

While projects sit in line waiting for federal authorization or appropriations, water resources problems persist and the costs of meeting water needs can escalate with inflation. Further, while waiting for appropriations, the terms under which some projects were economically justified and authorized by the Congress can change considerably. For 46 active Corps projects and 17 active Bureau projects that were up to 25 percent complete in 1982, the average interest rate used to calculate costs and future benefits (when these projects were studied in the 1960s and 1970s) was 3.9 percent, compared to an interest rate around 9 percent that might conservatively be used for the same calculations today. Because total water project costs are dominated by capital-intensive construction costs in the early years and only yield benefits slowly over a 50-year project life, increasing real interest rates can put budgetary pressure on the federal government, the prime water project financier, and return eroded benefits over a very long period of time.

### Screening Projects for Economic Efficiency

The Congress is responsible for authorizing feasibility studies, authorizing project construction, and appropriating funds annually for these two purposes. The benefit/cost ratio (B/C), developed during the feasibility study, serves as the economic screening process for the Congress, separating economically desirable projects from undesirable ones. As long as benefits exceed costs (a ratio greater than one), the Congress should find no economic reason to reject the project. But despite elaborate procedures to calculate benefits and costs, the science is inherently imprecise, so that projects reach the Congress for funding with an economic stamp of approval--a B/C greater than one--and yet with a highly imprecise evaluation of their economic merits. A second economic screening device--the willingness to pay of the beneficiaries--would provide better information to help guide the Congress in making water project investment decisions. <sup>23/</sup>

Benefit/cost analyses are generally performed by field offices of the federal water agencies, the same offices responsible for constructing and sometimes operating and maintaining water projects. These agencies operate under a proconstruction mandate from the Congress that has slowly

---

23. "Willingness to pay" encompasses more than just an expression of intent on the part of project beneficiaries. As used here, willingness to pay becomes operational when project beneficiaries either supply an up-front financing share of project costs or commit themselves to legally binding contracts for repayment of a share of project costs.

grown more powerful as the federal government has accepted a larger role in developing national resources. These agencies have become accustomed to building water projects, and their livelihood depends on continuing to do so. Therefore, it is in their best interests to describe project benefits generously and project costs frugally. Critics of this process claim that because of their vested interest in building water projects, federal water agencies do not produce impartial assessments of benefits and costs. <sup>24/</sup>

Because local sponsors have such a low financial stake in water projects, they have no incentive to make sure costs and benefits are calculated accurately. Their proportion of the cost of making a mistake is very low in relation to the benefits they will receive if the water project is built. The Congress, in effect, underwrites such activity by accepting the financial consequences of understated costs and overstated benefits; high federal cost shares transfer such liability from project beneficiaries to the federal government and, ultimately, to the general taxpayers.

#### Efficiency-Motivated Procedural Reform

Two types of procedural reforms are suggested by the administrative inefficiencies that exist under current policy. First, complex, centralized decisionmaking over essentially intrastate water project decisions suggests that state or local governments should become more involved with choosing projects that yield mostly local benefits. Second, the imprecision resulting from strict reliance on benefit/cost analysis as an economic screening process suggests increasing state or local participation during project evaluation and relying more on willingness to pay as a measure of project benefits.

Use of Local Information. To the degree that water development priorities continue to follow the recent trend toward smaller, more localized projects, the use of local information in making investment decisions will become increasingly more important. In addition, cost recovery for vendible benefits of intrastate projects could be implemented more effectively at the level of government closest to the resources--the states.

- 
24. Numerous studies have concluded that the federal water agencies consistently overestimate benefits and underestimate costs. Perhaps the most thorough treatment is found in Robert Haveman, Water Resources Investment in the Public Interest (Vanderbilt University Press, Nashville, Tenn.: 1965). See also U.S. General Accounting Office, An Overview of Benefit-Cost Analysis (1978).

Recently, many states have recognized the importance of setting their own water development priorities. In response to reduced federal financing and a conflict between their water development goals and federal policy, the western states have recently made it quite clear that they are interested in developing and managing their resources according to their own priorities. Since the so-called "Sagebrush Rebellion" in 1980, states have begun to advance this position more forcefully and have taken legal and financial steps to ensure continued development of western water. Evidence of this includes the 1980 Arizona groundwater law, the California State Water Project and Peripheral Canal proposal, and general proliferation of state water development funds throughout the western states. 25/

Eastern and midwestern states have also recognized the shortcomings of a completely centralized federal approach to water development, and have recently called for a comprehensive review of national water policies. 26/ They have identified serious management failures and inequities in the distribution of federal water funds. Between 1956 and 1980, the northeastern and north central states received only about 25 percent of all federal water resources outlays. The southern states received almost 40 percent while the western states received about 35 percent. 27/ Such

- 
25. For example, in 1980 the Arizona legislature passed a comprehensive groundwater management and use act implementing, among other things, wellhead pumping taxes, strict water conservation measures, and substantial fines for over-pumping--in return for final funding of the Central Arizona Project that would bring about 2.2 million acre-feet of lower Colorado River water to the Phoenix and Tucson metropolitan areas each year. California has spent about \$2.5 billion over the last 20 years to capture spring runoff from the mountains north of Sacramento and to transport water through the California Aqueduct to water-short cities to the south. If constructed, the 43-mile Peripheral Canal would link the Sacramento River north of the San Francisco delta region to the South Bay Aqueduct to ensure continued supply to Southern California once the Central Arizona Project begins to divert Colorado River Water from California to Arizona.
  26. See Northeast-Midwest Institute, Building A Water Policy Consensus: Key Issues for the Eighties, Washington, D.C. (June 1982).
  27. Congressional Research Service, Environment and Natural Resources Division, unpublished data developed at the request of the staff of the Senate Committee on Environment and Public Works (March 1982).

an imbalance, claim eastern and midwestern officials, has resulted in the neglect of the water supply needs of older population centers while the growth-induced or special interest water needs of other regions have been addressed.

Willingness to Pay. Benefit and cost analysis provides aggregate information about overall project benefits and costs. Willingness to pay goes one step further by assigning the costs of a project to those who directly benefit from it. Under this second economic screen, users or beneficiaries would have an incentive to support only those projects whose expected return was greater than what they would pay to acquire it. To the extent such a screening process was used, project support because of federal subsidies would be reduced. Water projects would no longer be viewed as windfall opportunities but rather as investments. Decisionmaking at any level would be improved if this type of information was provided. Simply instituting cost-recovery mechanisms (user fees for vendible benefits or special property assessments for some nonmarketable benefits) would go a long way toward applying willingness to pay as a means of benefit estimation. If those who would be asked to pay for a project were integrally involved during project planning, decisionmakers would be more assured of a firm commitment to pay.

---

## CHAPTER V. POLICY OPTIONS

---

Congressional concern for efficient water resources investments is beginning to focus on three areas for possible reform: project cost sharing, selection, and financing. In order to effect improvements through reallocated cost sharing, two principles stand out: first, users should pay the cost of providing marketable benefits in proportion to their use; and second, public entities should share the costs of providing nonmarketable benefits in rough proportion to the accrual of these benefits. With regard to project selection, a larger role for state and local governments in the decisionmaking process would recognize the shift from interstate to intra-state water resources projects and the potentially larger cost share that these government levels should bear. Apart from the issue of who ultimately pays for water projects (expressed in cost-sharing policy), the issues of who should finance these activities and how they should be financed are chief concerns of the Congress and the states. The forms of financing and the burden of "up-front" capital requirements on each partner could have profound effects on the way water resources are developed.

This chapter analyzes three policy alternatives representative of recent Congressional proposals:

- o A federal loan program,
- o Federal block grants, and
- o Federal project grants under a limited federal role.

Each option would place greater responsibility for project selection, financing, and repayment on states and local governments and on direct beneficiaries. This emphasis could provide a greater incentive than current policy to ensure that the most cost-effective projects are built and maintained, and to guarantee an equitable distribution of government services. This shift in responsibility would also affect federal, state, and local budgets, and the costs borne by private-sector beneficiaries of water resources projects.

## FEDERAL LOAN PROGRAM

A federal loan program would provide both the cost-sharing incentives to promote investment efficiency and a source of development capital for all states. Evaluation and selection of nationally important projects would remain at the federal level, while projects of local importance would be chosen by states according to their own priorities.

A federal loan fund would be established from which local investments could be financed. The fund would require federal appropriations initially, but over time it would become self-sustaining as states paid back their loans. The states would choose among development and maintenance priorities and request that fund monies be allocated to the appropriate federal water agencies to undertake projects specified by the states. Project benefits would be divided into two categories: marketable and nonmarketable. The states would assume legal responsibility for repaying the costs of providing all marketable benefits and an appropriate share (perhaps 50 percent) of the nonmarketable benefits. States would be given full legal authority to establish user fees or other cost-recovery mechanisms when necessary to meet their repayment obligations. The states would manage these projects once they became operational.

Loan requests would be submitted by the state governor to a federal water development loan board for review. The board would be composed of representatives from the Corps, the Bureau, the TVA, and the SCS; state representatives, perhaps from the National Governor's Association; and members at large selected by the Congress based on their demonstrated expertise in water development. Loans could be disbursed on a first-come-first-served basis.

Federal, state, and local personnel could conduct joint feasibility studies with an expanded scope. The states and the federal government would share study costs equally. These studies could include engineering feasibility, environmental impact analysis, market analysis for marketable benefits, and benefit/cost calculations for nonmarketable benefits. Feasibility reports would be submitted to the appropriate state governors' offices and to the director of the main federal agency involved in the project. They could serve as the basis for a loan application, stating the overall and annual construction costs, a schedule of repayments corresponding to annual sales of marketable products, a schedule of repayments corresponding to the state share of nonmarketable costs, and a statement of annual federal costs corresponding to the federal share of nonmarketable costs. Interest rates on the remaining loan balance could be re-evaluated every five years.

Separately, the federal government would form partnerships with appropriate groups of states to finance and manage interstate water

resources systems (inland navigation or multireservoir flood control systems, for example). The federal government would finance new construction and operation of these projects, while the states would contribute any necessary land easements or rights-of-way. These systems would be managed by joint federal and state boards. The federal government would institute system-wide user fees when applicable to recover both construction and operation expenditures.

### Economic Efficiency Under a Loan Program

A federal loan program could be a major step toward an efficient investment program for water resources. For both intrastate and interstate projects, beneficiaries would have to pay user fees to recover the cost of providing marketable benefits. The cost of providing nonmarketable benefits would be shared between the federal and state governments. If either user groups or the state judged the project to be uneconomic, the project would not go forward as planned. Either the project scope could be altered until benefits were perceived to be greater than costs or the project would be eliminated entirely, thus allowing the state and federal government to commit their resources elsewhere.

Because states would be financially responsible for repaying a much larger share of any project's cost than they now pay, those projects perceived by the state to have the highest net return on investment would be promoted first. The states would be responsible for repaying a minimum of 50 percent of any project's cost, even if all benefits were classified as nonmarketable. Compared to the current average nonfederal share of 30 percent, this represents almost a doubling of the financial responsibility of the states.

Moreover, the federal government would institute user fees to recover all costs associated with providing marketable benefits of interstate projects. Full-cost user fees would be established to recover the federal investment in new construction and annual operation and maintenance for inland waterway projects. To the extent that multistate flood control projects were still economically justified, they would be financed (and paid for) by the federal government. This arrangement, however, could continue to provide an incentive for states or beneficiaries of such projects to demand more or larger projects than they would if they were responsible for repayment.

## Effects on the Federal Budget

In the early years of a loan fund, before state and user payments began to accrue, high loan demand could put budgetary pressure on the federal government. In time, however, state and user payments would actually reduce annual federal outlays for water projects. Federal outlays for construction of water projects totaled about \$2 billion in fiscal year 1982; but this spending figure is low relative to a recent assessment of water resources needs.<sup>1/</sup> To meet the federal financing responsibility for interstate projects plus the state loan demand, federal capital outlays for all water projects initially could increase to over \$4 billion a year. If federal capital was substituted for the state capital that now finances strictly state water development, demand for federal funds could increase to over \$6 billion a year initially. The repayments from user fees and the states, however, would reduce these demands over time.

It is difficult to assess the number or types of projects that would lose local support if user fees were instituted, but some projects would certainly be cancelled. One recent study of the effects of full-cost user fees on inland waterway traffic estimated about a 20 percent reduction in demand.<sup>2/</sup> Similarly, a flood control project in Wisconsin was cancelled by local sponsors when citizens learned that real estate assessments would increase to pay for local flood protection. Bureau officials have concluded that demand for irrigation water would drop dramatically and some pending projects could be cancelled under a system of user fees to recover the full cost of service.<sup>3/</sup> If overall demand dropped by 30 percent, federal outlays in the early years of a loan program could be held to about \$3 billion a year.

- 
1. A recent Congressional Budget Office estimate of water resources needs based on federal water agencies' assessments included an additional annual capital requirement of \$400 million for inland waterways, \$60 million for ports, \$700 million for dam safety, and about \$600 million for backlogged but authorized projects. In aggregate, annual capital needs could increase from the 1982 level of \$2 billion to about \$4.1 billion. This level of outlays would have to be maintained for at least ten years. See Congressional Budget Office, Public Works Infrastructure: Policy Considerations for the 1980s (April 1983).
  2. U.S. Department of Transportation, Inland Waterway User Taxes and Charges (February 1982).
  3. For additional details, see U.S. Department of the Interior, Bureau of Reclamation, Preliminary Regulatory Impact Analysis for 43 CFR 426 Acreage Limitation (April 1983), p. 38.

## Effects on States

On balance, the states would probably gain more than they would lose under a loan program. Ultimately, states would be financially responsible (through administration of user fees and state payments) for a greater portion of project costs than under current policy. But they could build needed projects according to state priorities with very low requirements for initial capital formation. In the long run, economically efficient construction and operation of water resources infrastructure would result in strengthened state and local economies.

The loan program implicitly recognizes the competitive advantage that the federal government has over state or local governments in financing relatively expensive water projects. Federal borrowing power is greater at lower cost (because of the lower risk involved) than either state or local borrowing power. A loan program could, therefore, offer a wide range of repayment terms to states to accommodate a variety of financial capabilities at the state and local levels. In this respect, the federal loan program appears quite sensitive to state concerns. However, this must be balanced against the increased state burden of evaluating projects, establishing cost recovery systems, and managing projects once they are constructed. Although it is difficult to predict state loan demand and thus the regional distribution of federal funds, a loan program would allow all states to compete for federal resources on an equal footing, eliminating any regional biases resulting from current funding mechanisms.

## Effects on Users

Users would pay the full cost of services for marketable benefits. This could represent significant increases in the prices currently paid for federally subsidized water and water project benefits. In turn, users would be induced to conserve water if possible or make other efficiency adjustments motivated by the real, unsubsidized price of water. For example, western farmers receiving subsidized irrigation water under current policy would pay eight times the subsidized price, on average, under a federal loan program. <sup>4/</sup>

- 
4. This estimate assumes that farmers would be willing to pay this higher price. Many would probably not pay so much to irrigate and would revert to dry-land farming. For additional details, see U.S. Department of the Interior, Water and Power Resources Service, Acreage Limitation--Draft Environmental Impact Statement (March 16, 1981). When compared to the effective, composite nonfederal cost-sharing rate for irrigation projects--19 percent--a full cost recovery plan would increase farmers' irrigation costs by a factor of 5, on average.

Shippers on the inland waterways would pay an average of about 16 percent more under full-cost user fees. This could curtail traffic on some waterways. Shippers of soybeans and grain (accounting for about 10 percent of all barge tonnage) would pay about 6 cents per bushel more, most of which would probably be passed back to farmers in the form of reduced prices paid for grain. The cost of shipping coal (accounting for roughly 25 percent of all tonnage shipped on the waterways) would also increase, ultimately raising consumers' electricity bills by about 1 percent.

Shippers using the nation's ports and harbors would also pay more under average user fees set to recover 100 percent of operation and maintenance costs. International shippers would pay about 40 cents per ton more than they now pay, or a 1 percent increase in total shipping costs. Great Lakes shipping costs would increase by about 19 percent and coastal shipping costs by about 7 percent. If users were also charged for new capital projects, costs could increase slightly more. For example, deepening the port of Norfolk would increase user fees by about \$1.00 per ton of coal. The increased fees would be more than offset, however, by the anticipated savings from using larger coal-carrying ships. <sup>5/</sup>

#### FEDERAL BLOCK GRANTS

A block grant option--modeled after the 1981 Domenici-Moynihan proposal (S. 621)--could reduce delays associated with federal control over intrastate projects while achieving efficiency gains in constructing interstate projects. In addition to higher nonfederal cost-sharing rates, states would finance a significantly higher share of water project construction.

The federal government would invest in two types of water projects--regional (interstate) projects, and intrastate projects. Regional projects could include large multipurpose reservoirs or projects involving interstate transfers of water serving several states, to the extent that such projects could still be justified on economic grounds. But, since such facilities are largely in place, regional investments would probably focus on rehabilitation and maintenance of the inland waterway system.

Each year, the Congress would appropriate a fixed level of intrastate project funding that would be allocated to the states based on population, land area, or some other proxy for "need." In order to receive these funds,

- 
5. For additional details, see Congressional Budget Office, "Statement of Alice M. Rivlin, Director, before the Subcommittee on Water Resources of the Senate Committee on Environment and Public Works (May 18, 1983).

states would have to match them with their own funds. Unused allocations would be redistributed to other states according to the original allocation formula. States could use federal allocations for any water resources purpose they chose.

Under the 1981 Domenici-Moynihan proposal, the states would pay a minimum of 25 percent of feasibility study costs, 25 percent of project construction costs, and 50 percent of operation and maintenance costs. If, under existing cost-sharing conventions, the nonfederal share of a particular type of project was higher than these minimum rates, the higher rate would prevail. These minimum rates for project construction and operation are very close to the historical mean nonfederal rates--24 percent of construction costs and 58 percent of operation and maintenance costs. In the past, states did not pay for any study costs. While the "economically optimal" matching ratios under a block grant approach are debatable, for purposes of discussion this option assumes a 50 percent state match for construction and operations and a 25 percent state match for feasibility studies.

States would be responsible for maintaining two priority lists, one for feasibility studies and one for potential construction projects. Each list would incorporate any backlogged projects that the state wanted considered. A project would be placed on the state priority list of authorized projects ready for construction if three conditions were met: the feasibility study indicated a feasible solution to the water problem (on economic, environmental, and engineering grounds), the state certified that the project should be on the list, and there were no objections to construction from neighboring states. If one or more of these conditions were not met, a project could still go forward, but only after Congressional review and authorization.

Regional projects would be selected by a board composed of representatives from the Corps, the Bureau, the TVA, and the SCS, and five members-at-large (recognized experts in regional water resources development). The federal government would pay all costs for regional projects, establish cost-recovery mechanisms for all marketable benefits, and operate the facilities after construction. The board would also serve as a clearinghouse for feasibility and authorization information.

#### Economic Efficiency under Block Grants

Under the block grant option, economically efficient intrastate projects would be encouraged but not guaranteed. User fees would not be mandatory; a state could choose to subsidize groups of users if it so desired. Block grants for intrastate projects would match costs to beneficiaries only to the extent that matching ratios approximated the ratio of marketable to

nonmarketable benefits and to the extent that states chose to pass the correct share of the marketable costs through to users. The generally higher state contribution to intrastate investments, however, would certainly encourage consideration of higher user fees. By contrast, interstate project construction would be conditioned by users' willingness to pay appropriate fees, promoting more economically efficient investments in regional projects.

Under this option, a reduced nonfederal share for hydroelectric power and municipal water supply projects could encourage relatively more of these projects than under current policy. A higher nonfederal share for all other projects, however, could discourage their construction (see Table 6). Overall, states and/or users would end up paying about 22 percent more for water projects than they do now, which in turn could result in more efficient new construction investment decisions. Adjusting the nonfederal share by project type to reflect more nearly the marketability of benefits could also be accommodated within the block grant structure. Potential efficiency gains from doing so would have to be balanced against any increased state financing burden.

The current cumbersome process for feasibility studies and authorizations would be shortened considerably and removed from Congressional consideration, except under limited circumstances. Feasibility study periods could be limited to three years, with authorization 90 days later. Construction could then begin immediately. By comparison, in a study of 115 projects undertaken by the Corps in 1966, it took an average of 10.8 years for a study to move from authorization to approval by Congress and then 6 more years to begin construction after authorization. <sup>6/</sup>

#### Effects on the Federal Budget

This option could have varying effects on the federal budget, depending upon the level of appropriations set each year by the Congress. Unlike the loan program, however, this decision would remain with the Congress, and the federal budgetary exposure could thus be limited. It is reasonable to assume that the fiscal year 1982 level of federal appropriations for water resources--about \$3.7 billion for construction and operations--would serve as an initial level of funding under this option. If this were the case, roughly

---

6. See U.S. Department of the Army, Office of the Chief of Engineers, "Report of the Chief of Engineers on Survey Report Procedures to the Committee on Public Works, House of Representatives," unpublished paper (April 1966).

TABLE 6. CURRENT MEAN, EFFECTIVE NONFEDERAL CAPITAL COST SHARING RATES COMPARED TO COST-SHARING RATES UNDER THE BLOCK GRANT PROPOSAL, BY PROJECT PURPOSE

Project Purpose	Effective Nonfederal Share of Project Capital Costs		Net Differences (In percentage points)
	Under Current Policy (In percents)	Under Block Grants (In percents)	
Urban Flood Damage Reduction	17	50	+33
Rural Flood Damage Reduction	7	50	+43
Drainage	42	50	+8
Irrigation	11	50	+39
Erosion Control	37	50	+13
Municipal and Industrial Supply	62	50	-12
Water Quality Control	31	50	+19
Fish and Wildlife Preservation	8	50	+42
General Recreation	17	50	+33
Navigation <u>a/</u>	16	50	+34
Hydroelectric Power	64	50	-14
Mean, All Project Types <u>b/</u>	28	50	+22

a. Not including inland navigation projects. These would be funded entirely by federal project grants. Federally administered user fees would recover up to 100 percent of the federal investment.

b. Weighted by level of expenditures within individual project types.

\$1.5 billion would be allocated to intrastate projects. <sup>7/</sup> If all these funds were matched equally by the states, about \$5.2 billion worth of combined federal and state water resources expenditures could be leveraged with federal outlays held at the 1982 level.

### Effects On The States

Under a block grant approach, the nonfederal contributions to water projects would have to be provided by the states in the form of either up-front financing or noncash contributions, such as land, easements, or rights-of-way. Under current policy, the nonfederal share is often provided by users over a 50-year period. Thus, block grants with high matching ratios imply an increased financing burden on the states. Before or during construction of an irrigation project, for example, the state would have to provide 50 percent of the capital costs. States would be faced with raising this development capital by appropriating from general revenues (tax collections); issuing development bonds (general obligation or revenue bonds, depending on the type of project); or transferring, in part or entirely, the burden of capital formation to those localities that stand to benefit from the water project. <sup>8/</sup>

For some types of projects, the nonfederal financing share would change dramatically under this proposal. For example, the state financing

- 
7. This estimate was derived by combining that portion of each of the four federal water agencies' 1982 appropriations that funded essentially intrastate projects. Included were the Corps' local flood control projects; portions of several other Corps' accounts, SCS projects constructed under P.L. 534 and P.L. 566; and portions of the Bureau's construction account.
  8. State financing of water projects is not new. In 1982, in addition to financial obligations fulfilled by states to participate in federal projects, every state actively funded its own water development projects through various financing techniques, including appropriating funds from general revenue (in 36 states for a total of \$490 million), issuing general obligation bonds (in 27 states for a total face value of about \$2.4 billion), issuing revenue bonds (in 11 states for a total face value of about \$700 million), and dedicating taxes and collecting user fees (in 26 states for a total of about \$300 million). For details, see Congressional Budget Office, Current Cost-Sharing and Financing Policies for Federal and State Water Resources Development (July 1983).

share of a rural flood control project would increase by 43 percent. The state share of financing fish and wildlife benefits would increase by 42 percent, and the state financing burden for irrigation projects would increase by 39 percent. For municipal water supply and hydropower projects, the up-front financing burden on the states would be increased substantially over current policy, even though the ultimate burden of payment would actually be lower than it is currently. Although it is arguable that these types of projects should be locally financed anyway, this upward shift in financing requirements could prohibit some states from participating fully in the grant program.

The way that the block grants would be distributed could also have an important effect on the states. Under an allocation formula based on population and land area, historical trends in regional distribution of federal funds would be altered. Southern and western states--the recipients of about 40 percent and 36 percent, respectively, of overall federal water spending between 1956 and 1980--would receive about 31 percent each under the block grant option. Northeastern and north central states, which received about 6 percent and 19 percent, respectively, of all federal water spending between 1956 and 1980, would get about 13 percent and 25 percent under the new block grants (see Table 7). Distribution of federal funding for regional projects could alter these estimates.

#### Effect on Users

Direct beneficiaries of marketable products from interstate, federally funded water projects would pay user fees to the federal government in an amount sufficient to recover the federal investment. Shippers on the inland waterways, for example, would pay full-cost user fees under this option, with effects identical to those described under the loan program.

Although fees for local port and harbor dredging would not be mandatory under this option, states could choose to impose them in order to recover their increased costs for such projects. Similarly, local projects supplying hydroelectric power and water for agricultural, municipal, or industrial use could cost users more if states chose to recover their increased costs.

#### FEDERAL PROJECT GRANTS UNDER A LIMITED FEDERAL ROLE

This option recognizes that most of the federally important water projects have already been built and would, therefore, accelerate a transition from federal to state responsibility for new intrastate water project

TABLE 7. REGIONAL DISTRIBUTION OF FEDERAL WATER EXPENDITURES UNDER THE BLOCK GRANT OPTION COMPARED TO THE HISTORICAL DISTRIBUTION

Region	Percent of All Federal Water Expenditures 1956 through 1980	Percent of Federal Funds Under Federal Block Grants <u>a/</u>
Northeast <u>b/</u>	6.0	13.4
North Central <u>c/</u>	18.7	24.7
South <u>d/</u>	39.7	30.8
West <u>e/</u>	35.7	31.1

SOURCE: Congressional Research Service, Environment and Natural Resources Division, unpublished data developed at the request of the staff of the Senate Committee on Environment and Public Works (March 1982).

- a. Excluding distribution of federal expenditures for regional projects.
- b. Northeastern States: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
- c. North Central States: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
- d. Southern States: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
- e. Western States: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

construction. An independent review board would select among projects that were interstate or international in scope (multistate inland navigation or reservoir systems or international stream flow), produced significant benefit or cost spillovers from one state to another (water quality, control, stream flow regulation), or entailed national defense or security benefits (some harbor improvements). Existing projects and those currently under construction that met these criteria would remain under current financing and administrative policies. Financial and administrative responsibility for all other current projects would be transferred to the states over a period of ten years. Any new projects that met the criteria for federal interest would be constructed under current project evaluation, selection, and financing conventions. Federally administered user fees would be instituted to recover the costs of providing marketable benefits. Receipts would accrue to the federal government and to the states in proportion to their financing contribution.

All new water projects that did not meet the criteria for federal interest would be financed and managed by the states, which would be given full authority to levy user fees sufficient to pay for construction and operation. In addition, the states could retain federal agencies under contract for construction, engineering, planning, or other technical support, if they chose to do so. Terms for payment could be based on the actual federal cost of these services.

#### Economic Efficiency Under a Limited Federal Role

For those new projects judged to be of significant federal interest and offering a marketable benefit, federal funds for construction or operation would be repaid over time by users through a federally administered system of user fees. Hence, matching costs to beneficiaries would condition investments with users' willingness to pay, in turn reducing the tendency for overinvestment in these projects. For federally important projects that produced nonmarketable benefits, current cost-sharing conventions would prevail, and thus some potential would still exist for inefficient federal spending.

Federal project selection would not necessarily become less complicated under this option. The definition of "federally important" is imprecise and open to debate. States or other local project proponents seeking federally subsidized water projects would have an incentive to lobby for their projects by trying to prove that they, indeed, had federally important attributes. Thus, there is potential for this option to become little more than current policy, perhaps with federally administered user fees.

### Effects on the Federal Budget

Federal outlays could be reduced significantly under this option. If the fiscal year 1982 level of spending for "federally important" projects was maintained over the ten-year phase-in period, total federal outlays for construction and operation of water projects would drop about 5 percent a year, from \$3.7 billion in fiscal year 1982 to about \$2.2 billion in fiscal year 1992 (see Table 8). Thus, after the phase-in period, federal outlays would be about 40 percent lower than 1982 spending.

TABLE 8. PROJECTED FEDERAL OUTLAYS FOR WATER RESOURCES CONSTRUCTION AND OPERATION UNDER A LIMITED FEDERAL ROLE (BY fiscal year, in billions of 1982 dollars) a/

Year	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Outlays	3.7	3.5	3.3	3.2	3.0	2.9	2.7	2.6	2.5	2.3	2.2

a. Estimate ignores a further reduction in outlays from offsetting receipts from federally assessed user fees.

### Effect on the States

Of the three options discussed in this chapter, this option would put the greatest financial burden on the states, including the added costs of operating and managing existing intrastate projects, financing any new intrastate projects, and meeting existing cost-sharing requirements for federally important projects. Out of about \$3.7 billion in federal expendi-

tures for water resources in fiscal year 1982, about \$1.5 billion (41 percent) would have been a state responsibility under this option. <sup>9/</sup>

To be sure, without federal assistance, some states would be at a significant financial disadvantage relative to other states. Although it is difficult to measure, two types of states could be worse off: those that have relied most heavily on federal subsidies, and those with limited capacity to raise development capital. States with significant energy resources and/or expanding industrial and population bases may have an advantage in raising capital for water projects.

### Effects on Users

Direct beneficiaries of federal investments would pay higher prices for water and water services if this option was implemented. Shippers on the inland waterways, for example, would pay an average of 16 percent more under full-cost recovery user fees. If user fees were set by specific segments, several low-volume, high-cost waterways would probably close (namely, Appalachicola/Flint, Kentucky, Ouachita/Red, Arkansas, Tennessee-Tombigbee), forcing shippers to seek alternative rail or truck transportation.

In addition, depending on the response of the states to their new water development responsibilities, beneficiaries of other types of water projects could also pay significantly more for water and related services. Based on current subsidies, farmers could end up paying five times more under full-cost recovery than they now pay for irrigation water; the price of hydroelectric power and municipal water supply could increase by 50 percent; and port and harbor fees for some high-cost, low-volume ports could be high enough to make operations uneconomic. Phasing in higher fees would help reduce sudden economic hardship and allow users to make necessary adjustments to increased costs.

- 
9. This estimate is based on transferring to the states over a ten-year period the following federal activities: small watershed and local flood control activities of the SCS; up to half of the Bureau's construction activities; the Corps' local flood protection, beach erosion control, and recreation activities; and portions of the Corps' harbor dredging, multipurpose reservoir, major rehabilitation and dam safety, and Mississippi River and Tributaries activities.

