



December 14, 2007

Memorandum

To: Strategic Water Technology Conference Attendees

From: Bill Holman, Senior Fellow
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Subject: The Future of Water in NC: Efficiency and Other Strategies to Sustain Abundant and Clean Water

Our severe drought has reminded us of the value of water to our environment and our economy. Duke University's Nicholas Institute for Environmental Policy Solutions recently published "The Future of Water in North Carolina: Strategies for Sustaining Abundant and Clean Water." Our recommendations for greater water use efficiency and other water management strategies are summarized below.

1) Greater efficiency in water use and reuse can sustain water resources, reduce conflicts, and reduce risks during droughts. Increasing population, increased demand for water services, and more varying weather associated with global climate change will require new water policies. The greatest and most cost-effective source of 'new' water to sustain North Carolina's population, economic growth, and environment in the 21st century is water efficiency.

- Water services in the 20th century were abundant and cheap. If we want industries, institutions, businesses, and citizens to value and conserve water in the 21st century, we need to price water services accordingly. It is possible to develop a **water and wastewater rate structure** that is affordable for average users and sends a stronger price signal to large users, providing a financial incentive for conservation. University of North Carolina –CH's Environmental Finance Center (www.efc.unc.edu) is a great resource for municipalities that want to set new rates. In the short term, drought surcharges may be considered.
- **Mandatory, year-round water conservation and efficiency programs** are more effective than occasional efforts. While short-term conservation strategies rely on asking consumers to forgo or reduce uses to which they expect to return to eventually, efficiency strategies rely upon positive action to meet the same or growing needs with less water. A few examples of long-term efficiency programs include: water audits of larger industrial, institutional, and commercial customers; water system retrofits of existing buildings, including water efficient fixtures and appliances; promoting more water efficiency in new buildings; regional and statewide water conservation marketing campaigns.

- **Reuse of treated wastewater and stormwater** for non-potable drinking water purposes such as irrigation and cooling would provide an additional source of water in addition to reducing flooding, stream erosion, and protecting water quality. A regional study to identify the most cost effective opportunities for wastewater reuse could be a valuable planning tool.

The State has taken steps to ensure better water supply management during droughts and emergencies, but has not yet pursued an effort to permanently increase water use efficiency and reuse. The overall goal should be a comprehensive assessment or assessments of the potential for increased water use efficiency and water reuse in the State among public-suppliers and their customers, self-supplied domestic users, and agricultural and industrial water users.

2) Registration, measurement, and regular reporting of water use are essential to sustainable management of water resources. North Carolina should require all major users of surface and groundwater to register and report their use. The State, moreover, should compile this data into easily accessible formats and report regularly to the legislature and the public.

3) Land use decisions affect the quality and quantity of our water resources. For example, stormwater and groundwater-recharge problems stem from impervious surfaces placed with little regard to protecting surface and ground water supply and quality. And sprawling growth may commit local taxpayers to higher per-capita water and sewer maintenance costs. North Carolina should systematically integrate state and local land use and water policies and funding to ensure that our growth and land use are sustainable and do not undermine the water resources that our economy and growth depend on.

4) Green infrastructure – our forests, farms, wetlands, floodplains, natural areas and riparian buffers – is a vital economic and ecological component of our state’s long-term prosperity. In recognition of the essential services these resources provide, North Carolina should improve its prioritization and protection of green infrastructure.

5) Market-based approaches that put a dollar value on the services provided by natural resources and ecosystems (ecosystem services) have potential to improve and protect water resources. North Carolina should reevaluate and consider how to improve nutrient trading and other market-based approaches, to complement existing water quality regulations and incentive-based programs.

6) Climate change is an added challenge to sustainable water resources management. North Carolina must anticipate, plan for, and adapt to the water resource impacts of climate change.

The full report is available at www.nicholas.duke.edu/institute/waterreport.pdf. Please contact us if you have questions or need more information.