

# Roanoke River Basin Bi-State Commission Water Allocation Ad Hoc Committee

## March 2010 Status Report

<b>Ad Hoc Committee Members</b>	
<b>Name</b>	<b>Organization</b>
<i>Committee Member</i>	
Gene Adesso	Roanoke River Basin Association
Bill Cox	Civil and Environmental Engineering, Virginia Tech.
<b>Tom Fransen</b> (Co-Chair)	Division of Water Resources, NC DENR
Bill Holman	Nicholas Institute, Duke University
<b>Scott Kudlas</b> (Co-Chair)	Office of Water Supply Planning, VA DEQ
Brian McCrodden	HydroLogics, Inc.
Rick Seekins	Kerr-Tar Regional COG
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## INTRODUCTION

The Roanoke River Basin Bi-State Commission at their March 27, 2009 meeting formed the Water Allocation Ad Hoc Committee. The ad hoc committee's assignment is to develop a draft document of understanding that can be used by the States of Virginia and North Carolina, and the U.S. Army of Engineers (USACE) regarding the allocation and withdrawals of water from the John H. Kerr Reservoir (Kerr). Kerr is a federally authorized project built and managed by the USACE.

The committee has met several times and is using a wiki<sup>1</sup> to collaborate on the development of the draft agreement and to share reference materials.

## SUMMARY OF JOHN H. KERR STORAGE

Kerr was not authorized with a water supply storage pool. The use of Kerr for water supply requires a reallocation of the power pool. Based on the Water Supply Act of 1958 (WSA) up to 50,000 ac-ft can be reallocated to water supply. To be able to reallocate more than 50,000 ac-ft would require Congress to change the project's authorization. Currently 21,379 ac-ft of the 50,000 ac-ft is allocated to 4 water users. The following table is a summary of the current water supply users.

**Summary John H. Kerr Water Supply Storage**

	City of Clarksville	Old Burlington Industries Intake	Kerr Lake Regional WS	City of Virginia Beach <sup>2</sup>	VA Dept of Corrections	Mecklenburg Cogeneration
% Conservation Pool Between 268 & 300 ft-msl			1.050%	1.066%	0.0024%	0.063%
Estimated Storage ac-ft			10,291	10,447	24	617
Current estimated yield mgd	Avg Usage < 0.3	Avg Usage ~ 4	20	20.3	0.047	1.2
Contract	No Agreement	No Agreement	3/17/2006	1/13/1984	1/25/1989	6/5/1991

The USACE estimated firm yield for the 50,000 ac-ft is 97.2 mgd based on the drought record (2002). The USACE is working with the allocation holders whose contracts were negotiated prior to 2002 to see if their contracts need to be adjusted because the 2002 drought lowered the yield estimates that the contracts were based on.

If someone was to purchase the remaining 28,621 ac-ft the estimated FY2010 cost is \$11,567,177.15 with an annual operations and maintenance (O&M) cost of \$42,931.50<sup>3</sup>. The USACE estimated firm yield for the remaining unallocated storage is 55.6 mgd

<sup>1</sup> A wiki is a collaborative website whose content can be edited by anyone who has access to it.

<sup>2</sup> The storage is based on a 60 mgd 90 day seasonal demand.

<sup>3</sup> The annual O&M cost vary annually but will likely rise overtime.

## **DRAFT AGREEMENT**

The committee started by developing a set of basic allocation principles that became parts I Purpose and II Declaration of Policy in the draft agreement. A set of five alternative allocation approaches were developed for the Commission's consideration. The following is the start of a draft agreement which will be completed based on the Commission's guidance as to which alternative they want the committee to expand upon.

### **PART I. PURPOSES**

The purposes of this agreement are:

1. For the State of North Carolina and the Commonwealth of Virginia to provide the U.S. Army of Engineers a set of guidelines for allocation of John H. Kerr water supply allocations.
2. To preserve and protect the water resources of the Roanoke River Basin.
3. To facilitate integrated comprehensive water resources planning of the Roanoke River Basin.

### **PART II. DECLARATION OF POLICY**

The following principles constitute the policy that shall govern the allocation of John H. Kerr water supply storage.

1. Allocations/reallocations will enhance public health, safety, and welfare by fostering efficient and sustainable use of water in satisfaction of economic, environmental, and other social goals; factors that contribute to this end include:
  - Stimulation of economic growth
  - Protection of water quality
  - Protection of ecological integrity and diversity
  - Encouragement of water conservation
  - Minimization of drought impacts on all water uses
  - Minimization of conflict among competing water uses
  - Maintenance of an appropriate balance between instream and offstream water uses
  - Protection of property values and water infrastructure investment
2. The States and U.S. Army Corps of Engineers shall coordinate the planning and decisions pertaining to water allocation, and shall adapt and update plans and hydrologic models to ensure that actual and projected water consumption in the basin plus the water needed for instream uses does not exceed the water supply. The allocations shall be made so as to conserve the waters of the basin through suitable policies and by encouraging private efforts to conserve water and avoid waste.
3. The States and U.S. Army Corps of Engineers shall protect the public interest in the waters of the basin by providing an orderly strategy to allocate available water efficiently and equitably in times of water shortage or water emergency.
4. No person using the waters of the basin shall cause unreasonable injury to other water uses made pursuant to valid water rights, regardless of whether the injury results from the quality or the quantity impacts of the activity causing the injury.
5. Uses of the waters of the basin on nonriparian or nonoverlying land are lawful and entitled to equal consideration with uses on riparian or overlying land in any administrative or judicial proceeding relating to the allocation, withdrawal, or use of water or to the modification of a water right. Nothing in this agreement shall be construed to authorize access to the waters of the basin by a person seeking to make a nonriparian or nonoverlying use apart from access lawfully available to that person.
6. The reasonably foreseeable future water needs of users with their service areas located primarily outside the Roanoke River Basin are subordinate to the reasonably foreseeable future water needs of users with their service areas located primarily in the Roanoke River Basin. The States shall protect the reasonable needs of the basin of origin through the regulation of withdrawals.

### **PART III. DEFINITIONS OF TERMS**

*This section will be completed after Part IV is finished.*

### **PART IV. ALLOCATION OF JOHN H. KERR WATER SUPPLY STORAGE**

*The Committee will draft this section of the agreement based on the guidance of the Commission.*

### **PART V. STATE AND FEDERAL RIGHTS**

Nothing in this agreement shall be deemed to impair or affect the existing rights or powers of the State of North Carolina, the Commonwealth of Virginia, and the United States of America or its agencies to plan, regulate, and control and use of those waters of the Roanoke River Basin.

## **ALTERNATIVES FOR ALLOCATING JOHN H. KERR WATER SUPPLY STORAGE**

The following are five alternative strategies developed by the Water Allocation Ad Hoc Committee for the commission's consideration.

### **1. Status Quo - USACE's process is adequate and no changes are needed.**

The current allocation of storage to municipal and industrial M&I water supply in reservoirs owned and operated by the USACE is controlled primarily by the Water Supply Act of 1958 (WSA). The WSA provides that M&I storage can be included in project design as an authorized purpose under specified conditions and allows limited reallocation to M&I purposes from other authorized purposes. The principal condition associated with inclusion of M&I storage in the original project design is that use of such storage requires contractual arrangements for repayment of costs associated with the M&I purpose by the water user. Reallocation of storage to M&I water supply is constrained by the condition that such reallocation "... which would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes[,] shall be made only upon the approval of Congress" (WSA sec. 301). Thus, only relatively minor reallocations can be implemented by USACE without Congressional approval. The WSA does not provide guidelines for determining when a serious effect or major change has occurred. USACE regulations allow for reallocation without Congressional approval if the total project reallocation to water supply storage does not exceed the lesser of 15% of total project storage capacity or 50, 000 acre feet. Recent court rulings have reflected a more restricted view of USACE authority to reallocate storage without Congressional approval.

Since USACE decisions about use of reservoir storage space are not intended to resolve water rights issues associated with use of the water and do not constitute an allocation of water, deliberations concerning a request for assignment of storage rights primarily focus on satisfaction of requirements for repayment and, in the case of a reallocation of storage, determination of whether Congressional approval is needed. The absence of water allocation authority precludes a comprehensive approach that attempts to anticipate and manage basinwide water supply conflicts and issues. While some consideration is given to environmental and broad water supply issues, they tend to be secondary to narrower issues of project management consistent with federal mission and mandates. This approach tends to

treat allocation on a "first come, first served basis" due to its more limited perspective and the lack of a principal federal role in water allocation.

This option will not impair or affect the existing water management authorities for either the State of North Carolina or the Commonwealth of Virginia.

*Pros*

1. Requires no new program development or additional resources.

*Cons*

1. Offers potential for incompatibility between federal storage allocation decisions and state water supply plans and management programs.
  2. This approach provides for less certainty on how much water is and will be available for water supply. In large part because of Atlanta's water supply problems and the USACE's handling of Lake Lanier it is likely the WSA will be modified or replaced and if that occurs, the 50,000 ac-ft assumption is probably no longer valid.
2. **Modified Status Quo** - Let the USACE handle the allocation with some guidelines provided by States.

The current approach, with relatively modest modification, could provide a framework for a more comprehensive approach to water supply management that better integrates allocation of reservoir storage into broader water supply management programs of the affected states. The primary mechanism for improved coordination between federal reservoir managers and state water supply management would be a joint federal/state workshop for identification and analysis of related issues associated with proposals for new or expanded allocations of reservoir storage for M&I purposes. Such proceedings could inform federal decision makers about potential water supply conflicts between proposed storage allocations and alternative water development plans in the affected area. The expanded procedure would allow earlier identification of future conflicts and facilitate development of cost effective solutions. Such an approach could be structured in various ways, but the limitations of a single meeting for analyzing complex issues and developing appropriate solutions suggest that a two-stage format would be advantageous. The first meeting would focus on stakeholder and issue identification and would involve establishment of groups of interested parties to further analyze major issues and develop alternative strategies for resolution following the meeting. These recommendations would provide a basis for a second meeting where consensus would be sought on the best way forward. To avoid lengthy delays, the second meeting should be scheduled within a relatively short time of the initial meeting. The final meeting would not necessarily result in agreement on the appropriate course of action; unresolved issues would likely remain to be addressed through currently existing mechanisms. But the fact that the process provides an opportunity for a more comprehensive view of water supply issues improves the information base and should facilitate subsequent decisions.

This option will not impair or affect the existing water management authorities for either the State of North Carolina or the Commonwealth of Virginia.

*Pros*

1. Increases coordination between federal water storage allocation and overall state water supply management.
2. Requires less disruption and fewer additional resources than approaches adopting more substantial changes to existing storage allocation procedures.
3. If both States agree the USACE would be able to implement today.

*Cons*

1. Requires program development and additional resources.
2. May increase the time needed for allocation decisions.
3. This approach provides for less certainty on how much water is and will be available for water supply. In large part because of Atlanta's water supply problems and the USACE's handling of Lake Lanier it is likely the WSA will be modified or replaced and if that occurs, the 50,000 ac-ft assumption is probably no longer valid.

**3. The States purchase the remaining storage and handle allocations.**

As stated earlier, the current allocation of storage to M&I water supply in reservoirs owned and operated by the USACE and the allocations are based primarily by the WSA. The USACE and the WSA do not provide for a good way to include one of this agreement's key policy statements - The States and USACE shall coordinate the planning and decisions pertaining to water allocation, and shall adapt and update plans and hydrologic models to ensure that actual and projected water consumption in the basin plus the water needed for instream uses does not exceed the water supply.

An allocation approach similar to the current Jordan Lake water supply allocation process would provide for a model on how to allocate water from Kerr based on the needs of water users in the basin. To be able to implement this approach both States will need purchase their agreed-upon share of the remaining unallocated water supply storage in Kerr. Each State would also have to pass the necessary statutory authorities and administrative rules to assign storage and receive repayment from local governments for their allocation. The statutory authorities would be based on principles and policies of this agreement. This approach will work best if it includes the development of a bi-state basin wide water supply plan.

If the Kerr allocation process were to be similar to the Jordan process the basic steps for an allocation would be:

- A local government would submit a request for a new or increased allocation. This typically only occurs once every 5 to 8 years.
- The States would hold a joint information meeting announcing the start of an allocation process.
- The States would work with potential applicants and other water users in the basin to update the basin hydrologic model and water supply plan.
- The applicants would submit their allocation request requested based on the needs identified in the basin water supply plan.

- Each State would make allocations for requests from applicants in their State based on their remaining unallocated water guided by the basin water supply plan.

As part of the allocation the States will review existing allocation holders to determine if adjustments are needed for the current allocations. Based on NC's experiences with Jordan Lake it takes about 2 years to update the basin water supply plan and process allocation applications, if there is no interbasin transfer involved. That is compared to the USACE's current process that takes 2 or more years.

This option will not impair or affect the existing water management authorities for either the State of North Carolina or the Commonwealth of Virginia.

#### *Pros*

1. One of the advantages of this approach are it provides a mechanism to base allocations on the long-range needs and protects the instream needs by using updated models and planning.
2. The contracts between the States and allocation holders provide for an opportunity to include additional water efficiency and drought protection measures.
3. Also, this approach provides for more certainty on how much water is and will be available for water supply. In large part because of Atlanta's water supply problems and the USACE's handling of Lake Lanier it is likely the WSA will be modified or replaced and if that occurs, the 50,000 ac-ft assumption is probably no longer valid.

#### *Cons*

1. This approach is expensive and lengthy, both to setup and process allocation applications. For both States find funds to finance their share of the \$11,567,177.15 and pass the necessary statutory authorities will likely take at least 2 years.

#### **4. Interstate Compact.**

The interstate compact scenario would entail the development of a compact between the State of North Carolina, the Commonwealth of Virginia and potentially the Federal Government outlining a process for management of the Roanoke River Basin's water resources, including the allocation of water storage in Kerr Reservoir. This scenario could incorporate the purchase of the remaining storage allocation by the states. The compact would need to meet federal requirements, be ratified by both states, and would likely result in the establishment of a Commission with staff that would be funded at least partially by the signatories. Compacts in other watersheds have resulted in the creation of Commissions with a range of responsibilities. For example, the Interstate Commission on the Potomac River Basin serves a largely planning role while the Susquehanna River Basin Commission and the Delaware River Basin Commission each hold regulatory authorities.

The committee was tasked with making recommendations for water allocations from Kerr Reservoir. Unlike the other alternatives reviewed, this option is broader and will address basinwide water management issues.

This option could impact the existing water management authorities for either the State of North Carolina or the Commonwealth of Virginia.

*Pros*

1. A commission established by an interstate compact would have authority to assist in resource management in both states.
2. Cooperation between the states and efficiencies may be enhanced by the process of the creation of the compact.
3. This scenario may allow for the incorporation of principles limiting water transferred outside of the basin (pro for some, con for others).

*Cons*

1. The establishment and approval of the compact would likely be a lengthy process.
2. The establishment of a commission would result in additional costs and staff during a tough budget climate.

**5. Identify a third party to purchase the allocation.**

The third party purchase scenario would entail the purchase of all or a significant portion of the remaining Kerr Lake storage allocation by an entity other than the State of North Carolina or the Commonwealth of Virginia. The most likely candidate for such a purchase would be a group of municipalities. The purchasing entity would be responsible for determining the process of managing the storage and allocating and distributing the purchased storage to its members or other interested parties. While the states could play an advisory role in the development of the process for managing the allocation, the purchasing entity would ultimately be responsible. Under this scenario, applicable water withdrawal permitting requirements of the respective states would remain applicable.

An analogous arrangement is the Cooperative Operations for Water Supply on the Potomac Section (CO-OP) of the Interstate Commission on the Potomac River Basin (ICPRB). CO-OP was created by an agreement between ICPRB and the three major Washington, DC area water utilities. CO-OP is responsible for coordinating the water resources of the three utilities as one entity during periods of low flow in order to maximize efficiency. Each utility gives up some autonomy for the benefits of improved operations and reliability during a drought.

This option will not impair or affect the existing water management authorities for either the State of North Carolina or the Commonwealth of Virginia.

*Pros*

1. Cooperation between the actual users of the water would be enhanced and may result in improved efficiencies.
2. The likelihood of "water grabs" may be reduced if the members of the purchasing entity establish a mutually beneficial management agreement.

*Cons*

1. This scenario could result in the transfer of significant portions of the remaining allocation to areas outside of the Roanoke River drainage basin.
2. The states role in determining the distribution of the allocation could be limited.

**NEXT STEPS**

The Committee is asking the Commission for guidance on two parts of the draft agreement. First has the Committee in *PART I PURPOSE* and *PART II DECLARATION OF POLICY* satisfactorily included the basic principles for allocating Kerr water supply storage? Second based on the guidance of the Commission the Committee will complete a draft agreement based on the Commission's preferred allocation alternative.