FINANCING THE NATION'S WATER PROJECTS: STATE OPTIONS*

by

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The administration of President Reagan has proposed a Water Resources Policy which places greater responsibilities on non-federal sources of financing to pay an increased share of the costs of project studies, construction, and operation and maintenance. Although the policy of increased cost-sharing has been justified on various grounds, it leaves unanswered the question of specifically how state governments can meet their additional responsibilities. Historically, the Federal government has financed substantial shares of state and local water project costs. Increased cost-sharing will impact not only the number and kinds of such projects undertaken, but also decisions relating to the more efficient use of existing facilities and resources. It places an additional financial burden on state governments and necessitates development of appropriate institutional arrangements and financial alternatives.

The purpose of this study is to analyze alternative institutional arrangements and financing alternatives for water projects. The specific objectives are to identify existing institutional arrangements and financing alternatives for water projects and evaluate them with respect to efficiency and equity.

Generally speaking, water and projects are financed on either a pay-as-you go or pay-as-you use basis. Pay-as-you use, or debt finance, is preferred to pay-as-you use financing of water projects for several reasons. The use of debt permits those who will benefit from water projects to pay for them, facilitating the acquisition of more capital than would be possible out of current revenue alone. Also, to the extent that expenditure needs vary annually, debt financing permits the impact on government budgets to be spread out more evenly by scheduling repayments so that they do not fluctuate radically from year to year.

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This study is based on two premises: first, that the issuance of debt is the most appropriate method to finance long term water projects and, second, that state governments would prefer to avoid additional financing costs completely or, at least, reduce them. Given these premises, the financing problem is seen as one that either reduces the cost of debt and/or results in more efficient use of existing facilities. As we shall see later these are not mutually exclusive points. Looking at the financing and institutional alternatives from this perspective, however, makes a very complex problem manageable. In the remainder of this paper it is assumed that the reader is familiar with the main factors that affect the cost of the debt issued by state governments. This understanding is necessary in order to evaluate the policy options of state governments.

We will analyze the following state options: the use of general obligation and revenue bonds to fund grants or loans to local governments, credit enhancements that include state guarantee of local debt, private bond insurance, letters of credit, lines of credit, and the establishment of bond banks, planning and technical assistance, and clarification of water rights. Finally, we conclude with a survey of current state activities in these areas.

Grant and Loan Programs

Many states use the revenue collected from their bonds and general tax revenues to issue grants and loans to local governments for water projects of various kinds. The source, as well as the form, in which it is given to local governments affects both efficiency and equity. The use of current tax revenues to finance water projects tends to result in inequities with respect to both current vs. future beneficiaries and current beneficiaries vs. current taxpayers. Many water projects require substantial up-front capital, but generate benefits which accrue for many years after the project is completed. To finance these projects from tax revenue on a pay-as-you-go basis means that current taxpayers will pay substantially more relative to the benefits they receive than future taxpayers. This is equivalent to current taxpayers subsidizing future beneficiaries.

The use of tax revenue to finance water projects also results in subsidization of beneficiaries by current taxpayers who do not benefit from the project or benefit only marginally. For example, a flood control project that benefits only a portion of the community but yet is financed from taxes paid by all means that the individuals that¹ benefit from the project are being subsidized by those that do not.

¹Of course, if this project were financed from special taxes that were paid only by the beneficiaries e.g., property taxes levied in an improvement district, this type of subsidization would not occur.

The use of tax revenue to finance projects which generate a vendible output is not very efficient. Projects which generate vendible outputs include water supply, sewer, irrigation, hydroelectricity, and navigation. These are projects where the primary beneficiary of the project is the user. To finance these projects from general tax revenues means that nonusers subsidize users. Besides being inequitable, this arrangement lowers the price of the product to the user, resulting in a use level which is inefficient. That is, because the user pays less than the cost of providing the service he uses more than if he had to pay the full cost. Put another way, the cost of providing the service is greater than the value of the benefit to the user. The use of user fees would mitigate the inequities and inefficiencies associated with this type of financing.

Bond financing of water projects tends to remove the inequities between current and future beneficiaries created when pay-as-you-use financing is used. The way this money is distributed, however, affects efficiency and equity. We will consider two ways in which a state can use the money derived from bond issues, i.e., grants and loans.

The popularity of state loans and grants to local governments no doubt stems in part from the belief that local governments would not be able to afford expensive water projects, if they had to finance them from local revenue sources. This may very well be true, but states must realize that there are alternative ways to help localities fund these projects and the use of grants and loans may result in provision of unnecessarily expensive projects. Generally speaking, grant programs result in greater inefficiency than loan programs. The reason is that grants involve lower costs to the local government than loans and, consequently, tend to lead to larger scale projects than if the locality had to pay for a part or all of the financing costs. Financing local water projects with state grants also tends to increase interest rate on bonds issued by local governments. The reason is that the local government becomes more dependent for its financial health on the actions and financial health of the state. This increases the perceived risk of default to the bond buyers and generally results in higher yields (Smith, 1984).

An idea which has become increasingly popular in recent years is the use of revolving funds to issue loans or grants to local governments. Revolving funds can be financed initially from a variety of sources, including bonds and general tax revenues. But no matter what their source of funding, they do not tend to have the adverse effects on bond yields that grants financed from other sources have. The reason for this difference is that revolving funds, once capitalized, tend to be insulated from political pressure. Thus, grants financed in this way are less subject to political whims. The position of the locality to repay its debt is not imperiled and the risk of default is not changed.

Credit Enhancements

One way the state can help localities directly reduce their costs of credit is through various types of credit enhancements. The credit enhancements we will discuss are state guarantee of local debt, purchase of private bond insurance, letters and lines of credit, and bond banks. Each of these are aimed at lowering credit costs but not all do so equally and some merely redistribute, rather than reduce, costs.

A state may choose to use its powers to guarantee the debt of its localities. In so doing, the credit rating of the state is generally substituted for that of the locality. Localities whose bond ratings are as high or higher than the state's rating would not benefit from this arrangement. Moreover, although guarantees would improve the creditworthiness of some local issues, then would do so at the risk of a deterioration in the state's rating (Peterson and Hough, 1983).

The state may also choose to use its resources to purchase bond insurance for local issues. Bond insurance is purchased from a company such as the Municipal Bond Insurance Association (MBIA) or the American Municipal Bond Assurance Company (AMBAC) for a one-time fee that can range from 1 to 2 percent of the amount guaranteed depending on the creditworthiness of the issuer. The main advantage of a bond guarantee is that, unlike a state guarantee of debt which will change the bond rating of the locality to that of the state, bond insurance will result in an automatic AAA rating from Standard and Poors. Moody's does not upgrade their rating to reflect bond insurance.

The state may also consider as an option paying the fees of establishing a letter of credit for the bond issues of its localities. Letters of credit (LOC) pledge a bank's credit to pay debt service on an issuer's debt in return for an annual fee of $\frac{1}{2}$ to 1 percent. In effect, the locality would purchase the bond rating of the bank which is usually rated at least AA. This arrangement doesn't make sense for every locality. In particular, it is not worthwhile if the annual fee exceeds the savings from lower yields. Although a locality that must pay for a LOC is unlikely to enter into this arrangement if its costs to obtain the LOC exceeds the savings in debt service, a locality that is financed from state funds is more likely to obtain a LOC even though it is uneconomic to do so. States which agree to purchase LOCs for its local governments must therefore put some safeguards to insure that costs do not exceed savings.

A line of credit is a more restricted type of support than a letter of credit. Whereas LOCs enhance an issuer's credit quality and liquidity, a line of credit merely enhances its liquidity. The basic difference stems from the fact that under a LOC the bank makes an irrevocable pledge to issue credit to the bond issuer should he need it to pay off the bond. If it becomes necessary to call upon the LOC because of insufficient cash flow a loan is created by the bank. This loan is generally made at a percent of prime but at a rate which generally exceeds the tax exempt rate. A line of credit, on the other

hand, is not irrevocable. Banks do not have to extend credit if they deem the loan unacceptably risky. Although lines of credit are less expensive than LOC they don't enhance the credit rating (Peterson and Hough, 1983).

Some states have established bond banks to help localities reduce their cost of borrowing. In effect, these banks pool risks and underwriting costs, which theoretically is supposed to reduce borrowing costs. However, these banks have not worked this way in practice. At best, they appear to redistribute borrowing costs among municipalities. It has been estimated that bond banks reduce the borrowing costs of only low quality borrowers (BAA) and increase it for higher quality participants (Cole and Millar, 1982).

Planning and Technical Assistance

Many local governments are not equipped to undertake the necessary steps to efficiently plan and implement financing strategies to realize efficient and equitable funding of its water projects. This is an area where the state can provide invaluable assistance in helping the locality evaluate the economic and financial feasibility of planned projects in addition to helping it implement the plan. States currently engage in technical assistance and supervision programs designed to facilitate the issuance of bonds, to encourage responsible debt management, and to improve credit ratings. In addition, states can aid local governments that plan to "privitize" water projects, that is, they plan to transfer ownership or management to the private sector. This change is sufficiently complex at the local level to demand some assistance from the state.

Statutory and Regulatory Reform

States can examine their laws and regulations to see if they promote low cost financing of water projects. One important influence on the cost of credit is the specification of water rights within the state. It is important in determining the financial capacity of the local government to repay its outstanding debt obligations and, hence, is important in determining its bond rating.

Water rights are not often considered important determinant of financing costs but a secure and stable water supply, as defined by current water law, is necessary for low cost financing (Lamb and Rappaport, 1980). The material that follows discusses two current issues that can influence water costs, i.e., uncertainty of future water rights, and definition and transferability of water rights.

Many water projects have expected lifetimes of several decades, but uncertainty about who has the right to use the water can adversely affect financing costs that reflect the increased financial risks borne by the bond holders. An example of this uncertainty is the claim by Native Americans that their water use takes precedence over

most others according to a 1908 Supreme Court case. Obviously the uncertainty jeopardizes future water supply and with it, the capability of state and local governments to meet their financial obligations on projects involving this disputed water.

Another aspect of water rights that is likely to reduce the cost of financing is the transferability of water rights. From an economic standpoint permitting voluntary water transfers is likely to facilitate a more efficient allocation of water resources. If transfers are voluntary they will occur only when the value of the water to the prospective seller is less than the value of the water to the prospective buyer. Because water would be transferred from lower-valued to higher-valued uses, this transfer will result in increases in net benefits of the water project.

Flexibility to transfer water helps reduce financing costs in two ways. First, it helps to mitigate the financial risk from uncertainty. Like most other projections, the projections of water use over a long period of time are subject to error. For water projects this means that actual demand may not be equal to projected demand, i.e., the locality may find that it either has too much or too little water to satisfy its demands. If water transfers are permitted, however, this is less likely to happen because those jurisdictions with less demand than anticipated can sell to those with more demand (Smith, 1984).

Water transfers also improve the economic health of an area by reducing the scale of water projects. They permit smaller scale water projects to satisfy the demands of prospective users by more efficiently allocating water among the users (DeHaven, 1963).

Current State Activities

Previous material in this section discussed in general terms the options states face to reduce financing costs of water projects. We will now discuss what options states have exercised. Information was gathered from various public documents and a mail questionnaire. The tables which follow show state grant and loan programs, the source of government financing for all water projects, and the extent of planning and technical assistance to local governments. A close examination of these exhibits reveals that states pursue a wide variety of programs in financing water projects. It is not the purpose of this report to evaluate the program of any state but rather to enumerate and evaluate the various options that states can pursue in financing water projects.

In summary, states can pursue a variety of options to finance water projects. These options include grants and loans, credit enhancements, planning and technical assistance, and reform of statutes defining water rights. Of these options the most likely to reduce the cost of credit include credit enhancements, planning and technical assistance, and reform of statutes defining water rights. Grants and

TABLE 1
STATE AID TO LOCAL GOVERNMENTS FOR WATER DEVELOPMENT*

State	Sources of Funds for Grants/Loans					Loan Guarantees
	General Revenues	G. O. Bonds	Revenue Bonds	Bond Bank	Other**	
Alabama	X	X	X		X	
Alaska	X	X		X	X	X
Arizona	X					
Arkansas	X	X			X	
California		X				
Colorado	X	X			X	
Connecticut	X	X				X
Delaware						
Florida	X				X	
Georgia	X	X			X	X
Hawaii						
Idaho	X	X			X	
Illinois	X					
Indiana					X	
Iowa						
Kansas		X				
Kentucky						
Louisiana	X	X			X	
Maine	X	X		X	X	
Maryland		X			X	
Massachusetts		X			X	
Michigan					X	X
Minnesota	X					X
Mississippi						
Missouri	X					
Montana					X	X
Nebraska	X				X	
Nevada						
New Hampshire		X		X	X	
New Jersey		X			X	
New Mexico	X				X	
New York	X					
North Carolina		X			X	
North Dakota				X	X	
Ohio	X	X			X	X
Oklahoma			X		X	

TABLE 1 (Cont.)

State	Sources of Funds for Grants/Loans				
	General Revenues	G. O. Bonds	Revenue Bonds	Bond Bank Other**	Loan Guarantees
Oregon		X			
Pennsylvania		X			
Rhode Island	X				X
South Carolina					
South Dakota	X				X
Tennessee		X			
Texas	X	X			X
Utah	X	X			X
Vermont		X		X	X
Virginia					X
Washington		X			X
West Virginia	X				
Wisconsin	X	X			
Wyoming					X

* This information may be incomplete because not all states responded to questionnaire.

**Includes special fees and taxes, user charges, and revolving fund.

Sources: U.S. Army Corps of Engineers (1984) and questionnaire.

STATE CREDIT ASSISTANCE ACTIVITIES*

[illegible]

TABLE 2 (Cont.)

	NV	NH	NJ	NM	NY	NC	ND	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VT	VA	WA	WV	WI	WY	Totals
State Supervises or Collects Data on Local Government Debt Issues	X	X	X	X	X	X	X	X	X	X					X	X		X	X		X			24
Collect and Disseminate Data	X	X	X	X	X	X	X	X		X					X	X								22
Maintain Data File	X	X	X	X	X	X	X	X		X					X									
Prescribe Official Statement Contents																								14
Review Local Bond Issue																								19
Approve Local Bond Issue																								9
Help Market Local Bond Issue																								9
State Provides Technical Assistance on Local Debt Management																								
Help With Official Statement																								15
Provide Data to Issuers & Others																								23
Help Evaluate Bids																								8
Issue Bulletins, Pamphlets, Manuals																								12
Conduct Seminars or Conferences																								12

*This information may be incomplete because not all states responded to questionnaire.

Source: U.S. Army Corps of Engineers (1984) and questionnaire.

loans, although very popular, are likely to increase the cost of financing and serve to redistribute costs among local governments particularly if they are financed with taxes. This is also true of state supported bond banks which are used to finance local water projects.

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