

REALLOCATION OF WATER STORAGE IN FEDERAL WATER PROJECTS

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INTRODUCTION

Municipalities in the state of Georgia with limited water resources may find Federal water projects to be a suitable source of water.

This paper discusses the evolution of U.S. Army Corps of Engineers policy in regard to water supply, withdrawal agreements and water storage reallocation. Close attention is given to the reallocation process and valuation methodology. The paper concludes with a discussion of current issues surrounding the Corps' authority to enter into storage reallocation contracts.

BACKGROUND

In the past, public water supply has received a low priority in allocation of water in Corps of Engineers projects in the Eastern U.S. Increasing demand on limited water resources and urbanization of once rural areas has stimulated interest in storage reallocation. The use of Federal projects for water supply was authorized under the Flood Control Act of 1944 and Water Supply Act of 1958.

Prior to the 1975, many water supply transactions were handled through withdrawal contracts. Withdrawal contracts enabled communities to withdraw a given amount of water from a project over a specified length of time. The annual cost was generally based on hydropower revenues foregone and a clause in the contract allowed the cost to be increased on five year intervals. Presently, with the exception of emergencies, withdrawal agreements are rarely used.

Storage reallocations differ from withdrawal agreements in that the local sponsor actually buys a defined amount of storage. The cost of reallocated storage prior to the mid-seventies was often based upon a straight proration of as-built storage costs.

Competing demands for water away from authorized project purposes, in addition to downstream uses, have caused the Corps to refine its policy in regard to placing a value on reallocated storage. Methods used to calculate the value of water under old withdrawal agreements and

storage contracts tended to discount the value of water in this new and more competitive arena.

METHODOLOGY

U.S. Army Corps of Engineers Regulation ER 1105-2-100 specifies the four pricing methods used to calculate the value of storage. The four methods include: updated cost of storage, benefits foregone, revenues foregone, and replacement cost. The value placed on the storage is the highest of the four methods.

Updated Cost of Storage. The updated cost of reallocated storage is estimated by updating the cost of the joint use features from the midpoint of construction to the fiscal year in which the reallocation of storage is approved. The updated cost of the joint use features is then multiplied by the proportion of useable storage that is to be reallocated to estimate the value of the reallocated storage.

Hydropower Revenues Foregone. Hydropower revenues foregone are defined as the reduction in revenues accruing to the Treasury as a result of reallocating storage from hydropower to water supply. The revenues are based on the existing repayment agreement between the power marketing agency and the US Army Corps of Engineers.

Benefits Foregone. Benefits foregone are defined in terms of National Economic Development (NED) benefits. Generally these are equal to the net loss of average generating capacity and energy. It is possible that benefits foregone could be measured in terms of lost flood control benefits.

Replacement Cost. Notwithstanding unforeseen circumstances, replacement costs are equal to benefits foregone. In the event that reallocated storage is being taken from the flood control pool, The Corps will estimate the replacement cost of equivalent protection.

Operation and Maintenance. The local municipality is charged for a prorated share of project operation and maintenance expenses.

Cost Accounts. The Corps credits the hydropower account with revenues foregone on an annual basis

through the remaining life of the project repayment period. If, as the result of a reallocation, the power marketing agency (PMA) has to purchase replacement power to fulfill contractual obligations the Corps will credit the hydropower account for the actual cost of the replacement power. The Corps will only credit the PMA for replacement power over the life of existing power marketing contracts.

If the cost of reallocated storage is less than the most likely alternative non-Federal source of water supply, the reallocation is considered to be feasible. The reallocation is feasible because, net marginal benefits associated with water supply are greater than benefits associated with the displaced project purpose.

Table 1 outlines the water supply contracts within the Savannah River Basin.

Table 1. Water Supply Contracts for the Savannah River Basin

Municipality	Ac. Ft.	Value Method
Hartwell Project		
Clemson, SC	33	Rev. Foregone
Duke Power *	24,620	Cost of Stor.
Lavonia, GA	127	Updated Cost
Hartwell		New Request
Russell Project		
Elberton, GA	381	Updated Cost
Bigelow/Sanford **		Riparian
Calhoun Falls, SC		Riparian
Abbeville, SC		Riparian
Thurmond Project		
Washington	1 MGD	Rev. Foregone
Washington		New Request
SVA, SC	92.4	Updated Cost
Lincolnton, GA	92	Rev. Foregone
Lincolnton, GA	83	Updated Cost
Columbia Cty, GA	1056	Updated Cost
McCormick, SC	1800	Rev. Foregone
McCormick, SC***	1056	Congressional

* Prorated as built cost.

** Riparian users were using the river before the project was built.

*** Added on to an unrelated bill in Congress.

ISSUES

Some Federal agencies believe that the Flood Control Act of 1944 authorizes that the use of water for otherwise unauthorized project purposes must be surplus, i.e., not needed for authorized uses. In addition they feel that the Water Supply Act of 1958 only allows water supply if the

projects are expanded or constructed with water supply as an authorized project purpose.

With regard to the Flood Control Act of 1944, Section 6 is the water supply authority which provides that surplus water in Corps reservoirs may be made available to states, municipalities, private concerns or individuals for use for domestic and industrial purposes. No contracts for such water shall adversely affect then existing lawful uses of the water. Withdrawal agreements were made under this Act.

The Water Supply Act of 1958 is the authority used for reallocation of storage. Under this Act the Corps reallocates storage if no major structural or operational changes are required. In fact the Corps has set ceilings on the amount of storage that can be reallocated.

Power marketing agencies (PMA's) feel that reallocation of storage from hydropower to water supply results in a pecuniary externality to the preference customers and that the Corps should mitigate that externality. The PMA's feel that the externality could be mitigated by paying their preference customers for the replacement cost of power.

It is the Corps' position that our credit to the PMA for revenues foregone covers the repayment obligation to the PMA. In addition, the Water Supply Act of 1958 gives the Corps authority to reallocate storage. Preference customers were never guaranteed generating capacity in perpetuity. Water storage reallocation contracts are considered a higher and better use of the water.

CONCLUSION

In some instances reallocation of storage is a controversial issue, particularly when power interests become involved. Even though the reallocation of storage is seen by some as decreasing power benefits, marginal benefits to Federal projects are increased when storage reallocations are financially feasible.

RECOMMENDATIONS

Presently the regulations do not specifically address water quality issues as they relate to reallocated water returned to the projects after use. It may be necessary to examine the state and Federal guidelines for water quality to determine if they are strict enough to maintain the excellent water quality that these projects are known for.

As the resource becomes more heavily used downstream, a defined market for withdrawal and pollution rights may become necessary. The benefits of a market will only be realized when use of the resource becomes congested.