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B-179826

The Honorable Jesse Helms
United States Senate



Dear Senator Helms:

As you requested on October 4, 1973, and later arranged with our representatives, we inquired into several aspects of the Corps of Engineers' Falls Lake project near Falls, North Carolina. We briefed your office on the results of our work on January 31, 1974. As you later requested, we are summarizing the information given in that briefing.

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We made our review at the Corps' district office in Wilmington, North Carolina, which office made the benefit-cost studies for the project.

BACKGROUND

Public Law 89-298, dated October 27, 1965, authorized the project. According to the authorizing document--House Document 175--the project was for flood control; water quality control; water supply for the city of Raleigh, North Carolina; and water-oriented recreation in the Neuse River basin. The project was the first of 13 reservoir projects in the general plan for developing the Neuse River basin that were presented in the authorizing document.

At the time of project authorization, the Corps estimated the project cost at \$18.6 million. In July 1973 the Corps estimated the cost at \$59.1 million--an increase of 218 percent over the initial estimate. The initially estimated annual project benefits were \$2,732,000, or a benefit-cost ratio of 3.3 to 1. The 1973 estimated annual benefits were \$4,325,000, or a benefit-cost ratio of 1.5 to 1.

A comparison of the Corps' initial and current estimated annual benefits and costs for the project follows.

BEST DOCUMENT AVAILABLE

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	Initial estimate (December 1963) (000 omitted)	Percent	Current estimate (July 1973) (000 omitted)	Percent
Benefits:				
Recreation	\$1,690	62	\$2,581	60
Flood control	564	21	931	22
Water supply	112	4	359	8
Water quality	195	7	454	10
Fishing and hunting	<u>171</u>	<u>6</u>	<u>-</u>	<u>-</u>
Total benefits	<u>\$2,732</u>	<u>100</u>	<u>\$4,325</u>	<u>100</u>
Total costs	\$ 822		\$2,904	
Benefit-cost ratio	3.3:1		1.5:1	

The Bureau of Sport Fisheries and Wildlife, Department of the Interior, stated that the project did not enhance fish and wildlife but rather mitigated some of the losses caused by the project and that therefore the benefits initially claimed for fishing and hunting were eliminated.

Landowners in the Falls area are challenging the project in the courts because of its alleged environmental impact; construction has been deferred until the cases are settled. A Corps official estimated the cases would be settled in the spring or summer of 1974. Design work is two-thirds complete, and the Corps plans to advertise for construction bids soon after settlement.

As of January 1974, the Corps had allocated \$6,436,000 for the project. Although construction work has not started, the Corps has purchased some reservoir and damsite lands.

ESTIMATES OF LAND COSTS

The Corps' estimates of land costs have greatly increased since the initial estimate made for project authorization purposes.

	<u>Acres</u>	<u>Cost</u>	<u>Average cost per acre</u>
December 1963	31,500	\$ 3,666,000	\$116
July 1973	42,259	18,222,000	431
Increase			272%

The July 1973 estimate might be understated. The Urban and Regional Study Group of the University of North Carolina's sample of land transactions showed that, from the 1960-64 period to the 1965-69 period, land prices in the Falls reservoir area increased about 585 percent and that the average cost per acre increased from \$148 to \$1,013.

The Corps has purchased nearly 300 acres of land in the project area. The Corps paid \$352,471, or 288 percent, more for this land than it had estimated in 1973. At the briefing, we cautioned that, because the Corps' purchases represented a small percentage of the total land to be acquired, the increased costs the Corps experienced to date might not be representative.

ACQUISITION OF LAND IN FEE SIMPLE TITLE

Land acquisition for Corps reservoir projects is governed by a joint policy statement of the Department of the Interior and the Department of the Army. This statement generally provides that all project lands be acquired in fee title. Easements in lieu of fee title may be taken only for those lands that meet all the following conditions.

1. Lands lie above the storage pool.
2. Lands are in remote parts of the project area.
3. Lands are determined to be of minor value for fish and wildlife protection or enhancement or for public outdoor recreation.
4. It is financially advantageous for the Government to take easements in lieu of fee title.

The Corps is acquiring all lands for the Falls project in fee title because the Corps has designated the flood control pool and freeboard areas either for wildlife mitigation or for recreation. The North Carolina Office of Recreation Resources agreed with the Corps that there was no feasible alternative to acquiring land rights in less than fee simple title because State operation and management of recreation areas require full land control.

RECREATION

Need for recreation in the Falls area

The National Park Service and the Bureau of Outdoor Recreation, Department of the Interior, and the North Carolina State Office of Water and Air Resources have said that water-oriented recreation areas are needed in the Falls area. A district analysis showed that, even with the Falls project, existing and proposed projects would be able to meet only 88 percent of the demand for water-oriented recreation in the Raleigh-Durham area by 1980 and only 70 percent by 2020. In addition, various State studies have shown a pressing need for additional outdoor recreation use areas in the Falls area.

Computation of recreation benefits

The Corps reanalyzed the project's recreational features in July 1973 to determine the optimal scale of development that should be considered with the view to minimizing land requirements. The Corps studied five alternatives covering various levels of recreational development with and without separable recreational lands--those lands reserved exclusively for recreational use that are adjacent to the lands required for flood control and other project purposes.

The Corps concluded that the project, as authorized with 4,550 acres of separable lands, best met the project's recreational potential. We understand that the Corps gave you a copy of its reanalysis.

We did not question the project's stated recreational needs; however, we did note the following matters relating to the Corps' reanalysis and computation of recreation benefits.

- The factors used for projecting the number of visits to the recreation area were not adequately supported.
- The same value per visitor-day was used in computing benefits for all alternatives, even though the quality of the recreational experience would probably vary according to the type and quantity of facilities provided under each alternative.
- The study did not consider the project's joint costs (i.e., not identifiable with any one project purpose and allocated to all project purposes) that would be allocated to recreation in determining net benefits for each alternative.

A district official said that recreation generally accounted for 30 to 50 percent of the total benefits for most projects; it accounted for 60 percent of the benefits for this project. Deleting the separable lands, as you proposed in Senate bill 2668, would reduce the benefits that could be claimed.

On the basis of the alternative in the reanalysis which did not include separable lands, it was evident that the project's benefit-cost ratio would be lower if separable lands were eliminated. The amount of benefits for recreation under this alternative could be as low as \$36,000, or about 15 percent of the recreation benefits currently claimed with the authorized separable lands.

To fully determine the impact of eliminating separable recreational lands, we would need a detailed analysis of the recreation part of the project. District officials said that the Corps would need to completely redesign the recreation facilities to determine what facilities could actually be placed in the reduced land area and that this redesign would take 6 to 8 months. District officials had differing opinions on whether enough facilities could be placed in the reduced area to keep the project's benefit-cost ratio at unity or better.

WATER SUPPLY FOR THE CITY OF RALEIGH

Calculation of water supply benefits

The least costly alternative, in the absence of the project, for supplying water was the basis used for computing the benefits attributed to the water supply part of the project. The benefits were based on the estimated \$22 million cost for the same water supply with a single-purpose dam at the Falls site. The Corps calculated the benefits on the basis of current costs according to the criteria in Senate bill 97, which directs that prices used for project evaluation be those prevailing at the time of the analysis.

Alternative sources of water

The Corps and Raleigh considered alternative sources of water, but the single-purpose dam was the most feasible alternative. If the Corps does not build the project, Raleigh will have to build a dam at the Falls site to meet its water needs. Raleigh has already invested \$7.6 million in a water treatment plant, storage facilities, and supply lines to get its water from the Neuse River at the Falls site.

Raleigh has other sources of water supply available, such as the Kerr Reservoir in the Roanoke River basin and the New Hope Reservoir under construction in the Cape Fear River basin. However, the estimated cost for getting water was greater from these sources than from the Falls Reservoir. In addition, there was some question whether there would be enough water available from the New Hope Reservoir to meet the needs within that basin and Raleigh's needs.

As you requested, we did not obtain written comments on this report from the Corps. However, we discussed this report with Corps' officials.

We do not plan to distribute this report further unless you agree or publicly announce its contents.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "James A. Steel".

Comptroller General
of the United States