

SAVANNAH RIVER BASIN COMPREHENSIVE WATER RESOURCES MANAGEMENT STUDY

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REFERENCE: *Proceedings of the 1999 Georgia Water Resources Conference*, held March 30-31, 1999, at The University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia.

Abstract. A comprehensive water resources management study has been authorized by the 1996 Water Resources Development Act (WRDA) directing the U.S. Army Corps of Engineers to develop an updated plan addressing current and future needs in the basin, examine reallocation of storage, and to develop a better management structure to deal with basin water resources issues. Funds for the Reconnaissance Phase have been appropriated and development of a scope of work for the feasibility phase initiated. Working in partnership with the states of Georgia and South Carolina, the Reconnaissance Report and a Project Study Plan for the Feasibility Phase will be completed by July 1999.

PAST BASIN EFFORTS

Background on Prior Basin Assessments

The Savannah District, U.S. Army Corps of Engineers, completed an assessment of the water-related resources needs of the Savannah River Basin (Corps of Engineers, 1990). The major conclusion and recommendation of that study was that a comprehensive survey should be conducted on how to meet various needs through reallocating portions of storage in the multipurpose projects.

Throughout the past 100 years, the Corps of Engineers has conducted a number of studies on the water resources needs of the Savannah River Basin. In February 1987, the Corps of Engineers prepared a reconnaissance level report (Corps of Engineers, 1987), assessing the need for reallocation of storage at the three Federal reservoirs--J. Strom Thurmond, Richard B. Russell, and Hartwell. At that time, there was no identified need for specific reallocation studies.

EPA Watershed Project

In November 1993, the Environmental Protection Agency (EPA) Region IV initiated a watershed approach effort for the Savannah River Basin. This effort is still ongoing and involves a number of basin stakeholders. The Project's direction is established by the Policy Committee. The Project in its development included several other committees

including the Management Committee and six Resource Management Committees - Water Quality, Fish & Wildlife, Recreation & Cultural Resources, Water Quantity/Navigation/Hydropower, Land Use & Wetlands, and Industry & Economic Development. Each Resource Committee developed their Baseline Assessment of their assigned resource; these Baseline Assessments can be found in Volume 2 of the Management Committee's Report (EPA, 1995).

The Policy Committee is working with various action teams to develop and implement a Watershed Strategy (EPA, 1997) to address the first 26 priority issues of the basin that were identified by the Management Committee (EPA, 1995). At least nine of these issues have been linked to the Corps Comprehensive Study as a possible means by which to address and hopefully resolve these issues.

THE COMPREHENSIVE STUDY

Early Coordination

We have been working with various groups and agencies concerning the need for a comprehensive assessment of the water resources needs of the basin and the abilities of our Federal projects to help satisfy these needs. Our biggest challenge is doing this during "peacetime," before the growing conflicts result in a "Water War," such as that being waged in the Apalachicola-Chattahoochee-Flint/Alabama-Coosa-Tallapoosa river basins on the Georgia-Alabama-Florida borders. Along this line, in August of 1992, we sponsored a Savannah River Basin Issues Workshop in Augusta, Georgia, during which we invited the major stakeholders of the basin to identify what they considered the most pressing issues of the basin. To no one's surprise, the major issues concerned water supply, water quality, and basin management. Since July 1993, the Chief of Planning Division has met quarterly with the directors of water resources planning agencies in the State of Georgia. During these meetings, agreement has been reached on the need to pursue such a study. Since 1993, the District has participated

in annual joint Corps/State of South Carolina meetings, where (along with other issues) the need for a comprehensive study of the Savannah River Basin was discussed.

New Study Authority

Section 414 of the 1996 WRDA authorized a comprehensive study of the Savannah River Basin. Specifically the authorization states:

"(a) In General.--The Secretary shall conduct a comprehensive study to address the current and future needs for flood damage prevention and reduction, water supply, and other related water resources needs in the Savannah River Basin.

(b) Scope.--The scope of the study shall be limited to an analysis of water resources issues that fall within the traditional civil works mission of the Corps of Engineers.

(c) Coordination.--Notwithstanding sub-section (b), the Secretary shall ensure that the study is coordinated with the Environmental Protection Agency and the ongoing watershed study of the Savannah River Basin by the Agency." We are working with our potential study cost sharing partners, the States of Georgia and South Carolina, to further develop the justification and need for the study and define its scope. We have met with both states and have received letters of support for the study from Georgia (Feb 97) and South Carolina (Jan 97). Together, we initiated a Reconnaissance study in February 1998. This phase, which is Federally funded, has two main actions to determine. First, Identification of the pertinent water resources issues in the basin that fall within the direction of the study authority and are within the Federal Interest to resolve in cooperation with the state partners. Second, the necessary tasks to study and resolve these issues are developed into a Project Study Plan which will be used as the bases of the feasibility Study.

Basin Water Issues

Recognizing that a number of water resources issues have been identified through other efforts, the Reconnaissance Study is concentrating on re-validating these issues and developing detailed study plans for them. Table 1 summarizes most of these. A number of these issues stem from the successive droughts of the eighties which brought about new concerns over water usage of the basin. One area of concern raised was need for additional water supply. The continued, drought-induced drawdown prompted concerns about providing more stable pool levels for recreation, while causing heightened concerns over water quality in the lower Savannah River. Hydropower customers faced curtailment of power production.

The present project operations represent a balance of storages and releases which provide maximum hydropower generation while maintaining conservation pool levels and

providing releases which meet downstream water supply and water quality needs. However, there are additional concerns we must plan to meet, including, the need for additional water supply storage for upper basin and developing downstream users, for boosting low flows during droughts, and for generating "flushing" flows for the lower river basin wetlands and bottomland hardwoods. With the redefining of the 100-year flood discharge level at Augusta, the use of flood control storage in the projects needs to be revisited.

Table 1. Summary of Basin Water Issues

Upper Basin Needs vs. Downstream Needs

Water Supply Allocations

- Lake Levels for Recreation/Commercial Activities
- In-Lake reallocations
- Downstream In-River Allocations
- Groundwater Cap/Future Coastal Supply
- Future Demands
- Inter-basin Transfers

Flood Control

- Flood Control Below J. Strom Thurmond Lake
- Storage Reduction
- Flood Plain Mitigation

Hydropower

- Maintain or Modify Current Levels
- Regional Affects of Reallocations

Water Quality (Flows)

- Discharge Permits and Droughts
- Saltwater Intrusion
- DO Impacts in Savannah Harbor
- Impacts to Lake WQ from Development

Habitat

- Estuarine Issues
- Instream Flow Requirements
- Lake Issues
- Wetland Impacts

Aquatic Plant Control

- Instream
- In Lake

Recreation

- Lake Levels for Recreation/Commercial Activities
- Regional Economic Value of Recreation

Relationship with EPA Watershed Study

We view the two efforts - the SRB Comprehensive Study and the EPA Watershed Study - as complementary. An important point to remember in the watershed approach is it depends on existing agency programs for funding the major efforts to be taken. During the initiation of the Comprehensive Study, the past participation in the Watershed Study accomplished much of the early issue definition needed for the Comprehensive Study. Once into the feasibility phase,

the Comprehensive Study will be a major tool to use in helping to accomplishing a portion of the Watershed Study's goals and objectives.

The authorization for the Savannah River Basin Comprehensive Study also requires that the results be coordinated with the EPA Watershed Study. The Comprehensive Study will be a major tool to accomplish a portion of the Watershed Study's goals and objectives. The Comprehensive Study will the EPA Watershed Project as a major means to seek input into the study.

Current Direction

The District initiated the Reconnaissance phase in February 1998 and is coordinating with the various state and Federal agencies to develop a suitable basin scope of studies to address the above issues, as well as new ones that may surface. This scope is to be completed by July 1999. Its primary purpose will be to identify the tasks that will be need to address each issue, and its associated cost and time. This information will then be put together into a Project Study Plan which will become the basis for the cost shared feasibility study. The Georgia and South Carolina Departments of Natural Resources are potentially the main cost-sharing partners for the feasibility phase.

Future Direction

The District is coordinating with the various state and Federal agencies to develop a suitable basin scope of studies for the feasibility phase of the study. Participating agencies will then explore their own budget proposals with a view to supporting activities which would compliment a comprehensive basin study. At this point we anticipate the participation of Corps of Engineers, EPA, U.S. Geological Survey, Natural Resources Conservation Service, Fish & Wildlife Service, and the Georgia and South Carolina Departments of Natural Resources at a minimum.

At this point, we anticipate receiving funds in the FY 2000 budget request to initiate the feasibility phase. The length and cost of this phase will depend on the detailed scope of studies agreed to in the reconnaissance report and Plan of Study. Drawing upon other recent comprehensive basin planning studies as a comparison given what we do know about the

types of studies needed for the SRB, a four year, \$5-8 million dollar effort will likely be required.

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