Within the Hundredth Meridian: Western States and Their River Basins in a Time of Transition

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WITHIN THE HUNDREDTH MERIDIAN:
WESTERN STATES AND THEIR RIVER BASINS
IN A TIME OF TRANSITION

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BOUNDARIES AND WATER:
ALLOCATION AND USE OF A SHARED RESOURCE

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WITHIN THE HUNDREDTH MERIDIAN:
WESTERN STATES AND THEIR RIVER BASINS IN A TIME OF TRANSITION*

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I. INTRODUCTION

After many years of looking to big dams to supply water in arid areas, there is a consensus that we must make better use of water from existing facilities instead of building new storage dams. As a Western Governors’ Association working group put it recently, “promoting water use efficiency at all levels of government is a critical task of water policy in the next decades of western water use. . . . [T]here is broad awareness in the West that the region has entered a different era in water, an era characterized by enhanced management, increased use of non-structural solutions to meet demand . . . , and cognizance of the growing value of water in non-consumptive, instream uses.”¹ There are many forces pushing us into this new era — the absence of good new dam sites, demands for instream uses, the environmental impacts of dam construction, sharply declining federal funding for water projects, and an increasing awareness that conservation may be less costly than building major new dams. These forces all point to non-structural water solutions — making better use of existing water supplies instead of building new dams — as solutions of first resort.²

The new era, however, will face obstacles of its own. Nonstructural solutions are not inexpensive,³ and they come at a difficult time. The cost of operating and maintaining existing water systems is climb-

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¹ We dedicate this article to our late colleague Jody Lawrence, who taught us much about river basin planning and whose insights would have benefitted this article.

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2. Nonstructural solutions include water transfers, water conservation and salvage, conjunctive use of substitutable supplies, and providing alternative water supplies to senior users. See B. DRIVER, WESTERN WATER: TUNING THE SYSTEM v (1986).

3. See MARSION, THEY BUILT BETTER THAN THEY KNEW, in WESTERN WATER MADE SIMPLE 157, 158 (High Country News 1987) (“The billions spent on this plumbing will now be dwarfed by tens of billions to be spent to modify it, to mitigate its impacts, and to buy out old water users and put the plumbing to new uses. The era of massive construction is about over; the much more expensive era of nudging the river into a modified shape is just beginning.”).
The question addressed in this article is whether western states should play a more direct role in guiding the federal dam system and its hydropower revenues in the new era of nonstructural water solutions. This discussion builds from a precedent that is working in the Pacific Northwest. There, a four-state planning body — the Northwest Power Planning Council — develops plans for energy and fish and wildlife needs for the Pacific Northwest and the Columbia River Basin. These plans are implemented by or through federal agencies and financed by hydropower revenues. The question is whether the Northwest model is adaptable to water problems in other river basins.

II. WESTERN RECLAMATION, FEDERAL HYDROPOWER, AND STRATEGIC PLANNING IN THE PACIFIC NORTHWEST

A. Federal Reclamation and Hydropower Development

Before describing the Northwest system and how it might be adapted to other basins, it is important to understand the development of the federal reclamation and hydropower systems in the West, and how they are interrelated.
1. Western River Basin Development Before the Reclamation Act

Commentators have suggested that large-scale water systems built for irrigation are part of a "hydraulic trap": the infrastructure required to provide water for irrigation, once built, demands extraordinary resources for its maintenance, a corps of experts to operate it, and cheap labor to harvest its fruits. But this was not the view in the later 19th century, when westerners faced the prospect of settling a dry and inhospitable land. The eastern United States, by and large, did not require irrigation; rainfall was sufficient to grow crops. The West raised an entirely new problem. West of the 100th meridian, settlers "encountered an obstacle beyond the power of the individual settler to overcome. This obstacle was aridity — the failure of the rainfall to meet the demands of agriculture." The experience of the Mormons in Utah and others showed that arid lands could be made productive through irrigation, but irrigation could not be accomplished by individuals acting alone; cooperation was required. With hindsight, we may see the antidemocratic, anti-environmental elements of irrigation in sharper relief. To its early proponents, however, the idea of irrigation was a revelation. It offered not only a way to grow food, but a way to organize western society through "associative enterprise." Properly developed, irrigation would promote egalitarian communities, avoid monopolistic land and water practices, and create "a long series of beautiful villages."

Irrigation's early visionaries drew on the hard-headed scientific work of government surveyors such as John Wesley Powell. In the 1870's, Powell proposed to conduct a comprehensive irrigation survey identifying reservoir, ditch and canal sites, and showing what lands were irrigable. Once the survey was complete, irrigable lands would be opened to settlers with suitable acreage limitations. By directing agricultural development to irrigable land, Congress could "prevent mistaken, impossible, or monopolistic irrigation schemes, inefficient use of water, confusion between upstream and downstream rights to rivers, and the failures of small homesteaders."

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7. W. Smythe, The Conquest of Arid America 17 (1907 ed.).
8. See Smythe, supra note 7, at 31; Worster, supra note 6, at 74.
9. Smythe, supra note 7, at 32. As Smythe put it, irrigation is not "merely an adjunct to agriculture. It is a social and industrial factor, in a much broader sense." Id. at 42.
10. Id. at 57.
11. See Worster, supra note 6, at 139. See also Stegner, The Function of Aridity, in Wilderness, Fall 1987, at 16.
In Powell's view, western government should be organized along the natural boundaries of river basins. Settlers within the basins would have the right to store and use the water within basin boundaries, and to organize enterprises to finance irrigation works. Major rivers would be dammed, and large reservoirs would store water on the mainstems of the rivers and in mountainous areas far from farm land. These developments would essentially be self-financing:

[T]he increment of value given to lands by reason of their being irrigated is sufficient to pay the cost of constructing the irrigation works many times over. So there is no need of any Government aid.

Settlers would build their own diversion structures, supplying labor in place of capital. Where capital was essential, they would secure bank loans for larger investments, putting up their land as security. The federal government's role would be interstitial. It would survey lands, set acreage limits on homesteads based on water conditions, and resolve disputes that the basins themselves could not resolve. Otherwise the river basins would be self-governing.

In 1888, as a logical first step for a comprehensive irrigation survey, public lands were reserved from settlement to prevent settlers from occupying prime sites for reservoirs and irrigation works. This provoked a "perfect storm of indignation" from the West, and the irrigation survey was rejected, "stomped to death" by Congress. So was Powell's vision of self-financing, self-governing river basins. Private capital proved too limited and unsteady to finance large irrigation projects, at least at the pace demanded by an impatient country. Powell's engineering plans, however, were taken up and adapted by irrigation advocates, who argued that western irrigation was too large a challenge without federal help.

13. See Worster, supra note 6, at 138.
14. See R. Clark, 2 Water and Water Rights § 110.1, at 118 (1967); Worster, supra note 6, at 134.
16. Worster, supra note 6, at 140.
19. Stegner, supra note 12, at 337.
21. See Smythe, supra note 7, at 144.
2. The Reclamation Program

Turn-of-the-century reclamation promoters had grand visions. At the International Irrigation Congress meeting in 1893, irrigators talked as though the entire public domain could be irrigated, and booed Powell when he told them otherwise. Powell estimated that 100,000,000 acres, or 12 percent of the arid land then in federal hands, might be irrigated. In fact, the reclamation program's contribution to western agriculture has not been as significant as either Powell or the 1893 Irrigation Congress hoped. In 1975, about 37.4 million acres of land were under irrigation in the 17 western states, and of this only 7 million acres, or 20 percent, were irrigated with federally-developed water. The remaining 80 percent of western water supplies, mainly local water diversions achieved at moderate expense, are nonfederal.

The federal reclamation program began in earnest with the enactment of the Reclamation Act of 1902. In the beginning the program was funded modestly. Financing was to come from the proceeds of public land sales, to be repaid by water users within ten years. Repayments would go into a revolving fund from which further reclamation projects would be financed.

The modest scope of the initial program did not last. What began as a self-financed plan to benefit small western farms grew into a program dominated by an "iron triangle" of large-scale agriculturalists, federal reclamation engineers, and Western congressmen who operated the reclamation program as a closed enterprise financed by congressional appropriations. Begun in the hope that proceeds from land sales would suffice to propel the West to agrarian self-sufficiency,

22. Stegner, supra note 12, at 262.
23. Id. at 343; Worster, supra note 6, at 139.
25. See id. at 123; Water and Agriculture, supra note 4, at 17.
the reclamation program became instead a durable dependency of Congress.

Reclamation has been an expensive dependent. Water from reclamation projects is much more expensive than nonfederal sources of water. All told, the federal government has invested more than $54 billion in water projects nationwide, and construction costs may be the least of the burden. Operation and maintenance costs of the federal projects are rising as dams age, reservoirs fill with silt, and canals deteriorate. In 1982 the General Accounting Office painted a stark picture of reclamation’s physical legacy:

Operation and maintenance costs are . . . skyrocketing, thereby taking a larger portion of the (federal) budget . . . . In fiscal year 1982 that cost is expected to exceed $1 billion or almost one-third of the [Army Corps of Engineers] civil works budget. While such costs are already staggering, they can only increase.

The reclamation system also has left a political legacy. In the 1970s, the program began losing its power in Congress. Since 1972, federal funding for new major water projects has been rare, and “the old Congressional alliances that sustained national programs of water supply, electric power, navigation, and flood control are crumbling.” Westerners, accustomed to relying on federal funding for water projects, must look to new sources of funding.

3. The Financial Relationship Between Federal Reclamation and Federal Hydropower

Hydropower generation started out as an incidental benefit of irrigation dams, but later assumed enormous importance in reclamation development. Although the Reclamation Act originally required water users to repay reclamation project costs, this requirement gradually was diluted, so that in most cases irrigators have not paid the full

30. See Mather, supra note 24, at 125-26.
32. Id. at 2.
33. G. Tolleson, BPA & The Struggle For Power At Cost 412 (1987). As a western senator put it recently, “When I came to the Senate there was not a single person on the old Interior Committee on our [Republican] side, or on Senator Melcher’s [Democrat] side, who was not from a Western state. Now where are we? A 1-vote margin.” 133 Cong. Rec. S5989 (daily ed. May 6, 1987) (statement by Senator Hatfield).
34. “The hydroelectric potential of these early projects, so important today, was then often purely secondary and, in the case of the Flood Control Act of 1944 that governs the present case, was nearly forgotten entirely.” United States v. Tex-La Elec. Co-op., Inc., 693 F.2d 392, 393 (5th Cir. 1982).
35. 2 Clark, supra note 14, § 122.1, at 244.
cost of their water.\footnote{Id., § 112.3(C), at 146.} Instead, repayment obligations were determined by the users' ability to pay, with payments spread over lengthy repayment periods at no interest.\footnote{Id., § 123.1, at 255; Roos-Collins, supra note 28, at 784. New reclamation contracts are governed by the Reclamation Reform Act of 1982, 43 U.S.C. §§ 390aa - 390zz-1 (1982).} The remaining costs were accounted for by crediting hydropower revenues to the irrigators' accounts,\footnote{See 2 CLARK, supra note 14, § 123.2(1), at 272; Roos-Collins, supra note 28, at 815 (citing Rucker & Fishback, The Federal Reclamation Program: An Analysis of Rent-Seeking Behavior, in WATER RIGHTS: SCARCE RESOURCE ALLOCATION, BUREAUCRACY, AND THE ENVIRONMENT (T. Anderson ed. 1983). See also REISNER, supra note 29, at 140-42.} and by allocating congressionally-appropriated funds to publicly financed project purposes such as navigation, flood control, or recreation.\footnote{See 2 CLARK, supra note 14, § 122.1, at 244. \"[P]ower has become the principal source of [reclamation program] revenue, paying not only its own costs, but subsidizing a part of the irrigation burden as well. While it is universally understood that power is to pay those costs allocated to irrigation construction which are beyond the ability of irrigators to repay, such an arrangement is nowhere authorized in the general reclamation laws.\" 2 CLARK, supra note 14, § 123.2(1), at 272; U.S. GENERAL ACCOUNTING OFFICE, RECOVERING A PORTION OF FEDERAL IRRIGATION PROJECT CONSTRUCTION COSTS THROUGH DEPARTMENT OF ENERGY ELECTRIC POWER SALES 4-5 (1985).} In this manner, reclamation became a highly subsidized program,\footnote{U.S. GENERAL ACCOUNTING OFFICE, ADDITIONAL INFORMATION CONCERNING IRRIGATION PROJECT COSTS AND PRICING FEDERAL POWER 9 (1985). Of this amount, $8.4 billion is for projects that have been authorized but not built. U.S. GENERAL ACCOUNTING OFFICE, RECOVERING A PORTION OF FEDERAL IRRIGATION PROJECT CONSTRUCTION COSTS THROUGH DEPARTMENT OF ENERGY ELECTRIC POWER SALES 2 (1985).} and hydropower, once viewed as a minor incident of federal projects, became a primary part of reclamation's economic justification.\footnote{Id. See also Energy and Water Development Appropriations for 1988: Hearings Before the Subcomm. on Energy and Water Development of the House Comm. on Appropriations, 100th Cong., 1st Sess., pt. 6, at 1590, 1626, 1667 (1987).}

The hydropower system's financial commitment to the reclamation system is significant, although so far this commitment is largely theoretical. In 1985, the General Accounting Office estimated that $14.1 billion in irrigation costs were scheduled to be recovered through power revenues.\footnote{Id.} As of 1985, however, no hydropower revenues had actually been used to repay reclamation costs.\footnote{Id.} As a general matter, hydropower revenues are not used to actually repay reclamation costs until the cost of hydropower facilities is repaid.\footnote{Id.} One power marketing administration made its first irrigation repayment in 1985, and another plans to begin in 1997.\footnote{Id.} Thus, hydropower reve-
nues have been part of the economic justification for reclamation projects, but so far have not returned much of the federal investment.

4. The Role of the Federal Power Marketing Administrators

Multipurpose federal dams play a significant role in western energy systems. While there are regional variations, overall nearly forty percent of the West's generation capability comes from hydro-power facilities. Federal projects in the West are owned by the U.S. Bureau of Reclamation (51 projects), the U.S. Army Corps of Engineers (26 projects), and the International Boundary and Water Commission (3 projects).

Energy from the federal projects is transmitted and marketed by the U.S. Department of Energy, through five power marketing administrations. The power marketing administrations sell wholesale power to public and private utilities consistent with federal power marketing policy, according to rate schedules approved by the Fed-

47. Sixty-four percent of the West's hydroelectric capacity is located in the Northwest, 23 percent in the Southwest, and 13 percent in the Missouri River Basin. Id.
49. LEE & CLARK, supra note 46, at 6.
50. The power marketing administrations include the Bonneville Power Administration and the Western Area Power Administration (discussed infra at text accompanying notes 59-61), the Southwestern Power Administration, with authority to manage the Army Corps of Engineers' projects in Arkansas, Kansas, Louisiana, Missouri, Oklahoma and Texas (see 10 Fed. Reg. 14,527-28 (1945)), and the Southeastern Power Administration, with marketing authority in southeastern states (see Electricities of N. C. v. Southeastern Power Admin., 774 F.2d 1262, 1264 (4th Cir. 1985)). The United States is in the process of divesting itself of the Alaska Power Administration. See Energy and Water Development Appropriations for 1988: Hearings before the Subcomm. on Energy and Water Development of the House Comm. on Appropriations, 100th Cong., 1st Sess., pt. 6, at 1368 (1987). The Tennessee Valley Authority has broad development authorities that go beyond power development. See 16 U.S.C. §§ 831-831dd (1982).
eral Energy Regulatory Commission. Rates are designed to repay the costs of construction, operations, maintenance, repair and other costs associated with hydroelectric generation and marketing. Generally, federal power must be offered first to public utilities and electric cooperatives; only after these "preference customers" have been served may power be sold to private, investor-owned utilities.

Two power marketing administrations operate in the West: the Bonneville Power Administration ("Bonneville"), which covers the Columbia River basin, and the Western Area Power Administration ("WAPA"), which covers most of the rest of the West, including the Missouri and Colorado River basins and California. WAPA markets power from 51 generating plants with more than 9 million megawatts of installed capacity, owns 16,000 miles of transmission lines, and generates more than $630 million in annual revenues. Bonneville markets power from 30 generating facilities with more than 20 million megawatts of installed capacity, owns 14,000 miles of transmission lines, and anticipates generating more than $3.16 billion in revenues and reimbursements in fiscal year 1988.

B. State-based Planning for Federal Hydropower Systems

The power marketing agencies are federal, and historically have not shared power with the states in which they operate. In 1980 this pattern of federal control shifted with respect to Bonneville, the larger of the western power marketing administrations. Bonneville's Pacific Northwest service territory provides the most fully-developed example of regional control of a federal hydropower system.

I. Bonneville and the Columbia River Hydropower System

Reclamation is important in many parts of the Pacific Northwest, but the Columbia River's development has been dominated by the hy-

56. Id., pt. 6, at 1412.
dropower capabilities of the federal dams. Because it was plentiful for so long, and remains relatively cheap, federal hydropower marketed by the Bonneville Power Administration has had pervasive influence in the region's power system.58

Bonneville is unique among the federal power marketing administrations not only for its size and influence, but for its autonomy.59 In 1974, Congress freed Bonneville from the vagaries of the congressional appropriations process, which were seen as inhibiting the efficient construction of the region's power transmission grid.60 In the Columbia River Transmission System Act, Congress established the Bonneville Power Administration Fund as a revolving fund to receive revenues from the sale of federal power from the Columbia River dams.61 Bonneville may spend from the fund for many purposes without a congressional appropriation.62 Under the Transmission System Act, Bonneville is virtually self-financing.

Bonneville's influence over the operation of the Columbia River dams is dominant, but not exclusive. The U.S. Army Corps of Engineers operates 20 multipurpose dams in the Columbia River Basin.63 The Bureau of Reclamation operates the largest storage dam on the Columbia, Grand Coulee, a number of multipurpose dams on the Snake River, and reclamation projects in the arid parts of the region.64 Nonfederal utilities, public and private, and major industrial customers also play a significant role in the region's power system.65 The Federal Energy Regulatory Commission regulates a number of nonfederal hydropower projects.66


59. "It's the only federal agency with a field office in Washington, in the words of one congressional aide." K. Lee & D. Klemka, Electric Power and the Future of the Pacific Northwest 189 (with M. Marts 1980). See also C. McKinley, Uncle Sam in the Pacific Northwest 160-61 (1952).

60. See S. REP. No. 93-1030, 93d Cong., 2d Sess. 7 (1974).


64. Id.


2. The Origins of Regional Control

In the 1970's, Bonneville and the Northwest utility community saw a crisis looming. The region's major hydropower sites were already developed, and expensive thermal generating plants (primarily nuclear and fossil-fueled) were thought to be the primary source of power for the future. The bleak prospect of financing these expensive facilities prompted some of the region's utilities to seek to expand their access to the federal system's inexpensive hydropower. With this, the region was faced with not only a power shortage, but also the threat of "a region-wide civil war over federal hydropower entitlements." To avoid this conflict, legislative authority was sought to allow Bonneville to acquire power, easing supply problems by expanding the pool of federal power and defusing tensions over its allocation. However, there was strong concern that with additional authority, Bonneville would become a regional "energy Czar." The region has a history of hostility to comprehensive federal development authority proposals, primarily due to concerns over federal interference with state water authorities. The question was how to expand Bonneville's power narrowly, and at the same time improve the region's ability to develop new energy resources wisely.

The solution initially proposed was to expand Bonneville's authority, but to create a regional entity as a check. A regional council would be created as a forum for resolving regional disputes in energy matters. The legislation would pull the states into a comprehensive energy planning process, overcoming some of the region's geographical and political balkanization and constraining Bonneville's authority.

It soon became clear, however, that congressional approval would come at a price. For many years, the Columbia River dams had produced low-cost power at the expense of the river's fish and wildlife,
particularly its renowned salmon and steelhead runs. Throughout the 1970's, Indian and non-Indian fishermen had been at swords' points over the right to harvest fish under a series of 1855 treaties. As fish runs diminished in the face of hyrdopower and other development, the tribes brought suits that threatened to restrict development that degraded fish habitat. The Columbia River dams, which present lethal obstacles to migratory salmon and steelhead, were a logical target. If the region was to avoid the restrictive impact of these suits, and secure the energy legislation it needed, it had to address these problems.

**a. The Northwest Power Act**

In 1980, Congress passed the Pacific Northwest Electric Power Planning and Conservation Act ("the Northwest Power Act"). In the Act, Congress consented to an interstate compact among the four Northwest states (Idaho, Montana, Oregon and Washington), to be administered by the Northwest Power Planning Council. The Act makes the Council accountable in distinct ways. Members of the Council are appointed by the governors of the states, and state authorities are expressly protected. The Council is subject to extensive public involvement requirements. Funding for the Council, derived from a portion of Bonneville's revenues, is subject to review by Bonneville when it exceeds a prescribed level.

The Council has three responsibilities. First, Congress reacted to the urgency of fish and wildlife problems by directing the Council to develop a program to help fish and wildlife, particularly salmon and steelhead runs affected by hydroelectric dams in the Columbia River Basin. In formulating this program, the Council must deal with the

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73. See Authority of Bonneville Power Administrator to Participate in Funding of Program to Help Restore the Columbia River Anadromous Fishery, 83 I.D. 589 (Nov. 22, 1976).
76. 16 U.S.C. § 839b(a)(2).
77. 16 U.S.C. §§ 839(5)(A), 839g(a). Particularly, they are protected in the area of water rights (16 U.S.C. § 839g(h)), energy regulation (16 U.S.C. § 839g(a)), and fish and wildlife (16 U.S.C. §§ 839b(h)(2), (6)(A), and (7)).
78. 16 U.S.C. § 839b(g).
79. 16 U.S.C. § 839b(c)(10).
80. "The conservation and enhancement of the great migratory fish and wildlife populations of the Pacific Northwest, something of great concern to the sportsmen and conservationists of this Nation are, for the first time, a matter of urgent priority under this legislation." 126 CONG. REC. H10680 (daily ed. Nov. 17, 1980) (statement of Congressman Dingell).
Columbia River and its tributaries as a system, must protect fish and wildlife and their spawning grounds and habitat, and must adopt measures (including improved river flows) to help the production, migration, and survival of salmon and steelhead. The program is to focus on biological objectives; cost becomes a factor in selecting fish and wildlife protection measures only if less costly measures can accomplish the "same sound biological objective," or if a measure is inconsistent with an "economical" power supply.

Second, Congress directed the Council to prepare a plan to meet energy demands that may be placed on Bonneville. The plan is to consist of a "general scheme" for acquiring energy, considering environmental quality, compatibility with the existing regional power system, and protection, mitigation and enhancement of fish and wildlife. The plan must include only "cost effective" resources, giving first priority to energy conservation, second priority to renewable resources, third priority to generating resources using waste heat or high efficiency resources, and fourth priority to all other resources. "Cost-effectiveness" requires a determination that a resource will be reliable and available within the time it will be needed, and have the lowest economic and environmental cost compared to other alternatives. For purposes of this cost-effectiveness determination, conservation measures are weighted more heavily because of their flexibility, reliability, and attractive environmental qualities. The Act's resource priorities are to be implemented through the use of a number of specific devices, including a 20-year demand forecast, the creation of a portfolio of resources available to meet that anticipated demand, model conservation standards, and other energy conservation and planning measures.

Finally, Congress directed the Council to encourage broad public involvement in developing the power plan and the fish and wildlife program. For many years the region's power system had operated largely out of the public eye, and decisions with enormous conse-
quences for ratepayers had been made with little public debate. In response, an entire section of the Northwest Power Act is devoted to public involvement requirements, which apply to both the Council and Bonneville.

The Council's power plan and fish and wildlife program guide and constrain Bonneville and other federal agencies. Bonneville must use its "fund and other authorities" to protect fish and wildlife in the Columbia River Basin consistently with the Council's fish and wildlife program and energy plan. Bonneville's share of the cost of the fish and wildlife program becomes a cost of producing power, which is included in its revenue requirement. The Federal Energy Regulatory Commission, the Army Corps of Engineers, the Bureau of Reclamation, and other federal agencies involved in the hydropower system must take the fish and wildlife program "into account at each relevant stage of decision-making processes to the fullest extent practicable." Under this provision, the FERC has authority to implement the Council's fish and wildlife program by imposing costs on non-federal project owners, or by determining that certain costs should be borne by Bonneville.

Bonneville is the primary implementor of the Council's power plan. Energy resources acquired by Bonneville must be consistent with the plan, and major resource acquisitions are subject to Council review. Bonneville must also award billing credits to its customers who develop resources consistent with the power plan, assist its

98. 16 U.S.C. § 839(b)(1)(A)(ii) (1982). The Council interprets this language to require these agencies either to provide the Council with plans indicating that the agency intends to implement the program, or provide explanations why "it will not be physically, legally, or otherwise practicable to implement the program measures, including a description of all possible allowances available to permit implementation." Northwest Power Planning Council, Columbia River Basin Fish and Wildlife Program, § 1203(a)(4) (1987). This interpretation is based in part on legislative history indicating that "[i]f [an agency] rejects the implementation of any measure contained in the program, they should indicate in writing the basis for that decision so that all parties will have a basis for understanding the decision." H. Rep. No. 96-976, pt. II, 96th Cong., 2d Sess. 46 (1980).
102. See 16 U.S.C. §§ 839d(c), 839d(h).
customers (financially and otherwise)\textsuperscript{103} to implement the model conservation standards,\textsuperscript{104} and develop conservation measures and renewable resources that Bonneville determines are consistent with the Council's plan.\textsuperscript{103} The Federal Energy Regulatory Commission also considers the power plan in its licensing processes.\textsuperscript{106}

Although federal agencies are cast in the role of implementors of regional policies, the Council also carries out federal policies. National policies and interests such as energy conservation,\textsuperscript{107} fish and wildlife conservation,\textsuperscript{108} the legal rights of Indian tribes,\textsuperscript{109} environmental quality,\textsuperscript{110} and public utility preference,\textsuperscript{111} have special emphasis under the Act and in the Council's planning. Rather than being a reaction against federal interests, then, the Act created a way for the region to weave federal interests into the region's plans.

\textit{b. The Constitutional Challenge to the Act}

When the idea of the Northwest Power Planning Council was first presented, the U.S. Department of Justice objected, contending that a state-based council could not constitutionally tell federal agencies what to do.\textsuperscript{112} The drafters of the Act sought to respond to these concerns, but Justice remained opposed, and its opposition formed the basis for a constitutional challenge shortly after the Council adopted its power plan in 1983. Justice was not the primary challenger in 1983.\textsuperscript{113} A group of homebuilders challenged the plan's model conservation standards,\textsuperscript{114} relying on arguments Justice had developed when the Act was being considered by Congress. In Seattle Master Build-
ers, the homebuilders argued that because of the Council’s authority with respect to federal agencies, Council members were federal officials whose appointments must be approved by the President of the United States. The challenge was based on a dictum in a 1976 Supreme Court case, *Buckley v. Valeo*, which suggested that the Appointments Clause of the Constitution requires “any appointee exercising significant authority pursuant to the laws of the United States” to be appointed by the president.

The drafters of the Northwest Power Act were aware of the *Buckley v. Valeo* dictum, but they were also aware of instances in which Congress had delegated to the states authority over federal activities. In one of the clearest cases, the Supreme Court held in *California v. United States*, that section 8 of the Reclamation Act required the Secretary of the Interior to follow state water law in developing a federal reclamation project (the New Melones Dam). Although the project was to be built by the Secretary of the Interior with federal funds on federal land, it was entirely permissible for Congress to require compliance with state law in appropriating and distributing project water.

The challengers in *Seattle Master Builders* addressed a somewhat different question, however. They argued that there is a distinction
between general state laws that Congress chooses to apply to federal agencies, and state regulation that Congress applies to federal agencies alone. They distinguished California v. United States:

California v. U.S. might be relevant if the Council had been empowered to require [the Bonneville Power Administration] and state, local, and private utilities to acquire resources through conservation as required by the Council's Plan. However, the Council is only empowered to tell [Bonneville] what to do.123

The Council, on the other hand, argued that the Constitution expresses recognition of interstate compacts,124 which by definition may "limit, or infringe upon a full and complete execution by the [federal] Government, of the powers intended to be delegated by the Federal Constitution."125

In 1986, the Ninth Circuit gave an unequivocal answer to the challenge. The Council is an interstate compact agency. It exercises its own authority, not federal authority; without state legislation approving the compact, no authority would exist.126 The court was not troubled by the fact that Congress consented to the compact in advance, or that the Council's activities "directly affect a federal agency."127

The legal merits of the opinion are analyzed elsewhere,128 and it is not our purpose to add to that commentary. It is important, however, to underscore the court's basic holding: The arrangement represented by the Northwest Power Planning Council is a flexible, constitutional device. Whether different versions of this arrangement would be upheld in other circuits is to some extent speculative, but the Seattle Master Builders opinion offers clear support for state-based basin councils to guide federal activities and hydropower revenues.

III. BASIN COUNCILS FOR OTHER REGIONS

There are important differences between water problems in general and the problems the Northwest Council deals with, and impor-

123. Reply Brief for Petitioners at 72-73, Seattle Master Builders, 786 F.2d 1359 (9th Cir. 1986).
124. U.S. CONST. art. I, § 10, cl. 3 ("No State shall, without the consent of Congress, ... enter into any Agreement or Compact with another State ... "). See generally Frankfurter & Landis, The Compact Clause of the Constitution—A Study in Interstate Adjustments, 34 YALE L.J. 685 (1925).
126. Seattle Master Builders, 786 F.2d at 1363-66.
127. Id. at 1363-64.
tant differences from one region to another. Nevertheless, for purposes of discussion we describe what a "generic" basin council for water policy might look like, starting with the Northwest Council as a template:129

— A revolving fund resembling the Bonneville Power Administration fund would receive power revenues from the basin's federal dams.
— Congress would consent to the creation of a basin council by interstate compact. State participation in the compact would be authorized by state legislation, and the council's members would be appointed by the governors of the member states.
— The council would undertake strategic planning for the federal power and reclamation systems of the basin, which would include demand forecasting and the examination of supply options, and would identify suitable investments for hydropower revenues in the revolving fund.
— The basin council would be subject to strong public involvement obligations.
— The activities of federal agencies operating or regulating the basin's hydropower and reclamation facilities should be consistent with the plan adopted by the basin council.

At a general level this model offers three incentives. First, it would provide access to funds for strategic water initiatives. As the federal budget is cinched tighter, this avenue of funding could become increasingly significant. Second, it would offer the basin states a way to integrate federal, state, tribal, and other water interests. Particularly in an era when states may see initiative in water policy shifting to federal water programs,130 the ability to integrate policy in a state-appointed forum could be a significant incentive.131 Third, strong public involvement obligations could expand and stabilize the social foundation of water policy, building on a more inclusive range of political debate than has informed the federal system in the past. At a time when federal water policy is seeking new political and economic moorings, basin councils may offer a foundation for achieving a new con-

129. This discussion is drawn from a report co-authored by Dr. Lee and published by the Western Governors' Association. See Lee & Clark, supra note 46, at 26.


131. Basin councils, for example, might provide a process to address Commerce Clause questions raised by state regulation of water supplies. In Sporhase v. Nebraska ex rel. Douglas, 458 U.S. 941 (1982), the Supreme Court held that water is an article of commerce, and that a Nebraska ban on groundwater exportation violated the Commerce Clause. The majority opinion also recognized that arid western states have a valid interest in conserving water, however, and this interest may help justify state laws that burden commerce. See Tarlock, So It's Not Ours—Why Can't We Still Keep It? A First Look at Sporhase v. Nebraska, 18 LAND & WATER L. REV. 137 (1983). A plan emphasizing conservation on an interstate basin scale might supply a foundation for asserting legitimate state interests.
sensus. Taken together, these incentives would offer cooperating states an unprecedented opportunity for new initiatives in western water policy.

Coupled with these incentives are a number of uncertainties, however, which fall into two general categories. First, funding questions could influence the potential effectiveness of basin councils. Second are questions relating to the viability of basin councils in the supercharged political atmosphere of western water policy. These uncertainties do not undermine the idea of basin councils, but do help focus the debate.

A. Funding Questions

1. Defining the Uses of Basin Funds

The Northwest Power Act calls for electric power revenues to be invested with the interests and obligations of electric ratepayers foremost in mind. For example, investments in energy conservation are suitable if they are less costly than other alternatives, resulting in a savings for ratepayers. Investments in fish and wildlife are made in recognition of the power system's adverse effects on those resources. On the other hand, the Act provides no warrant for the use of power revenues unrelated to ratepayer interests or obligations. Funding a water project without any benefits to electric ratepayers or to fish and wildlife for which the power system is responsible would be inappropriate. The question is whether this distinction between permissible costs (reflecting the long-term interests and obligations of ratepayers) and impermissible costs should apply to basin councils.

There is an argument that the distinction should not apply, that it is appropriate to use power revenues for purposes unrelated to the direct interests and obligations of electric ratepayers. As has been seen, using hydropower revenues for purposes external to the power system is not a new idea. The reclamation program grew up on the promise that hydropower revenues would defer a significant part of water project costs. Congress has also authorized the use of hydropower revenues to correct salinity problems caused by repeated use of water for irrigation, for comprehensive river planning, energy conservation, municipal water supply, and fish and wildlife measures.

132. Less costly, that is, in the long term, in both economic and environmental terms. See supra discussion accompanying notes 89-90.


These expenditures can be justified under the view that federal dams are national assets whose revenues ought to be used for national purposes. If Congress' judgment is that non-power purposes merit funding through hydropower revenues, that may be perfectly appropriate.

On the other hand, there are both equitable and practical arguments for retaining the distinction in the context of water projects. Is it fair to ask electric ratepayers to pay for something that probably will not benefit them? The benefits of water projects are usually localized: water cannot be distributed as widely as electric power can be. The chances that an Arizona ratepayer would benefit from an investment of revenues in the Upper Colorado River Basin are slim. Moreover, hydropower revenues are limited (as discussed below), and could not conceivably finance all western water needs single-handedly. Accordingly, even if hydropower revenues were available for non-power purposes, sharply-defined limits would have to be placed on their use. Limiting the use of hydropower revenues to uses involving the interests and obligations of ratepayers is a reasonable rule of this kind.

The special characteristics of nonstructural water solutions may point to a middle ground. To the extent that nonstructural solutions leave more water in a river, they may have broader benefits than do traditional water storage projects. For example, water conservation may augment river flows, allowing more hydropower generation, helping fish and wildlife, providing more recreational benefits, and allowing additional downstream municipal and industrial water use. River basin ratepayers may be a logical group to finance this spectrum of benefits. The likelihood that these benefits will occur (i.e. the likelihood that water conservation will augment instream flows) should be tested, and this test may illuminate the difficulties of measuring, allocating and securing these instream benefits. But if these benefits can be obtained, gains to the basin's economy and quality of life could be substantial, and the use of power revenues to finance nonstructural measures might be justified. Drawing an analogy to electric conservation measures under the Northwest Power Act, nonstructural water measures might be accorded a quantitative priority in determining which measures are more cost-effective than others.138

2. Coordinating Basin Funds With Other Financing

Hydropower revenues might make only a dent in critical western water needs. The Western Area Power Administration's revenues are

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138. See supra text accompanying notes 86-91.
in the neighborhood of $630 million per year, just over one-fifth of Bonneville's revenues.\textsuperscript{139} WAPA's revenues are generated by projects in river basins throughout the West, including the Colorado, the Missouri, and the Sacramento-San Joaquin. WAPA's revenues would have to be shared among these areas. At the start, then, basin councils in the Missouri or Colorado basins would be dealing with substantially smaller basin funds than in the Northwest.

The size of these funds may change because there is elasticity in electric power rates, and there may be more elasticity in some areas than others. Financial pressures on WAPA are lighter than on Bonneville. Bonneville's rates increased by more than 600 percent in the 1979-84 period,\textsuperscript{140} and the agency has had to struggle to make payments on its debt to the U.S. Treasury. WAPA has not experienced rate increases of this scale, and is either on or ahead of schedule in repaying its Treasury debt.\textsuperscript{141} Its rates are low, just over half of Bonneville's.\textsuperscript{142} Much of WAPA's power is used by its customers for peaking purposes, which has a relatively high market value.\textsuperscript{143} WAPA's rates may be able to absorb additional obligations imposed by new investments.

Whatever the degree of rate flexibility, electric power revenues probably could not meet all western water funding needs, and a more diverse portfolio of financing alternatives would be needed.\textsuperscript{144} Federal appropriations must continue to play a role in funding. Navigation, flood control, and agricultural production are important to the nation's commerce and security, and funding for these purposes is legitimately a national function. User fees must account for a much higher part of project costs than they have in the past. State funding should reflect the states' vital interests in stable water supplies for existing uses and future growth. If benefits for downstream municipal and industrial water needs can be secured from investments in headwater areas, municipal and industrial users should pay accordingly. Hydro-power revenues and basin councils could play a strategic role, helping

\textsuperscript{140} See \textsc{Lee \& Clark}, supra note 46, at 8.
\textsuperscript{141} Id. at 9.
\textsuperscript{142} See Energy and Water Development Appropriations for 1988: Hearings before the Subcomm. on Energy and Water Development of the House Comm. on Appropriations, 100th Cong., 1st Sess., pt. 6, at 1474, 1620 (1987) (showing a composite rate for all western sales in fiscal year 1986 at 13.61 mills per kilowatt hour, compared to Bonneville's average rate of 20 mills).
\textsuperscript{143} See \textsc{Lee \& Clark}, supra note 46, at 27.
to integrate these federal, basin, state, and local interests, identifying solutions with the least economic and environmental cost, and contributing funding to promising solutions.

3. Constriction of Funds by the Federal Deficit

The federal budget deficit poses a three-fold challenge to the financial resources available to basin councils. First, federal funding for western water programs, which has been in a virtually unrelieved decline since the early 1970's, holds little prospect of improvement. Indeed, with rapidly growing operation and maintenance charges for existing federal facilities, congressional funding for operation and maintenance costs will also be at risk. Basin councils might be forced to devote hydropower revenues to investments that previously were financed with federal appropriations.

Second, there have been repeated proposals that the federal government sell the power marketing administrations. In 1983, the President's Private Sector Survey on Cost Control, the "Grace Commission," proposed that the Columbia River power dams be sold. The budget deficit would thereby be trimmed with a lump sum payment from purchasers, and the continuing annual subsidies implicit in low-interest loans with discretionary repayment schedules would be extinguished. These proposals have resulted in the pending divestiture of one power marketing administration, the Alaska Power Administration. Congress has placed a moratorium on divestiture studies for other power marketing administrations, but this may be temporary; further divestiture proposals may be waiting in the wings.

The third challenge comes from pressures to increase hydropower repayments to the federal treasury. Not long after the Grace Commission report, liberal Congresswoman Barbara Boxer of California proposed that power from Hoover Dam be auctioned at market rates, and the extra income used to reduce the federal deficit. Although the proposal failed to pass, the voting margin on the floor of the House was a

145. See Worster, supra note 6, at 306 (reporting remarks of Senator Moynihan: "Not a single major water-authorization bill . . . had been passed by Congress in the decade after 1972. The Corps of Engineers was without work, and the Bureau was merely finishing up old projects.").


147. The Commission also recommended that all future hydropower development should be financed from non-Federal sources. Id.

In 1985, the Office of Management and Budget (OMB) proposed that interest rates on the U.S. Treasury's investment in the federal power system in the Northwest be sharply increased. Decrying the "cushy deal" whereby the Northwest benefitted from low interest federal loans and long-term, flexible repayment terms, OMB proposed that Bonneville's repayment obligation be doubled and put on a fixed schedule. Estimated rate increases implicit in the proposal were as high as eighty percent. Under congressional pressure, the OMB plan was shelved.

The same threat emerged in 1987. After making substantial inroads on the Administration's proposals to accelerate repayment schedules, the Senate Budget Committee reached a compromise that made no specific mention of increased repayment by power marketing administrations. The committee did, however, call for more than $1.1 billion in budget cuts or increased revenues, giving instructions to the committee with jurisdiction over the power marketing administrations and other western revenue-producing programs to find the savings. The West had an opportunity to catch its breath when the administration's fiscal year 1989 budget did not propose further increases in repayments.

Three lessons can be drawn from these developments. The first is obvious: federal funds for water projects will continue to be scarce. Rather than counting on federal funds for new projects, the West will do well to secure federal funding for operation and maintenance costs for existing projects, and to find other sources of funding for new water initiatives. The second lesson is that the western basins may be forced either to purchase the power marketing administrations, or see the administrations sold to private bidders. If western basins make their own bids for the administrations, something like a basin council arrangement would be an appropriate way to govern the new western hydropower entities, and to direct the investment of hydropower revenues. The third lesson is that if the power marketing administrations are not sold, hydropower will be under increasing pressure to help reduce the federal deficit, probably through straight-line repayment,
possibly at higher interest rates. This would reduce the pool of revenues available for water investments.

These trends may not be irresistible, however, and they are shortsighted. Using hydropower revenues for strategic water improvements could produce significant benefits in the West, and at the same time reduce political and financial pressures on the federal government to address western water problems. After all, Western water problems are not merely local problems. The federal government has been a partner in western water development because there are important national interests and responsibilities involved. Basin councils might assume some of these responsibilities, weave national interests into basin plans, and relieve pressures on the federal treasury. In this way, basin councils may represent a much more productive investment of hydropower revenues than would federal deficit reduction.

B. The Political Viability of BasinCouncils

There is strong interest in the West in least-cost water solutions, and recognition that these solutions will require coordinated planning and investment. There is a question, however, whether this interest extends to planning and investment on a river basin scale. The question for other basins, as it was for the Northwest, is whether the benefits of coordinated action hold enough promise to overcome differences among basin states. The basin council we have outlined would not be autocratic, but contemplates a shared approach to natural resource problems. Federal agencies, state agencies, Indian tribes and others must be willing to seek low-cost, environmentally-sound water and power solutions, and must see a coordinated, basinwide program as being the best way to do so.

It is by no means apparent that a cooperative interstate approach is politically possible; water in the West may be too precious, and conflicts too bitter. There are wide disparities among states in geography, economics, population, and climate. These differences spell fundamentally divergent interests in water. Discrepancies in water project benefits received by upper Missouri basin states and lower basin states

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155. Hemmingway, supra note 58, at 695.
are perceived as significant, for example, and there may be deep disagreement over future water initiatives. These differences would complicate the fashioning of a cooperative interstate body.

Because of these political complications, it may be worthwhile to consider the idea of basin councils on a smaller scale. Congress might authorize a single state to prepare a strategic plan for in-state federal project operations and hydropower revenues. Such an arrangement could address the energy, water, and environmental conditions unique to the state or project, without facing the political complications of an interstate council. The potential opportunities and efficiencies of interstate coordination would be foregone, and the insulation against constitutional attack provided by an interstate compact would be missing, but the potential benefits of such an arrangement could still be significant.

Whatever the scale, it is essential that the basin council’s task, and the constraints within which it must operate, be clearly defined, particularly in relation to the existing rights and responsibilities of others. The political balance that undergirds the Northwest Power Act includes a framework of Indian and international treaties, power system operating agreements, and case law that established a reasonably settled body of rules. The Act reaffirmed this framework, making it clear that fundamental rights could not be upset by the Council and that the Council would not be faced with the task of making fundamental changes or reallocating existing rights. In water policy, similar care should be taken not to disturb existing rights. The Colorado River Basin has a complex “Law of the River” under which a basin council would have to operate. Water rights and the authority of existing state water agencies should be preserved, as should federally-based rights such as Indian water or hunting and fishing rights, Endangered Species Act protections, and the like.

If Indian water rights were appropriately protected in basin council legislation, basin councils might be especially appealing to states and Indian tribes concerned with Indian water rights and claims. One of the central questions in western water policy is how to satisfy reserved Indian water rights without disrupting existing water uses. The tribes want water, not just paper water rights. Many western states would rather find creative solutions for tribal claims than risk judicial decrees that could require more draconian measures to satisfy

156. See Lee & Clark, supra note 46, at 13.
158. For a discussion of how Indian water claims have evolved, see chapters 8 and 9 of McCool, Command of the Waters (1987).
senior Indian water rights. But the economic pressures that face western water projects can also block these creative solutions. Basin councils and hydropower revenues could play a role in finding these solutions and making them work. The Northwest Power Act again offers precedent, providing resources to rebuild the Columbia River's anadromous fish runs and making the Basin's Indian tribes natural allies of the Council.\textsuperscript{159} Basin councils could play a similar role in finding ways to replace the paper water rights of Indian tribes with real water.

Whether federal agencies are likely to offer a friendly reception to basin councils is also a key question. Inevitably, the Northwest council's relations with federal agencies have been characterized by some tension, particularly in the Council's early years.\textsuperscript{160} One can hope that federal water agencies would be more accommodating to basin councils. The U.S. Bureau of Reclamation recently declared that it will work with state and local agencies, Indian tribes, public interest groups, and others to improve "management, efficiency, and conservation of water resources" in federal reclamation projects, and to rely on dams only as a tool to achieve increased efficiencies.\textsuperscript{161} While the Bureau has not been put to the test on this commitment, this broad endorsement may bode well for the brand of cooperation implicit in basin councils.

Each of these issues has branches and complexities that would have to be worked out within the unique climate of each basin. The concept of basin councils, however, is flexible. The viability of the concept is much more likely to be shaped by political forces than by intrinsic limitations in the basin council structure.

\section*{IV. Conclusion}

Major federal water projects, part of the rush to settle the West, were built on a scale that would have astonished even the early proponents of the reclamation system. If John Wesley Powell were to see the reclamation program today,

\begin{itemize}
  \item \textsuperscript{159} See Volkman, The Columbia River Fisheries Thirteen Years After the Boldt Decision, Anadromous Fish Law Memo No. 42 (Aug. 1987).
  \item \textsuperscript{160} See Evans \& Hemmingway, Northwest Power Planning: Origins and Strategies, 1 NW. ENVTL. J. 1, 5 (1984).
\end{itemize}
[h]e might get the impression that resurrection morn had really dawned. All the great river systems—Missouri, Columbia, Colorado, Rio Grande, Sacramento-San Joaquin, and every tributary branch and twig—have been surveyed and mapped in even greater detail than he intended. Blue river lines are strung with the irregular blue beads of reservoirs or projected reservoirs, and the storage dams, as well as the map symbols that record them and the topographic base map on which they are superimposed, are part of the heritage that Powell left.162

If we adopted Powell’s engineering vision, however, we gave decidedly short shrift to his notions of river basin government. We do not suggest that the West can reclaim the ground that Powell stood on. The river basins, with few exceptions, are divided among the states, and that will not change. But we can think about how states can guide the conservation and development of shared river basins. Basin councils are descendants of Powell’s idea of river basin government, adapted to the realities of state boundaries, and to the possibilities inherent in the new era of water management. The success of the Northwest program so far suggests that federal, state, tribal and local interests can approach water-related problems on a river basin scale, using hydropower revenues for new initiatives.

162. Stegner, supra note 12, at 353.