

**FURTHER STUDY OF THE ALLOCATION OF WATER RESOURCES AND THEIR
AVAILABILITY AND MAINTENANCE
IN NORTH CAROLINA**

**An Interim Report to the Environmental Review Commission
of the North Carolina General Assembly
addressing elements, issues, and methodology
to be included in the full study**

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Reason for study

S.L. 2007-518, which became law on 31 August 2007, directed the Environmental Review Commission (ERC), with the assistance of the Department of Environment and Natural Resources, to study and recommend measures to improve the allocation and availability of water resources in North Carolina, and authorized the ERC to hire outside consultants to assist with this study. The undersigned principal investigators (PIs), from the University of North Carolina and Duke University, carried out work between December 2007 and January 2009 to assist with the study, and submitted a final report to the ERC in January 2009. Several members of the General Assembly sponsored legislation to enact the recommendations of the PIs. The ERC determined that it is necessary to conduct further study of the allocation of water resources and their availability and maintenance in the State, with a specific focus on the information needs and processes for effective water allocation planning and hydrologic modeling. The PIs have accordingly offered to provide additional research and consultation, and the General Assembly has accepted their offer. Contract details are still being finalized at the two universities, but in accordance with the parties' agreement, the PIs hereby submit this interim report to the ERC to explain the elements, issues and methodology they plan to use in this second phase of the water allocation study.

Scope of study

The PIs will study all matters called for under their contract, and fulfill their consulting obligations as directed by the ERC, including:

- a. How other states with statutory water allocation systems use planning processes, including local, regional and river-basin planning, and hydrologic models to inform their regulation of water withdrawals and consumption.
- b. How current limitations in hydrologic models produced by the Department of Environment and Natural Resources can be overcome to make those models useful for water allocation and planning.

- c. How current regulation of instream flows by North Carolina and its neighboring states is implemented and reviewed.
- d. Be available at the request of the Co-chairs of the ERC and the Commission Counsel for the ERC for discussion with parties interested in the water allocation study.

They will deliver a draft final report to the ERC no later than December 1, 2010, and a final report no later than January 15, 2011. The final report will take into account any comment from the Co-chairs or Counsel of the ERC and any public comment received through December 15, 2010. The final report will provide information and outline options, including the advantages and disadvantages of each option, to assist the ERC in deciding whether changes should be made in the system for allocating water resources in North Carolina.

Any extensions or modifications in the scope or time frame of this study will be made by the ERC and its staff, for whom the study is principally intended.

Input and methods

The PIs, in conjunction with ERC staff, have consulted widely with persons interested in the study. They participated in five public meetings attended by over four hundred people in December, 2007 and January, 2008, in Charlotte, Greenville, Asheville, Raleigh and Wilmington. These were meetings at which anyone interested in the study was allowed to speak. A record of the comments received and subsequent written communications was kept by legislative staff. In addition, the PIs have posted their notes of the meetings on a publicly-available website, http://sogweb.sog.unc.edu/Water/index.php/Current_events, which is part of the “water wiki” to be discussed below.¹

Since those public meetings, the PIs have been actively engaged in discussions with stakeholders from public water systems, private water systems, water users including private citizens, agricultural users, food processors and food scientists, turfgrass producers and scientists, bottlers, electric utilities, environmental public interest organizations, cities and

¹ A note on formatting: some words and phrases in this Interim Report are underlined in the printed version. This underlining indicates a hyperlink that can be followed by clicking or control+clicking in the online version of the document.

counties, state agency water managers and regulators from North Carolina, South Carolina, Georgia, Virginia, Tennessee and other states, Councils of Government, professional engineers, federal officials at the Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Department of the Interior, and scholars who study water resources from UNC and Duke, other United States universities and think tanks, and other countries including Australia, Austria, Canada, France, Germany, Great Britain, the Netherlands, Norway, and Sweden.

The PIs have also sponsored a seminar series, with co-sponsorship from the Water Resources Research Institute, that has brought and continues to bring experts on water resources to North Carolina to share ideas and stimulate discussion. The schedule and record of the seminars is available here:

http://sogweb.sog.unc.edu/Water/index.php/Water_allocation_research_seminars_%28WARS%29 .

On the basis of their own knowledge and this input, the PIs propose to carry out the study in 2010 as follows. The methods and resources needed for future, more narrowly focused research will be discussed and explained in the 2010 final report.

Other states' and interstate organizations' planning processes

The PIs will summarize and evaluate planning processes, the use of hydrologic models, and their relationship to water withdrawal permitting in the southeastern United States, including Florida, along with summaries and evaluation of water resource planning in several interstate organizations such as the Delaware, Susquehanna and Potomac river commissions.

Hydrologic models in North Carolina

North Carolina's Division of Water Resources, within the Department of Environment and Natural Resources, has already begun building models of water availability using projections based on local water supply plans. In addition, the electric power utilities and certain water suppliers in the state have built their own models for water availability. The PIs will summarize and assess the ability of these models to provide reasonably accurate bases for legislative decisions about where to focus efforts on water allocation, and to provide local water providers and users with the assurances they need about water supplies.

Instream flows

A critical element of water planning in North Carolina, as identified by the PIs in the first phase of the water allocation study, is how the state will decide the amounts and timing of water to keep in streams and reservoirs to support instream uses, such as recreation and aquatic

habitat. The Pls will summarize and provide advice on North Carolina's emerging approach to instream flow regulation, and compare it to other states.

The Water Wiki

The Pls have set up a unique website, called the "water wiki," where they compile their findings. The unique thing about the website is that anyone can quickly see, comment on and even change the information on the website. However, the site keeps track of changes, and alerts anyone who is interested when anything on a given web page within the site is changed. Changes are easily reverted. So the water wiki can serve as a collaborative space for discussion, debate and hopefully consensus on the many controversial aspects of water allocation and management. The portal for the water wiki is:

<http://water.unc.edu>

and the links embedded in this document point to particular wiki pages. As of April 28, 2010, there had been 5,012 edits of 890 pages in 214 articles and there were 387 registered users of the water wiki. One hundred six of its pages had been viewed over 10,000 times.

The study team

The Pls will continue to draw on the strong resources of their respective academic institutions for expertise and assistance with the water resource information needs of the ERC during the study period.