

A COMPREHENSIVE WATER RESOURCES DEVELOPMENT STUDY FOR THE SAVANNAH RIVER BASIN

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Abstract. A comprehensive water resources 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 Savannah River basin, to examine reallocation of storage, and to develop a better management structure to deal with basin water resources issues. To date the need for a study has been discussed among various federal and state agencies, and the states are taking action to obtain study authority from the U.S. Congress.

BASIN

Background on 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 report's major conclusion and recommendation was that a comprehensive survey should be conducted to determine how to meet various needs through reallocating portions of storage in the multipurpose reservoir 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.

Basin Water Issues

The successive droughts of the eighties have since prompted new concerns over water usage of the basin. Additional water supply requests, not anticipated in the earlier study, have occurred. The continued, drought-induced drawdown prompted concerns about providing more stable pool levels for recreation. Furthermore, the prolonged nature of this drought cycle has caused heightened concerns over water quality in the lower Savannah River. Hydropower customers are concerned over the curtailment of power production to accommodate what they feel are unauthorized or nonpaying purposes.

The Savannah District is accomplishing a number of actions within existing authority to be responsive to current pressures. Our 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, while given this operating mode, we know from various public forums there are additional concerns we must plan to meet. These include, among others, 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, we also know that we need to revisit the use of flood control storage in the projects.

New Initiatives Under Existing Authority

There are several new initiatives being taken by the Savannah District to respond to current water resources management issues in the Savannah River Basin. These are being done within existing authority to be responsive to "hot spots," while we work with the states to develop and authorize a comprehensive basin management study to fully address all basin water management issues in the basin. The major new initiatives include:

Hartwell Major Rehab (Hydropower) - A plan to rehabilitate the power units at Hartwell Dam began in FY 96.

Thurmond Major Rehab (Hydropower) - A plan to rehabilitate the power units at Thurmond with a new construction start was initiated in FY 97. The current design process is to include measures to increase DO in the turbine operations without loss in efficiency.

Savannah River Flood Damage Reassessment - A 3-year study addressing the hydrologic changes in the basin to determine whether any changes in the reservoirs' flood control operations are warranted and appropriate, and whether additional funds can be made available.

Lower Savannah River Environmental Restoration Study - A project to restore previously constructed navigation cut-offs for the purpose of environmental restoration was authorized in the WRDA 96. Scheduled for a construction start in FY 99, this project will restore flows in cut-off bend #3 and restore flow to Mill and Bear Creeks.

Drought Management Plan Update - Efforts are made to update and coordinate the current Savannah River Drought

Management Plan to reflect new information being surfaced during operations.

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 subsection (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 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 are working towards obtaining funding for a study.

The states are working with their Congressional delegation to secure study funds as a Fiscal Year (FY) 1998 new budget start. This would enable us to start a Reconnaissance study as early as January 1998.

Relationship with EPA Watershed Study

In November 1993, the Environmental Protection Agency (EPA) Region IV initiated a watershed approach effort for the Savannah River Basin. This effort, still in its formulative stages, is setting as its goal:

"To manage the Savannah River basin using comprehensive management to conserve, restore, enhance, and protect its ecosystems, especially aquatic ecosystems, in a way that allows the balancing of multiple uses."

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. As Georgia, South Carolina, and the Corps work to obtain funding for the Comprehensive Study, participation in the Watershed Study will accomplish much of the early issue definition needed for the Comprehensive Study. Once funded, the Comprehensive Study will be a major tool to use in helping to accomplish a portion of the Watershed Study's goals and objectives.

Savannah District has been fully cooperative with the EPA effort. We are participating on the study's Policy Committee. The District is also participating on the other committees of the study including the Management Committee, which we co-chair, and on all six Resource Management Committees, one of which we chair - the Recreation and Cultural Resources Committee. The six Resource committees are: Water Quality, Fish & Wildlife, Recreation & Cultural Resources, Water Quantity/Navigation/Hydropower, Land Use & Wetlands, and Industry & Economic Development.

We are currently work with various action teams to develop and implement a strategy to address the first 26 priority issues of the basin. Nine of issues have been linked to the Corps Comprehensive Study as a possible means by which to address and hopefully resolve the issue.

Future Direction

The District is coordinating with the various state and Federal agencies to develop a suitable basin scope of studies. 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 would anticipate receiving funds in the FY 99 budget to initiate the reconnaissance phase, with the possibility of receiving funds in FY 98 by Congressional actions. The follow-on feasibility level phase could begin in the following fiscal year; its length and time would depend on the detailed scope of studies agreed to in the reconnaissance phase. Drawing upon other recent comprehensive basin planning studies, a four year, \$5-8 million dollar effort would appear reasonable.

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