade, North Carolina went on to establish the Clean Water Management Trust Fund to finance projects that address water pollution; to launch an environmental protection planning process for the state's 17 major river basins; and to adopt a wetlands restoration program to improve water quality in those basins.

The Rural Center's earlier work also forms part of this background. Initial studies led to the creation of grants programs to help low-income communities finance water and sewer construction. Then in 1998, the center released the results of a three-year investigation that revealed \$11.3 billion in needed water and sewer system improvements statewide. The center's investigation gave impetus to the passage of the North Carolina Clean Water Bond Act of 1998, which provided \$800 million for local water and sewer projects.

The Water 2030 Initiative will assist North Carolinians in making the next set of critical decisions about water resources. It includes updated information on water-related infrastructure in all 100 counties and estimations of water availability and use through the year 2030.

Capital Needs Projections

	2005-2010 (in billions)	2011-2030 (in billions)	Total (in billions)
Water	\$ 2.84	\$ 4.80	\$ 7.64
Sewer	\$ 3.44	\$ 4.08	\$ 7.52
Stormwater	\$ 0.57	\$ 0.90	\$ 1.47
Total	\$ 6.85	\$ 9.78	\$ 16.63

With the knowledge gained from the initiative, North Carolinians will be in a better position to:

- Understand the impact of the 1998 Clean Water Bond Act and identify future revenue sources for infrastructure improvements and hazard mitigation.
- Understand the impact of regulations on cost of service.
- Identify opportunities for regional cooperation in developing and protecting water resources.
- Target financial investments by federal, state and local governments and other funders.
- Identify gaps in existing data.
- Protect resources vulnerable to tampering or sabotage.

Funding and Partners

A wide range of partners and collaborators have joined the Rural Center to make the Water 2030 Initiative possible. More than \$2 million in funding has been provided by the N.C. General Assembly, U.S. Congress through the Environmental Protection Agency, the N.C. Clean Water Management Trust Fund and the Rural Center Board of Directors. Directors of North Carolina's regional Councils of Government have played a critical role as liaisons with local governments and in convening informational meetings. An advisory committee representing business, agriculture, economic development, environmental protection, and national, state, and local governments has provided oversight. A separate technical committee has provided advice on water resources, law, geographic information systems and government operations.

WHAT WE'VE LEARNED . . .

Based on research conducted through the Water 2030 Initiative, the Rural Center has published three reports on its findings. These include: "Impact of the 1998 Clean Water Bonds," "Trends in Water and Sewer Financing," and "Water, Sewer and Stormwater Capital Needs." A fourth report on water supply and demands through 2030 will be published in March 2006. Following is a brief synopsis of the findings in those reports.

N.C. communities benefited significantly from the 1998 Clean Water Bonds.

In 1998, North Carolina voters approved \$800 million in bonds to finance critical water and sewer projects across the state. These funds supported 1,103 projects in 97 counties that

- Accounted for 30 percent of all state and federal water and sewer investments in 1995-2005.
- Created or retained 42,000 jobs, primarily in rural, economically distressed areas.
- Corrected major regulatory violations in 97 communities.
- Addressed failing septic systems and contaminated wells in 59 counties.
- Resulted in 50 communities receiving sewer service for the first time.
- Encouraged regionalization: 9 of 10 bond dollars went toward regional utility systems.
- Encouraged planning: 140 communities created capital improvement plans.
- Encouraged eco-friendly practices: 122 projects included water reuse and 324 implemented other conservation measures.

Financing water and sewer projects is becoming increasingly difficult.

The Rural Center has tracked annual financing of water and sewer projects statewide for the years 1995-2005. The following trends have emerged:

- Private market loans account for 70 percent of water and sewer financing in the state.
- Because of low bond ratings, more than 60 percent of local governments do not qualify for loan programs.
- The U.S. Environmental Protection Agency's role in infrastructure financing is declining. It no longer provides grants and its loan programs are being reduced.
- The U.S. Department of Agriculture has also reduced the amount of grant funds for water and sewer. In 2006, USDA will operate with the smallest grant fund in years.
- The State of North Carolina provided nearly 80 percent of all water and sewer grants in 1995-2005. These grants included Clean Water Bonds, which are now depleted.

North Carolina's water, sewer and stormwater capital needs are mounting.

The Rural Center, through the Water 2030 Initiative, has created a detailed analysis of state water, sewer and stormwater systems statewide. This analysis has revealed that:

- North Carolina's public water, sewer and stormwater utilities will require investments totaling \$16.63 billion to keep pace with necessary improvements and population growth over the next 25 years.
- These utilities will require \$6.85 billion in investments within the next five years.
- By 2010, the number of people served by North Carolina's public sewer systems will grow by 2.9 percent each year – nearly double the rate of overall population growth.
- By 2030, North Carolina's public water systems are projected to serve 9.8 million people, 70 percent more than today.
- Most water and sewer systems in North Carolina are small, and many are located in economically distressed areas. Yet, monthly bills are often twice as high for customers in small systems as for customers in larger systems.

Population growth will place major demands on N.C.'s water resources.

As part of the Water 2030 Initiative, the Rural Center has conducted an extensive examination of the state's water resources as a foundation for future management. The examination reveals that:

- In North Carolina the majority of water use is, and will be, driven by people. About 70 percent of water use in 2005 is attributed to residential and commercial use, either from public systems or private wells. Agricultural, industrial and mining water use accounts for the remaining 30 percent.
- The population is expected to grow from 8.5 million in 2004 to 12 million in 2030. Water consumption is expected to increase from 241 billion gallons per year for all households to 335 billion gallons if consumption continues on its current path.
- Water is most plentiful in southwestern North Carolina, where annual rainfall averages 90 inches. In contrast, in many of the state's highest growth areas – most notably in the Piedmont and Central Coastal Plain – rainfall averages only 45-60 inches per year and water availability is less.
- With more people comes more pollution. In spite of tremendous progress to improve water quality in North Carolina, continued population and economic growth will place additional pressure on water quality, further reducing the quantity of water available for use. Some surface waters in North Carolina are considered unsafe for drinking water supplies and recreation. The state has more than 700 river segments, totaling nearly 3,000 miles, which are considered "impaired" by pollutants.

Historically a water-rich state, North Carolina is now confronting serious water challenges brought on by a growing population and an expanding economy. In contrast to some states in the U.S. and other countries across the globe, North Carolina is not yet in full-blown crisis. Leaders and citizens still have the opportunity to engage in open dialogue about our water resources, to address urgent issues regarding quality and availability, and to make decisions to ensure that North Carolinians in all parts of the state have access to clean water for years to come.

The following recommendations have emerged from the study of North Carolina water resources conducted by the Rural Center and its partners during the last two years. The center believes there is no matter of greater importance to quality of life or job growth in North Carolina than the judicious use of our water resources, and it encourages North Carolina leaders to take action on these recommendations.

Fund critical water, sewer and stormwater capital needs.

The 1998 Clean Water Bonds resulted in more than 1,100 water and sewer projects that affected 42,000 jobs and had significant impact on human health and environmental well-being. With the bond funds now depleted, the state faces nearly \$7 billion in capital needs by 2010. We therefore recommend that the North Carolina General Assembly enact a \$1 billion bond bill in the 2006 session to fund construction and repair of urgently needed water, sewer and stormwater facilities. The bill should place special focus on the funding challenges of economically distressed communities in both rural and urban areas.

Activate the State Water Infrastructure Commission.

In 2005, the N.C. General Assembly established within the Governor's Office the State Water Infrastructure Commission, composed of North Carolina's foremost leadership in finance, public infrastructure and water resources. The purpose of the commission is to address the state's long-term water infrastructure needs and to develop a visionary plan for sustained funding of water, sewer and stormwater system improvements. We recommend that remaining appointments be made to the commission and that the commission begin its work in 2006.

Create a permanent funding source for water, sewer and stormwater improvements.

North Carolina's public water, sewer and stormwater utilities will require investments totaling \$16.6 billion to keep pace with necessary improvements and population growth over the next 25 years. To ensure that North Carolina can support economic growth, protect human health and preserve its water resources for the future, we recommend that the State Water Infrastructure Commission join with other state and local leaders to develop a permanent revenue source to address water, sewer and stormwater improvements.

Improve operation and management of water, sewer and stormwater systems.

Many existing systems in North Carolina are not operating at full efficiency. We therefore recommend that a statewide campaign be launched to promote substantial improvements in the operation and management of systems that can be demonstrated to extend the useful life of equipment, reduce operating costs, increase efficiency and decrease demands on the state's water resources. Toward that end, we encourage water professionals and educational institutions to partner in expanding opportunities for operator education and training. Improvement efforts should promote use of the International Standards for System Audits that identify system improvements most likely to yield the greatest return for investment.

Ensure that rate structures are soundly developed and fair to citizens and operators.

The rates we charge for water-related services are a primary indicator of the value we place on our water resources. Rates for water, sewer and stormwater services should include amounts needed for sound operation and maintenance of the systems and for future capital improvements. Rates should also account for any limits on the availability of water in the jurisdiction in which they are charged. To expand local government understanding of rate structures and rate setting, we recommend that North Carolina's professional organizations join in sponsoring a series of clinics and conferences. These organizations should include, among others, the North Carolina League of Municipalities, the N.C. Association of County Commissioners, the UNC-Environmental Finance Center, the American Water Works Association, the Local Government Commission and the Rural Water Association.

Address competition for water resources within North Carolina and with other states.

North Carolina's greatest population growth is taking place in areas with limited water resources. We must address the increasing demands that this population growth puts on state water resources and develop both interstate and intrastate management strategies that deal with competition for, and future allocation of, water resources. We therefore recommend that North Carolina's Councils of Government conduct a series of regional workshops and conferences to engage citizens and local leaders in a discussion of growth impacts on water resources.

Strengthen environmental education programs.

There is little doubt that North Carolinians have long taken their water resources for granted. There is also little doubt that if North Carolinians are to actively engage in shaping their water future, they must have increased awareness of the value of water and of actions they can take to ensure the continued availability and quality of water in every part of the state. We therefore recommend the establishment of a state-regional-local collaboration on water education to strengthen North Carolina environmental education programs for children, youth and adults.

WATER 2030 FUNDING PARTNERS

N.C. General Assembly

U.S. Congress through the Environmental Protection Agency

N.C. Clean Water Management Trust Fund

N.C. Rural Economic Development Center Board of Directors

WATER 2030 PROJECT DIRECTOR

Jean Crews-Klein, Vice President of Business & Natural Resource Development

N.C. Rural Economic Development Center

4021 Cary Drive, Raleigh, NC 27610

919.250.4314

www.ncruralcenter.org