entitled to reasonable beneficial use of surface and/or groundwater adjacent to or underlying their land. Reasonableness is determined by nonimpairment of other landowners' rights to the same body of water. Beneficial use is generally based on a set of water use conventions or priorities set out in state water statutes or established in case law. The riparian right to use water is inseparable from the land.

Water law based on prior appropriation, used generally in states west of the Mississippi, provides the right to use water to anyone who diverts and makes beneficial use of it, regardless of the place of use or ownership of adjacent lands. Permits for water use are issued at the state level on a first-come-first-served basis. In some states, however, some water uses are more beneficial than others and thus receive a full appropriation of the use of the water while other, less beneficial uses may receive none. When water is put to beneficial use, the rule of "first in time, first in right" prevails. That is, all those water rights that were acquired earlier are senior to those acquired at a later time.

New state financing or cost-sharing provisions could interact with water law in two ways. First, new development could not impair existing water rights. Second, if new water rights from state-financed storage projects were allocated according to users' willingness to pay for water--a market-based allocation (to comply with a user-fee approach to cost sharing, for example)--legal conflicts could arise with both the prior appropriation and riparian doctrines. Nonimpairment problems would be more closely tied to the issue of who finances water development, while problems of a market-based approach to allocation would be tied to the issue of who actually pays for a project.

Impairment of Existing Water Rights. Potential problems of impairment of existing water rights could arise regardless of the source of financing. In fact, if the state, rather than the federal government, supplied the project financing and water right conflicts did ensue, equitable resolution would probably be easier to secure because the state would be in the best position to compensate those affected.

Federal agencies can retain considerable control over water developed from federal projects. Prompted by a federal/state dispute over control of project water at the Bureau's New Melones project in California, the U.S. Supreme Court in 1978 held that the Congress has constitutional power to retain complete control over water from federal projects even if such control preempts the states' use of water. Under the statutes authorizing Bureau of Reclamation projects, however, the federal government must comply with all conditions imposed by state water permits. Therefore, failing Congressional action, the question of controlling allocation falls on the courts. State financing and development of strictly state water projects would avoid reliance on the courts and the federal political process to determine who may allocate project water and under what conditions. If states financed water projects, they would also control project water allocation.

Conflicts With State Water Allocation Doctrines. The implications of substituting market allocation for existing state water allocation mechanisms are unclear. There are both precedents for and restrictions on this type of approach in the West and in the East. In an eastern riparian state, for example, water rights can be sold or transferred so long as the test of reasonable use is met and the water right to be sold is for use on riparian land. One could envision that a purely market-based allocation might result in riparian water being used on nonriparian lands, thus creating a conflict with the doctrine. Appropriation water rights may also be sold either with the sale of land upon which the water is used or separately.[1] In some western states, however, when a water right is sold, it loses senior priority. Thus, it could become virtually worthless during periods of low stream flow when more senior water rights holders would deplete available supplies. In some appropriation states, there are constitutional, statutory, or administrative prohibitions preventing the sale of certain water rights.

To be sure, neither western nor eastern states currently have institutions or water laws that are well-suited to purely market-oriented allocations. But states would play a major role in fostering such policies; and if new water development was conditioned by users' willingness to pay for investments made on their behalf, a market-based allocation might be the only way to meet future water needs.

Interstate Allocation

Increased state financing or repayment responsibilities would not be constrained by a prior agreement among states sharing interstate waters. A state would be expected to finance only that proportion of an interstate project's cost that corresponded to the state allocation of water. Similarly, users could be expected to repay only that portion of a project corresponding to their use relative to all available water.

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1. Originally, most appropriation states viewed the water right as an appurtenance to the land on which it was used, and would not permit the sale of water rights separate from the land. Today, most states have relaxed this rule.

When water rights conflicts arise among states sharing common river systems, three methods for apportioning the resource are common: interstate compacts, Supreme Court apportionment, or Congressional apportionment. By far the most common method is the interstate compact. The states within a river basin negotiate an apportionment system among themselves, and the negotiated agreement, or compact, is binding upon the states when approved by all concerned state legislatures and the Congress. Second, the U.S. Supreme Court has occassionally made an "equitable apportionment" of interstate waters among the states when they have been unable or unwilling to negotiate among themselves. The third mechanism, an act of Congress, has only been used in one instance. 2/

Regardless of who financed a water project, the terms of a prior interstate apportionment would have to be respected. In the absence of an interstate agreement, if a water project financed in one state adversely affected water use in a downstream state, conflicts could arise that would have to be settled in court. Again, such conflicts could arise regardless of who financed the development.

Limitations on Financing Instruments

Other legal impediments include limited legal authority to levy user fees, statutory or constitutional prohibition against debt financing, and statutory ceilings on state bonded indebtedness or interest rates allowable on state bonds. In addition, some state constitutions expressly prohibit their legislators from encumbering future state appropriations. Consequently, some states that fund water projects out of yearly appropriations cannot enter into financial agreements with a federal or interstate agency that bind the state to appropriate future years' revenues.

Many of these concerns could be addressed by appropriately wording legislation either at the federal or state level, creating substate entities not bound by state-level prohibitions, or establishing special water development funds that are independent of yearly appropriations. For example, although the Kansas Constitution prohibits debt financing at the state level, the state could set up a quasipublic entity that could issue bonds outside the constitutional limitations.

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2. For additional information, see: The National Water Commission, A Summary Digest of State Water Laws (U.S. Government Printing Office, 1973); and Wells A. Hutchins, Water Rights Laws in the Nineteen Western States, Volume III, U.S. Department of Agriculture Miscellaneous Publication No. 1206 (1977).

Faced with constraints on bonded indebtedness, many states have created new institutions with special authority to issue debt instruments not bound by state-level restrictions. In some states, general obligation bonds are restricted, but revenue bonds are not. Nebraska, prohibited from issuing general obligation bonds by its constitution, plans to circumvent this restriction by issuing revenue bonds.

Interest rate and indebtedness ceilings are routinely adjusted by state legislatures to improve marketability of state bonds. For example, in 1981, 25 states made various changes in the statutory interest rate ceilings on their state and local bonds to accommodate sharply rising interest rates. This was the second consecutive year in which at least half the states altered interest rate ceilings on bonds. Twenty-nine states have no interest rate ceilings on general obligation bonds, and 24 states have no ceilings on revenue bonds.

For some types of water resource projects, it is questionable whether states have clear authority to levy user fees to repay the states' investments. For example, when a state develops state water for irrigation, hydropower, or municipal and industrial supply, the historic vendibility of the product warrants charging a fee for its use. But user fees to pay a state's share of a harbor or inland waterway dredging project could be interpreted as a tax on articles exported from the state, which is prohibited by the U.S. Constitution (Article I, Section 9, Clause 5). User fees, however, can also be interpreted as payment for the costs incurred in servicing trade at individual ports or waterways, much like existing port fees. Regardless of the legal interpretation, authorization to levy fees to recover states' financial contributions to water projects may be easily incorporated into the legislation that authorizes changes in cost sharing for federal/state water projects.

FINANCIAL IMPEDIMENTS

Financial impediments to increased state contributions to cost sharing generally stem from a state's perceived inability to raise sufficient development capital to meet its water needs. While all infrastructural needs of states require substantial capital for development and maintenance, perhaps no other need is more critical to all economic sectors than water development. Over the past five years, as federal financial support for water projects has diminished, most states that have confronted this dilemma have devised or are planning now for new ways to finance needed water projects. States rich in mineral or energy resources, with their lucrative tax sources, will probably have a competitive advantage in financing new water development--but these states have a competitive advantage in financing anything. More important, a number of new financing mechanisms and changes in old systems are readily available to all states.

Many states impose limitations on the authority of the state legislatures to borrow (39 states) and to spend (14 states). Spending limitations are a relatively recent development, the first of which was imposed by New Jersey in 1976. Debt limitations may be any or all of the following three types: limits on total state indebtedness, interest rate ceilings on state general obligation bonds, or constitutional or statutory prohibitions against debt financing. Although some states have no expenditure limitations, they do impose such limitations on local governments. Table 13 summarizes debt limitations, and Table 14 summarizes expenditure limitations. While these limits serve as fiscal goals for states and local governments, changes in cost sharing for water projects, coupled with demand for new water supplies, would probably motivate most state legislatures to amend their debt or expenditure limitations by small increments, if necessary.

While Table 14 only notes expenditure limitations, revenue limits are also in effect in 12 states and in almost all local governments. Generally, there are more exceptions to the limits on total revenue that may be collected than there are on expenditures. These exceptions tend to render revenue limitations nonbinding and, therefore, not constraining in most instances. Many local governments have full disclosure or public hearing requirements, at a minimum, before they may change tax rates, but this is considered only a mild impediment to raising additional revenue at the local level.

Statutory interest rate ceilings are a second type of limitation on state debt financing, although in practice states will increase or decrease rates to accommodate changing market conditions. As of January 1982, only three states (Alabama, Oklahoma, and South Carolina) had statutory general obligation bond interest rate ceilings below 10 percent (see Table 15). Four states had no authorization for general obligation bonds (Idaho, Indiana, Kansas, and Missouri), while 29 states had no ceilings on state general obligation bonds.

Limits on bonded indebtedness are handled differently by states that have confronted this problem. Indiana conforms to its prohibition against long-term debt financing. Other states such as Nebraska, which is limited to $100,000 of state debt, established water or natural resource districts with taxing authority for development and maintenance of water resources, and thus relieved the state of some financial responsibility. In other states, separate quasipublic water resources boards have been created that have bonding authority outside any constitutional or statutory debt limitations.

TABLE 13. STATE DEBT LIMITS

State	Total State Debt Limitation	Source	Override by Popular Vote
Alabama	$300,000	Constitutional	No
Alaska	Popular vote required for any debt	Constitutional	No
Arizona	$350,000	Constitutional	No
Arkansas	Popular vote required for any debt	Statutory	No
California	$300,000	Constitutional	Yes
Colorado	$100,000	Constitutional	No
Connecticut	None	---	No
Delaware	150 percent of state general fund revenue	Constitutional	No
Florida	None	---	No
Georgia	Maximum of 15 percent total revenue in preceding fiscal year	Constitutional	No
Hawaii	Maximum of 18.5 percent general fund revenue of average of 3 preceding years	Statutory	No
Idaho	$2,000,000	Constitutional	Yes

(Continued)

SOURCE: Council of State Governments, The Book of the States--1982/1983.

TABLE 13. (Continued)

State	Total State Debt Limitation	Source	Override by Popular Vote
Illinois	3/5 vote total membership of each house or majority popular vote to issue new debt	Constitutional	3/5 vote of legislature or majority popular vote
Indiana	None except casual debt in revenue payment of interest and defense	Constitutional	No
Iowa	$250,000	Constitutional	No
Kansas	$1,000,000	Statutory	Yes
Kentucky	$500,000	Constitutional	Yes
Louisiana	None	---	No
Maine	$2,000,000	Constitutional	Yes
Maryland	None	---	No
Massachusetts	None	---	No
Michigan	None	---	No
Minnesota	For specified purposes only	Constitutional	No
Mississippi	150 percent of revenue of any 4 preceding years	Constitutional	No
Missouri	$1,000,000	Constitutional	Yes
Montana	None	---	No
Nebraska	$100,000	Constitutional	No

(Continued)

TABLE 13. (Continued)

State	Total State Debt Limitation	Source	Override by Popular Vote
Nevada	1 percent of assessed valuation of the state	Constitutional	No
New Hampshire	None	---	No
New Jersey	1 percent of appropriations	Constitutional	Yes
New Mexico	$200,000	Constitutional	Yes
New York	Popular vote required for any debt	---	No
North Carolina	None	---	No
North Dakota	Limit on basis of value of state property	---	No
Ohio	$750,000	Constitutional	(By constitutional amendment)
Oklahoma	None	---	No
Oregon	$50,000 plus percentage of property value for some purposes	Constitutional	No
Pennsylvania	175 percent of average annual tax revenues in previous five fiscal years	Constitutional	Yes
Rhode Island	$50,000	Constitutional	Yes

(Continued)

TABLE 13. (Continued)

State	Total State Debt Limitation	Source	Override by Popular Vote
South Carolina	Maximum annual debt on general obligation bonds may not exceed 7 percent of general revenues for preceding fiscal year	Constitutional	No
South Dakota	$100,000	Constitutional	No
Tennessee	None	---	No
Texas	$200,000	Constitutional	No
Utah	Percentage of property value	Constitutional	No
Vermont	None	---	No
Virginia	Popular vote required for any debt	Constitutional	No
Washington	Percentage of revenues	Statutory	Yes
West Virginia	No debt allowed at all	---	No
Wisconsin	Percentage of property value for specific purposes only	---	No
Wyoming	Percentage of property value and taxes	---	No

TABLE 14. STATE AND LOCAL EXPENDITURE LIMITS

	STATE				LOCAL			
	Source	Date	Description	Override	Source	Date	Description	Override
Alabama			None				None	
Alaska			None				None	
Arizona	Constitutional	1978	Expenditures from all tax revenue limited to 7 percent of state personal income	2/3 vote of state legislature	Constitutional	1980	Tied to price deflator and population change (some exclusions)	Not reported
Arkansas			None				None	
California	Constitutional	1979	Increases in some state appropriations limited to increase in cost of living and population	Either by legislature or voters	Constitutional	1979	If property tax over 1.2 mills, increases limited to rise in population and cost of living	Not reported
Colorado	Statutory	1977	Increase in expenditure from general revenue fund limited to 7 percent over previous year	May be amended or repealed by state legislature			None	
Connecticut			None				None	
Delaware	Constitutional	1980	General fund appropriation limited to 98 percent estimated revenue for same year	60 percent vote of each house			None	

(Continued)

SOURCE: Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism, 1980-1981.

TABLE 14. (Continued)

	STATE				LOCAL			
	Source	Date	Description	Override	Source	Date	Description	Override
Florida			None				None	
Georgia			None				None	
Hawaii	Constitutional	1978	Increases in general fund expenditures limited to increase in state personal income	2/3 vote of legislature with approval of governor			None	
Idaho	Statutory	1980	General fund expenditure limited to 5.33 percent of total personal income	Can be amended or repealed			None	
Illinois			None				None	
Indiana			None				None	
Iowa			None				None	
Kansas			None				None	
Kentucky			None				None	
Louisiana			None				None	
Maine			None				None	
Maryland			None				None	
Massachusetts			None				None	

TABLE 14. (Continued)

	STATE				LOCAL			
	Source	Date	Description	Override	Source	Date	Description	Override
Michigan			None				None	
Minnesota			None				None	
Mississippi			None				None	
Montana			None				None	
Nebraska			None				None	
Nevada	Statutory	1979	Pecentage rise in executive request limited to inflation and population growth; legislative appropriations not limited	Not reported	Statutory	1981	Increases in local government budgets limited to state estimates of property and sales tax	May be exceeded for emergencies and other reasons
New Hampshire			None				None	
New Jersey	Statutory	1976	Expenditure from capital and operating fund limited to rise in state personal income over prior 2 years; debt service excluded	By referendum	Statutory	1976	Limited to 5 percent per year; debt service excluded	By referendum
New Mexico			None				None	
New York			None				None	
North Carolina			None				None	
North Dakota			None				None	

(Continued)

TABLE 14. (Continued)

	STATE				LOCAL			
	Source	Date	Description	Override	Source	Date	Description	Override
Ohio			None				None	
Oklahoma			None				None	
Oregon	Statutory	1979	Growth in state expenditures per biennium limited to rise in state personal income in past 2 years; debt service and tax relief excluded	May be amended or repealed by legislature			None	
Pennsylvania			None				None	
Rhode Island	Statutory	1979	All budget requests limited to 8 percent annual increase	Considered nonbinding			None	
South Carolina	Statutory	1980	Increases in state expenditures limited to growth in state personal income over past 3 years	May be amended or repealed by legislature			None	
South Dakota			None				None	
Tennessee	Constitutional	1978	Increases in expenditures from tax sources limited to growth of state personal income	Not reported			None	
Texas	Constitutional	1978	Increase in appropriations from non-	Emergency override by			None	

(Continued)

TABLE 14. (Continued)

	STATE				LOCAL			
	Source	Date	Description	Override	Source	Date	Description	Override
Texas (cont.)			dedicated sources limited to growth in state personal income	State legislature				
Utah	Statutory	1979	Increase in appropriations limited to 85 percent rise in state personal income; debt service or user charges exlcuded	2/3 vote of each house in emergency			None	
Vermont			None				None	
Virginia			None				None	
Washington			None				None	
West Virginia			None				None	
Wisconsin			None				None	
Wyoming			None				None	

TABLE 15. STATUTORY INTEREST RATE CEILINGS ON STATE AND LOCAL BONDS (In percents)

State	State General Obligation	State Revenue Bonds	Local General Obligation	Local Revenue Bonds
Alabama	8	a/	Various	Various
Alaska	10	10	Various	Various
Arizona	None	None	None	None
Arkansas	a/	a/	6	Various
California	11	b/	12	Various
Colorado	None	None	None	None
Connecticut	None	None	None	None
Delaware	None	None	Various	Various
Florida	Various	Various	Various	Various
Georgia	None	None	None	9
Hawaii	12	None	None	None
Idaho	b/	a/	Various	Various
Illinois	Various	b/	Various	Various
Indiana	b/	b/	None	None
Iowa	Various	Various	Various	Various
Kansas	b/	None	12	12
Kentucky	None	None	None	None
Louisana	None	None	None	None
Maine	None	a/	None	None
Maryland	None	Various	Various	Various
Massachusetts	None	None	None	None
Michigan	None	13	13	13
Minnesota	None	None	12	12

(Continued)

SOURCE: Weekly Bond Buyer (January 19, 1982).

a. None issued.

b. None authorized.

TABLE 15. (Continued)

State	State General Obligation	State Revenue Bonds	Local General Obligation	Local Revenue Bonds
Mississippi	Various	Various	9	Various
Missouri	b/	b/	14	14
Montana	None	None	None	None
Nebraska	None	None	None	None
Nevada	Various	Various	Various	Various
New Hampshire	None	None	None	None
New Jersey	None	None	None	None
New Mexico	10	12	10	12
New York	None	b/	None	b/
North Carolina	None	None	8	None
North Dakota	None	None	None	None
Ohio	None	None	Various	None
Oklahoma	6	14	10	14
Oregon	13	None	None	None
Pennsylvania	None	None	None	None
Rhode Island	None	a/	None	a/
South Carolina	7	7	7	7
South Dakota	None	a/	12	12
Tennessee	18	18	18	18
Texas	10	b/	15	15
Utah	None	None	None	None
Vermont	None	a/	None	None
Virginia	None	None	None	None
Washington	None	None	None	Various
West Virginia	None	8	10	10
Wisconsin	None	None	None	None
Wyoming	12	12	12	12

Usually they issue revenue bonds, rather than general obligation bonds. When responsibly planned, issuing revenue bonds, coupled with recovering costs by selling project vendibles or collecting user fees, can meet capital improvement needs for many types of water projects without jeopardizing the financial integrity of the issuing jurisdiction. Finally, 12 states may override their constitutional or statutory debt limit with a majority popular vote. Any constitutionally set debt limit can always be changed by a constitutional amendment; that mechanism, however, involves much more time and effort than some of the others discussed.

Perhaps the most widely used instrument to raise development capital under state debt limitations has been the revenue bond. A form of non-guaranteed debt, revenue bonds pay interest and principal exclusively from the sale of products associated with development--in this case, municipal and industrial water use payments, sewer revenues, irrigation water use fees, and so on. If a water development project yields a vendible product and that product is priced correctly over the total project life, revenue bonds are probably the most useful financing instrument available to states and to units of local government.

Finally, severance taxes on extraction of nonrenewable resources, such as coal, oil, natural gas, and minerals, can add a valuable source of water development capital. In 1979, about $3.2 billion in severance taxes was collected by the 27 states that had a severance tax. The Advisory Commission on Intergovernmental Relations estimated that, for the 23 states that do not collect severance taxes, about $218 million could be collected annually if severance taxes were initiated at a level equal to the national average of severance tax rates currently used in the other 27 states. 3/

INSTITUTIONAL IMPEDIMENTS

Administrative problems that may restrict states or local governments from meeting increased financing or cost-sharing responsibilities can be loosely termed "institutional impediments." These include institutional arrangements, information transfer between levels of government, and other intergovernmental arrangements.

In large part, the composition of state water agencies has been influenced by federal categorical funding for water quality and water

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3. Advisory Commission on Intergovernmental Relations, Tax Capacity of the Fifty States: Methodology and Estimates (March 1982).

resources development and management during a period that was oriented primarily toward meeting broad national goals through capital spending. To meet the goals of the federal clean water program, for example, the states were provided an incentive to form "state EPAs" through which the program could be implemented and federal funds could be disbursed. Similarly in water resources, state agencies have developed partly around federal funding programs--the SCS's Small Watershed Program, the Corps' flood control program, and so on. With the achievement of many broad national goals, however, national water resources priorities appear to be moving away from new project construction and toward rehabilitation and efficient maintenance and management of existing projects. With most of the best sites in major river basins already developed, new water project construction appears to be headed toward smaller projects of more local concern.

Accompanying these shifts, the Congress has demonstrated an interest in a greater state financing and cost-sharing role. Categorical funding, which was useful to stimulate construction of selected projects, could lose favor to formula-based funding or block grants, both of which tend to support state priorities rather than individual federal projects. The Domenici-Moynihan proposal (S. 621) in the 97th Congress was one attempt to do just this. More recently, the Stafford proposal (S. 1031) for an increased state financing and cost-sharing role in Corps projects also emphasizes a broader state role in water resources development. Regardless of the specific legislative proposal, however, a shift toward greater state and local responsibilities in water programs could result in institutional changes. Existing state institutions are not now matched to these new responsibilities, although in some cases, small changes would suffice.

Institutional arrangements for planning and management at the state level vary from complete consolidation of quantity and quality functions to complete disaggregation of administrative units according to narrow functional areas. If states are to be the focal point for financial and administrative management of new water projects, those states with centralized institutional arrangements or some cross-cutting coordinating water board will have fewer problems adjusting to the new system. Three states--Delaware, Florida, and Washington--operate all water quantity and quality planning and management under one agency. This type of comprehensive, integrated approach to water resources development within a state probably will be well adapted to increased state cost-sharing and management responsibilities.

On the other hand, 12 states operate various aspects of water planning and management through several agencies, with little or no coordination between quality and quantity activities or among quantity activities alone. They are Alabama, Illinois, Kentucky, Louisiana, Maine, Michigan, New

Hampshire, New Jersey, New Mexico, North Carolina, Ohio, and Rhode Island. In general, these states will probably undergo relatively more administrative or institutional change as a result of changes in financing or cost sharing that place additional responsibility on the states.

The other 35 states fall somewhere between complete centralization and decentralization of institutional responsibilities, and it is difficult to predict the degree to which their institutional composition will impede a transition toward new responsibilities.

Institutional consolidation alone, however, does not guarantee a comprehensive, coordinated approach to water resources management. Other coordinating management or planning bodies may serve the same function. For example, in Minnesota quantity and quality functions are institutionally separate as are several subfunctions within the quality area. The Minnesota Water Planning Board, however, has cross-cutting coordination responsibilities and has been relatively successful in carrying out its mandate.

Another potential institutional impediment could be the financial and technical assistance link between state and substate governments. In some states, this link is quite strong--for instance, in California a wide variety of technical and financial assistance programs are available to counties and cities. But in other states, particularly in the Northeast, local jurisdictions are much more autonomous, and less assistance is available. As financial and management responsibilities are passed to the states from federal agencies, states might begin to assume the position former held by the federal government, and local governments or special water districts would take on new responsibilities, perhaps not unlike those formerly held by the states. With a new emphasis on the relationship between state and local governments, especially in financing and repaying water investments, states might be faced with new responsibilities, such as local technical assistance programs, new loan or grant programs to local governments, bond-banking, dedicating state aid for local debt service, and assisting local governments with creative financing techniques. Although some states are well-equipped to take on these responsibilities or have already developed several of the above programs, these concepts are new to many other states and demands by local jurisdictions for increased state assistance would undoubtedly escalate. 4/

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4. See National Conference of State Legislatures, How States Can Assist Local Governments with Debt Financing For Infrastructure (June 1982); and Congressional Budget Office, Public Works Infrastructure: Policy Considerations for the 1980s (April 1983).