

The Upper Basins' Political Conundrum

A Deal is Not a Deal

J. William McDonald
U. S. Department of the Interior

**Report to the Western Water
Policy Review Advisory Commission**

The Upper Basins' Political Conundrum:

A Deal is Not a Deal

J. William McDonald
U.S. Department of the Interior

Report to the Western Water
Policy Review Advisory Commission

July 1997

The Western Water Policy Review Advisory Commission

Under the Western Water Policy Review Act of 1992 (P.L. 102-575, Title XXX), Congress directed the President to undertake a comprehensive review of Federal activities in the 19 Western States that directly or indirectly affect the allocation and use of water resources, whether surface or subsurface, and to submit a report of findings to the congressional committees having jurisdiction over Federal Water Programs.

As directed by the statute, the President appointed the Western Water Policy Review Advisory Commission. The Commission was composed of 22 members, 10 appointed by the President, including the Secretary of the Interior and the Secretary of the Army, and 12 members of Congress serving *ex-officio* by virtue of being the chair or ranking minority member of the 6 congressional committees and subcommittees with jurisdiction over the appropriations and programs of water resources agencies. A complete roster is provided below.

Commission Membership

Denise Fort, Chair
Albuquerque, New Mexico

Appointed Members:

Huali Chai San Jose, California	Patrick O'Toole Savery, Wyoming	Secretary of the Interior Washington, D.C. Represented by: Joe Sax, September 1995 - December 1996 Patricia J. Beneke, December 1996 -
John H. Davidson Vermillion, South Dakota	Jack Robertson Portland, Oregon	Secretary of the Army Washington, DC Represented by: Dr. John H. Zirschky
John Echohawk Boulder, Colorado	Kenneth L. Salazar Denver, Colorado	
Janet Neuman Portland, Oregon		

Members of Congress (Ex-officio Members):

U.S. Senate: Committee on Energy and Natural Resources

Hon. Frank Murkowski, Chairman

Hon. Dale Bumpers, Ranking Minority Member

Hon. J. Bennett Johnston (September 1995 to January 1997)

U.S. Senate: Subcommittee on Water and Power, Committee on Energy and Natural Resources

Hon. Jon Kyl, Chairman

Hon. Daniel K. Akaka, Ranking Minority Member

Hon. Larry E. Craig (September 1995 to January 1997)

Hon. Bill Bradley (September 1995 to January 1997)

U.S. Senate: Committee on Appropriations

Hon. Ted Stevens, Chairman

Hon. Robert C. Byrd, Ranking Minority Member

Hon. Mark O. Hatfield (September 1995 to January 1997)

U.S. House of Representatives: Committee on Resources

Hon. Don Young, Chairman

Hon. George Miller, Ranking Minority Member

U.S. House of Representatives: Committee on Transportation and Infrastructure

Hon. Bud Shuster, Chairman

Hon. James L. Oberstar, Ranking Minority Member

U.S. House of Representatives: Committee on Appropriations

Hon. Bob Livingston, Chairman

Hon. David R. Obey, Ranking Minority Member

This is an Independent Report to the Commission

The report published herein was prepared for the Commission as part of its information gathering activity. The views, conclusions, and recommendations are those of the author(s) and are not intended to represent the views of the Commission, the Administration, or Members of Congress serving on the Commission. Publication by the Commission does not imply endorsement of the author's findings or recommendations.

This report is published to share with the public the information and ideas gathered and considered by the Commission in its deliberations. The Commission's views, conclusions, and recommendations will be set forth in the Commission's own report.

Additional copies of this publication may be obtained from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia, 22161; phone 703-487-4650.

Preface

This paper has been prepared at the request of the Western Water Policy Review Advisory Commission. Formation of the Commission was authorized and directed by the Western Water Policy Review Act of 1992 (Pub. L. No. 102-575, Title XXX, 106 Stat. 4693).

Pursuant to section 3003(a) of the Act, the President is directed:

...to undertake a comprehensive review of Federal activities in the nineteen Western States which directly or indirectly affect the allocation and use of water resources, and to submit a report on ... [his] findings, together with recommendations, if any, to ... [certain committees of Congress].

In turn, section 3004(a) of the Act provides that the Commission is "to assist in the preparation and review" of this report. Section 3005 tasks the Commission with reviewing and examining, among other things:

- present and anticipated water resources problems in the West,
- current and proposed Federal water resources programs,
- the history, use, and effectiveness of various institutional arrangements to address problems of water use and development, and
- the legal regime governing the development and use of water and the respective roles of state and Federal governments over the allocation and use of water.

The conclusions and recommendations presented in this paper are those of the author alone, not of the Commission. This paper is but one of many studies, reports, and other sources of information and analysis to which the Commission will look as it assists in the preparation of the report which the President is required to submit.

The first edition of this paper was dated May, 1997. This second edition differs from the first only in that footnotes 55-58 have been inserted (they misprinted in the first edition) and the format of a few statutory citations in other footnotes has been corrected. The text of the paper is unchanged.

Acknowledgments

First and foremost, I would like to acknowledge the able assistance provided by Spencer J. Shepherd, on the staff of the Western Water Policy Review Advisory Commission, in locating and gathering together numerous references for my use. His timely research and prompt responses to my many requests were of great benefit. In addition, he proofed all statutory and case law citations for the final paper. In this regard, thanks are also due to Jennifer Holman, a law student intern from the University of California at Davis in the Pacific-Southwest Region, Office of the Solicitor, U.S. Department of the Interior, who originally researched many of the citations to the statutes and cases referenced in this paper.

I would also like to recognize the extensive help provided by Wayne Cook, Executive Director, and Jane Bird, General Counsel, Upper Colorado River Commission, in identifying resources in the Commission's library and responding to numerous inquiries for data. I also want to acknowledge the assistance of numerous personnel in the Mid-Pacific, Lower Colorado, Upper Colorado, and Great Plains Regions of the U.S. Bureau of Reclamation who provided a wide variety of data to me, always on short notice. Finally, my thanks to folks in several other federal agencies, and state agencies, who provided background materials to refresh my fading memory.

To my colleagues Marlene Mills and Steve Jones, Pacific-Southwest Region, Office of the Solicitor, U.S. Department of the Interior, I would like to express my thanks for their tireless help in typing the final manuscript. The care with which they attended to the necessary details is greatly appreciated.

A draft of this paper was provided to a number of people for review. To each of them, I would like to extend my thanks for the thought provoking comments which were received. The final paper reflects changes made in response to most, but not all, of these comments and it is undoubtedly a better product for it. To the extent that some reviewers' comments have not been accommodated, this shortsightedness is mine and mine alone.

Finally, my thanks to Don Glaser, the Commission's Executive Director, for having invited me to prepare this research paper. I trust that the Commission finds this paper useful in informing its deliberations.

As always, the analyses, conclusions, and recommendations presented in a paper such as this are mine alone, not those of my past or present employers, the interstate compact administrations and water organizations of which I have been a member in the past, nor of those who assisted me with the research for this paper.

J. William McDonald, B.S., The Colorado College (1968); J.D., Univ. of Chicago (1971); M.S., University of Michigan (1976). Admitted to the Colorado Bar in 1971. Former Director, Colorado Water Conservation Board, State of Colorado (1979-1990), and former Assistant Commissioner for Resources Management, Bureau of Reclamation, U.S. Department of the Interior (1990-1994). Presently an attorney in the Pacific-Southwest Region, Office of the Solicitor, U.S. Department of the Interior.

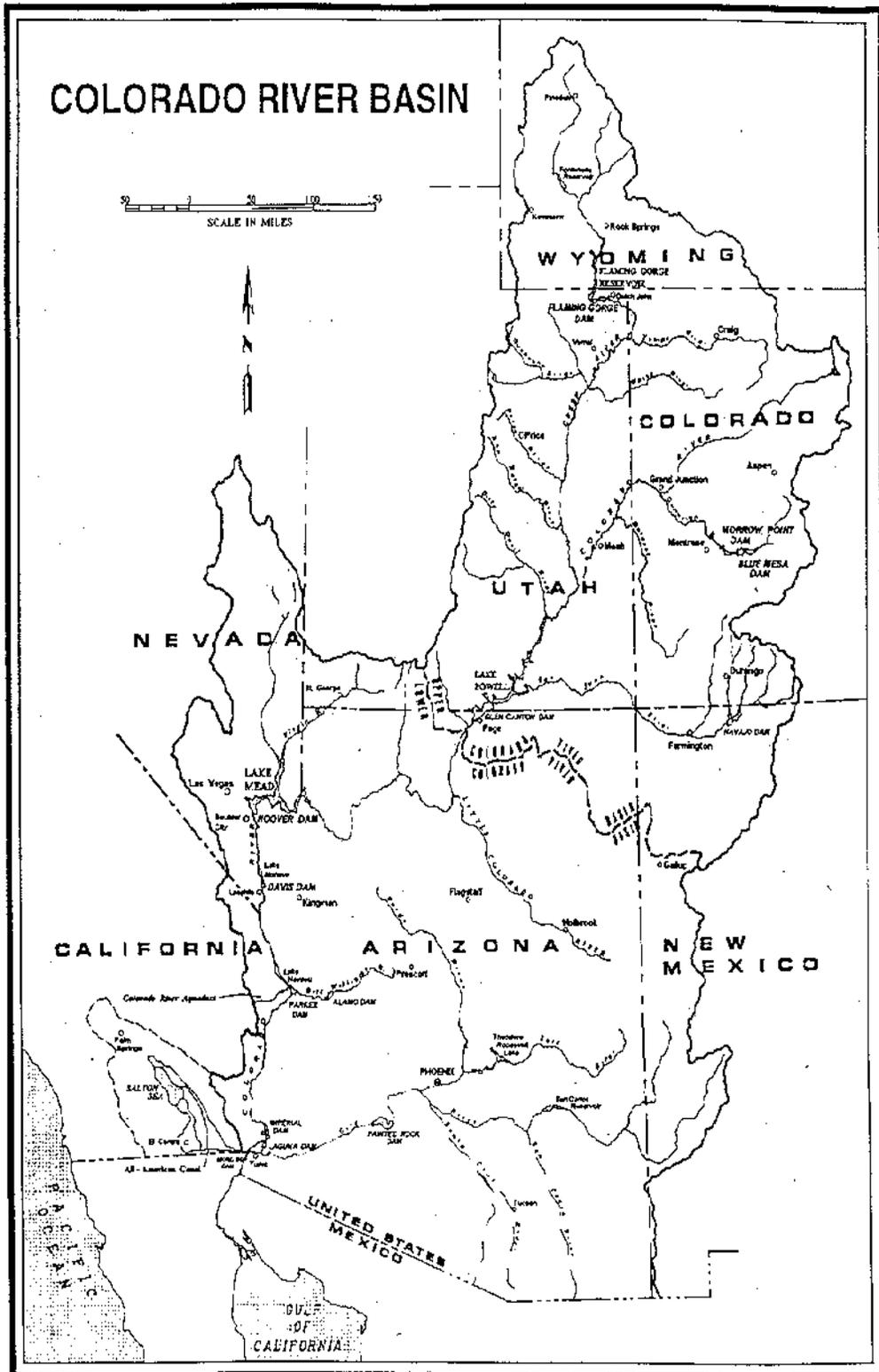


Figure 1. Colorado River Basin

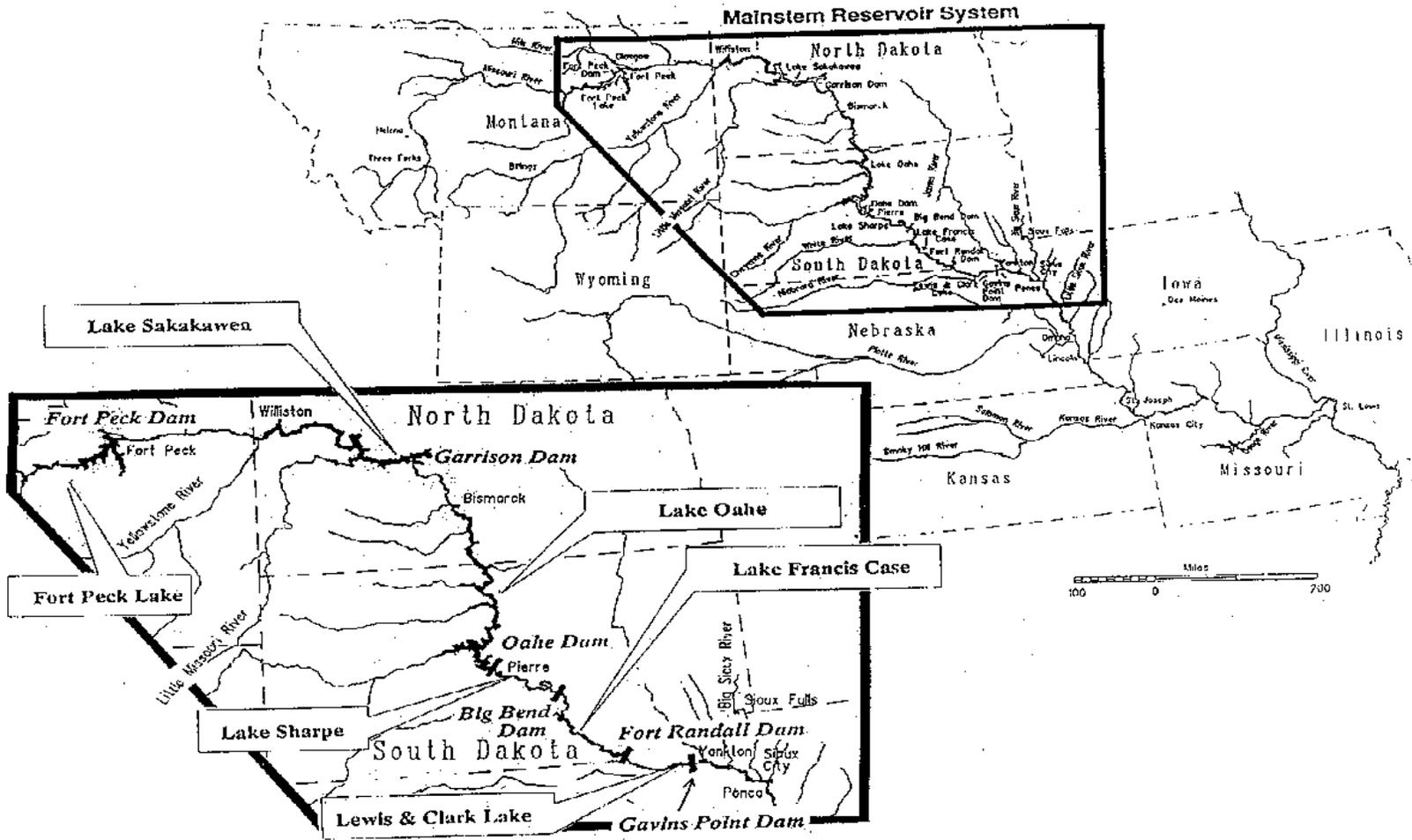


Figure 2. Missouri River Basin

Contents

	<i>Page</i>
Introduction	1
An Overview of the Institutional Setting	3
Introduction	3
Western Water Law	4
Apportionment of Interstate Rivers	5
1. Litigation	6
2. Interstate Compacts	8
3. Acts of Congress	9
Federal Irrigation Projects	10
Federal Flood Control and Navigation Projects	13
The Colorado River Basin: The Agreements and the Results	14
Introduction	14
The Historical Agreements	15
The Actual Results	28
The Missouri River Basin: The Agreements and the Results	33
Introduction	33
The Historical Agreements	35
The Actual Results	46
A Deal is Not a Deal	51
Introduction	51
What Went "Wrong?"	51
1. More Projects Were Authorized Than Could be Funded	53
2. Sustained Support for Appropriations	55
3. Federal Budget Constraints	56
4. Non-Federal, Up-Front Cost Sharing	59
5. Project Economics	60
6. Incomplete Project Planning	62
7. Environmental Concerns	64
The Realities of Political Agreements	65
Conclusions and Recommendations to the Commission	67
Introduction	67
A Clash of Perspectives	67
What Should the Commission Do?	71
A Postscript	75

Tables

	<i>Page</i>
1 Irrigation development (full service acres)	47
2 Rural water development projects	49

Introduction

In the 17 western states¹, division of the major interstate river basins into upper and lower basins has arisen naturally as a matter of topography, climate, hydrology, and economics -- and has been confirmed institutionally as a matter of law and politics. In turn, one of the salient attributes of the history of the development of the West's water resources has been nearly unabated political and legal conflict between the upper and lower basins within most, if not all, interstate river systems.

Over the past 100 years, these conflicts have often been played out in the context of Congressional consideration of legislation which either ratified interstate compacts or authorized federal water resources development projects (*i.e.*, authorized federal financing for the construction of storage reservoirs and water delivery systems, hydropower facilities, flood control features, and navigation improvements). The legislation which emerged from the Congressional arena was frequently proffered as the vehicle by which the "comprehensive" development of a basin's water and hydropower resources would be achieved to the mutual benefit of both the upper and lower portions of that basin.

The legislative process being what it is, some degree of compromise and accommodation was usually in order -- the political and geographical fulcrum of which was the point of demarcation between the upper and lower basins in any given river drainage. Thus, federal water project authorizing legislation usually contained specific projects for both the upper and lower basins. Furthermore, such legislation was often premised, implicitly if not explicitly, on the expectation (at least in the eyes of upper basin interests) that construction of authorized projects would proceed more or less simultaneously in both basins so that the agreed upon development of each basin's water resources, and the attendant regional economic benefits, would be realized concurrently.

Whatever the upper basins' expectations, the reality has been significantly different. In several instances, federal development of the water resources allocated, apportioned, or otherwise available to a lower basin state or states has proceeded largely as contemplated in the authorizing legislation. But the counterpart upper basin state or states have found the construction of a significant number of the federal projects which were authorized for them to

¹ Section 3002 of the Western Water Policy Review Act of 1992 (Pub. L. No. 102-575, Title XXX, 106 Stat. 4693), refers to the 19 western states, consisting of the 17 western continental states, Hawaii, and Alaska. This paper deals only with circumstances in the 17 western continental states, which are commonly referred to as the "reclamation states" because they are the beneficiaries of the original federal reclamation program. See the Act of June 17, 1902, ch. 1093, § 1, 32 Stat. 388, which applied to the western states other than Texas, with that original act being extended to Texas by the Acts of February 25, 1905, ch. 798, 33 Stat. 814 and June 12, 1906, ch. 3288, 34 Stat. 259 (codified as amended at 43 U.S.C.A. § 391 (1986 & Supp. 1997)).

have been stymied by a variety of factors, the primary ones being federal budgetary constraints, faltering project economics, new environmental requirements, and shifting political sands. Even when some portion of the contemplated development has occurred, upper basin water interests may find themselves unable to reap what they believe to be a "fair share" of the benefits which are now, or could now be, generated by those projects.

In the view of upper basin water resources development interests, the result has been that they have not "gotten their due." They argue that "deals" memorialized in the form of authorizing legislation should be honored by the federal executive and legislative branches of government, or suitable contemporary substitutes provided, because it is "unfair" and "inequitable" for the lower basins to have had the federal government's "promises" to them fulfilled (*i.e.*, federal resources expended to their benefit), while the upper basins have gone wanting or, worse yet, both have gone wanting and have had their states' riverine resources dammed and inundated mostly to the benefit of downstream states.

The purpose of this paper is to examine whether the Commission should endeavor to address itself to the issue of federal water project development having not proceeded in accordance with past political agreements. The history of Congressional legislation which ratified interstate compacts and/or authorized federal water resources developments in the Colorado River and Missouri River Basins, and the actual results of federal development in those basins, will be drawn upon for illustrative purposes.² While other basins could also have been examined, the history of the political agreements reached in these two basins are the primary examples of upper basin/lower basin "deals" and serve to fully frame, in the author's opinion, the question to be addressed.

² The political, legislative, legal, and institutional history of water resources development in these basins has been, for the most part, well documented and summarized in numerous publications. Thus, no effort has been made in the course of preparing this paper to search for and review original source materials. Rather, the author has relied upon the many thorough and competent works which have already been written. Perusal by the interested reader of the secondary sources referenced in the footnotes in this paper will yield a wealth of citations to original materials, such as government reports and statistics, Congressional committee hearings and reports, histories of Congressional floor debates, minutes of compact negotiations, official agency correspondence, personal papers, and brochures, newsletters, newspaper articles, and other materials written contemporaneously with the events at hand.

Two disclaimers are in order at the outset. First, the phrases "upper basin water development interests," "upper basin interests," and "upper basin states" will be used interchangeably in this paper to mean those interests, private and governmental, in the upper basins of an interstate river system who support the construction of water development projects. In the past, that would have almost invariably included -- in addition to private water users; local irrigation, conservation, and conservancy districts; and municipalities -- state governments acting through their governors and state water agency officials. However, in using those phrases in this paper when applied to the present time, the author does not presume, one way or another, what an upper basin state government's current policies and positions are with respect to water development in general (federally financed or otherwise) or specific potential federal projects. This is because one can no longer make across the board statements about unequivocal state government support for water project development in the West, a telling observation in and of itself about the question to which this paper is addressed.

Second, it is to be acknowledged that there are other aspects to the question of "equities" in the federal development of the West's water resources besides the upper/lower basin issue, most notably with respect to the fulfillment of the United States' trust obligations to Native Americans.³ This paper does not treat these matters, but certainly not because they are unimportant. They are not covered only because the author was not asked to address himself to them, as others are doing so for the Commission's benefit.

An Overview of the Institutional Setting

Introduction

Aridity and high variability in stream flows from year to year characterize the climate and hydrology of the West. Furthermore, most river systems in the 17 western states receive a very high percentage of their annual flow

³ For a thought provoking treatment of the question of who were "the winners and the losers" in the development of the Colorado River Basin, see H. INGRAM, *WATER POLITICS: CONTINUITY AND CHANGE* 9-23 (1990).

from snowmelt, not rainfall, and therefore receive most of their total annual runoff in only a three or four month period from April through July.⁴

As a consequence of these conditions, intensive agriculture usually cannot be sustained without the benefit of extensive irrigation. Also, in order to have reliable, year-round and year-to-year water supplies, reservoirs are needed to store peak flows for later distribution in the low runoff months and drier years.

These physical circumstances have led to the development of legal and institutional systems for defining rights in and to the use of water that are unique to the West. These are very briefly outlined below.

Western Water Law

In the East, South, and Midwest, where rainfall is generally sufficient for growing crops and where stream flows are sustained by rainfall on a relatively uniform basis, states adopted the English common law riparian doctrine. Under the riparian system, only those who own land bordering a river are entitled to make "reasonable use" of the water of that river on the same land, and only then if their use does not interfere with "reasonable uses" by others who also own land adjacent to the same river (be they upstream of or downstream from the specified riparian user). "Reasonable use" is typically not quantified.⁵

Given the relative scarcity of rainfall in the West, and the variability of runoff within a year and from year to year, the western states developed a different legal system for allocating water supplies. It is known as the doctrine of prior appropriation. The doctrine initially developed as the

⁴ The major exceptions are the coastal rivers in California, Oregon, and Washington and the Sacramento and San Joaquin Rivers in the Central Valley of California, where winter rainfall accounts for a large percentage of annual stream flows, with peak flows occurring in December, January, and February. The Sacramento and San Joaquin Rivers are also fed by snowmelt runoff from the Sierra Nevada and thus typically experience a second peak of runoff in the April through June timeframe.

⁵ For a general description of the riparian doctrine, see D. GETCHES, *WATER LAW IN A NUTSHELL* 15-73 (3d ed. 1997).

custom of the California gold mining camps in the mid-1800s⁶ and eventually spread in statutory form to all 17 western states. However, several western states have developed hybrid systems that employ elements of both the riparian and prior appropriation doctrines.⁷

In essence, the doctrine of prior appropriation provides that the one who first put a water supply to a beneficial use has the superior right to it in times of shortage as against those who came later in time. Succinctly put, "first in time is first in right." Under this system, holders of junior rights (*i.e.*, those who came later in time) must forego the use of water so that holders of senior rights (*i.e.*, those who came first) can receive a full supply of water if stream flows are not sufficient for all users. Furthermore, the amount of water to which one is entitled is quantitatively defined (usually in cubic feet per second or acre-feet) and water can be put to use on lands not adjacent to the stream from which they are diverted.

In whatever form adopted by each western state, the doctrine of prior appropriation came to govern the relative rights of claimants to the flows of a given stream within the boundaries of a given state. But the rivers of the West, as elsewhere, have a proclivity for crossing state lines, thus giving rise to the need to define the relative rights of water users in one state *vis-a-vis* those in another to the waters of such interstate streams.

Apportionment of Interstate Rivers⁸

Allocation of the waters of interstate streams has been accomplished in three ways: by litigation, by negotiation of compacts between states, and by an act of Congress. While the former can and has involved litigation between private claimants,⁹ this paper will address only litigation between states. All

⁶ Overviews of the historical roots and evolution of the prior appropriation system may be found in 1 W. HUTCHINS, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES 157-80 (Natural Resources Economics Division, Economic Research Service, U. S. Department of Agriculture, Misc. Publication No. 1206, 1971); D. GETCHES, *supra* note 5, at 77-82; Johnson and DuMars, *A Survey of the Evolution of Western Water Law in Response to Changing Economic and Public Interest Demands*, 29 Nat. Resources J. 347-52 (1989); and Wilkinson, *Western Water Law in Transition*, 56 U. Colo. L. Rev. 317-20 (1985).

⁷ See D. GETCHES, *supra* note 5, at 190-206, 214-16.

⁸ Unless noted to the contrary, this discussion is drawn from D. GETCHES, *supra* note 5, at 402-415.

⁹ *Id.* at 397-402.

three methods have been employed in the basins being examined in this paper, as discussed below and in the next section of this paper.

1. Litigation

Interstate litigation is brought in the U.S. Supreme Court pursuant to its original jurisdiction.¹⁰ In such cases, the Supreme Court's jurisdiction is exclusive¹¹ and it acts as a trial court (*i.e.*, as the trier of the facts). In interstate litigation involving competing claims to the waters of interstate streams, the court applies the doctrine of equitable apportionment. This doctrine was first announced in 1907 in *Kansas v. Colorado*,¹² which involved the Arkansas River:

A basic tenet of the doctrine is that "equality of right," not equality of amounts apportioned, should govern. "Equality of right" simply means that the states stand "on the same level," or "on an equal plane, ... in point of power and right, under our constitutional system."¹³

In *Kansas v. Colorado*, Kansas generally applied the riparian doctrine, while Colorado had unequivocally embraced the doctrine of prior appropriation. Thus, this case left unresolved whether and how the doctrine of prior appropriation would be applied by the Supreme Court in apportioning the waters of an interstate stream between two states which both employed that doctrine.

¹⁰ U.S. CONST. art. III, §2.

¹¹ 28 U.S.C.A. § 1251(a) (1993).

¹² *Kansas v. Colorado*, 206 U.S. 46 (1907) (White, J., and McKenna, J., concurring in result).

¹³ D. GETCHES, *supra* note 5, at 405, quoting from language in the Court's decision.

The Supreme Court addressed this question in 1922 in *Wyoming v. Colorado*,¹⁴ which involved the Laramie River, a tributary of the North Platte River:

*We conclude that Colorado's objections to the doctrine of appropriation as a basis of decision are not well taken, and that it furnishes the only basis which is consonant with the principles of right and equity applicable to such a controversy as this is. ... The principle on which it proceeds is not [sic] less applicable to interstate streams and controversies than to others. Both States pronounce the rule just and reasonable.... ...[I]ts application to such a controversy as is here presented cannot be other than eminently just and equitable to all concerned.*¹⁵

Although strictly applied in *Wyoming v. Colorado*, the Supreme Court has sometimes deviated from the prior appropriation doctrine in subsequent cases:

Application of the appropriation doctrine is ... qualified in that protection of established uses may be more equitable than strict priority. Factors that inform equitable apportionment (and that might justify deviation from strict priority) include:

- (1) Physical and climatic conditions;*
- (2) Consumptive use of water in the several sections of the river;*
- (3) Character and rate of return flows;*

¹⁴ *Wyoming v. Colorado*, 259 U.S. 419 (1922). The Court's original 1922 decree was amended the very next year in *Wyoming v. Colorado*, 260 U.S. 1 (1923) (decree amended). Enforcement actions then ensued in the 1930s. See *Wyoming v. Colorado*, 286 U.S. 494 (1932) (motion to dismiss overruled), *Wyoming v. Colorado*, 298 U.S. 573 (1936) (injunction granted), and *Wyoming v. Colorado*, 309 U.S. 572 (1940) (reh'g denied). Upon joint motion of the parties, the original 1922 decree, as amended in 1923, was vacated and a new decree entered in *Wyoming v. Colorado*, 353 U.S. 953 (1957) (jt. mt. granted, decree vacated, decree entered).

¹⁵ *Wyoming v. Colorado*, 259 U.S. 470 (1922). In arriving at the decision that the doctrine of prior appropriation should apply to the Laramie River litigation, notwithstanding the general principles of equitable apportionment which it had articulated in the 1907 case of *Kansas v. Colorado*, *supra* note 12, the Court took great pains to distinguish the facts of the earlier case from the case at bar, particularly on the grounds that Kansas and Colorado were not both prior appropriation states, whereas both Wyoming and Colorado had adopted the doctrine of prior appropriation. 259 U.S. at 464-65.

- (4) *Extent of established uses and economics built on them;*
- (5) *Availability of storage water;*
- (6) *Practical effect of wasteful uses on downstream areas; and*
- (7) *Damage to upstream areas compared to the benefits to downstream areas if upstream uses are curtailed.*¹⁶

2. Interstate Compacts

The Compact Clause of the U.S. Constitution recognizes, by negative implication, the power of the states to negotiate interstate agreements, subject to the consent of Congress:

*No state shall, without the consent of Congress ... enter into any agreement or compact with another state, or with a foreign power*¹⁷

Such compacts are binding on the signatory states and on the individual citizens of the compacting states.

One of the virtues of an interstate compact is that it allows the signatory parties:

*... to allocate unappropriated water, thus making a "present appropriation for future use." Ability to make these determinations in advance is crucial to long range water project planning.*¹⁸

In the context of this paper, this observation is particularly relevant to the Colorado River Basin. It was concern on the part of upper basin states about the rapid pace of development in California versus the slow pace of development in the upper basin, coupled with the U.S. Supreme Court's decision to apply the doctrine of prior appropriation in the 1922 decision in

¹⁶ D. GETCHES, *supra* note 5, at 405-06. See, e.g., *Nebraska v. Wyoming*, 325 U.S. 589 (1945) (Frankfurter, J., and Rutledge, J., dissent), 345 U.S. 981 (1953); *Colorado v. New Mexico*, 459 U.S. 176 (1982) (remanded); *Colorado v. New Mexico*, 467 U.S. 310 (1984) (Stevens, J., dissent).

¹⁷ U.S. CONST. art. I, § 10, cl. 3.

¹⁸ D. GETCHES, *supra* note 5, at 407.

Wyoming v. Colorado, that prompted the upper basin states to consummate the negotiation of the Colorado River Compact later that year, the history of which negotiations will be chronicled in the next section of this paper. From the perspective of upper basin water development interests, an interstate compact was desirable because it would allocate to them "in perpetuity" for future use then unappropriated and unused waters of the upper basin,¹⁹ thus avoiding the outcome which the Supreme Court had reached on the Laramie River in *Wyoming v. Colorado*.

3. Acts of Congress

There has been but one instance in which the allocation of the waters of an interstate river was effected by Congressional action. This occurred when Congress passed the Boulder Canyon Project Act in 1928.²⁰ Since the enactment of this legislation is germane to the history of the political deals made in the Colorado River Basin, details concerning the events that led to the passage of this legislation, and what the act called for, will be addressed in the next section of this paper. Suffice it to say for now that the U.S. Supreme Court, in interpreting the Boulder Canyon Project Act in litigation brought against California by Arizona, found that Congress has, under the navigation and general welfare clauses of the U.S. Constitution, the authority to divide the waters of an interstate stream by legislative enactment.

Federal Irrigation Projects

¹⁹ Whether western states can indeed rely on interstate compacts to achieve protection "in perpetuity" as against the future actions of Congress is a legal and policy issue which is far beyond the scope of this paper. Insofar as the power of Congress under the Commerce Clause of the U.S. Constitution may be concerned, see, e.g., Carlson and Boles, *Contrary View of the Law of the Colorado River: An Examination of Rivalries Between the Upper and Lower Basins*, in PROCEEDINGS OF THE THIRTY-SECOND ANNUAL ROCKY MOUNTAIN MINERAL LAW INSTITUTE 21-28 - 21-29 (1986) ("Congress probably possesses the power under the commerce clause ... to modify an interstate compact by statute."). However, with respect to the issue of whether it is permissible for federal environmental regulatory laws to adversely impact a state's ability to develop and consume waters allocated to it by an interstate compact, the analysis turns on considerably more than just the Commerce Clause.

²⁰ Boulder Canyon Project Act, ch. 42, 45 Stat. 1057 (1928) (codified as amended at 43 U.S.C.A. §§ 617-617t (1986)).

While western water law and judicial, legislative, or negotiated allocations of interstate rivers provided the necessary legal framework for water resources development, paper rights and wet water are two different things.

... Almost everywhere in the West, water must be taken out of water courses and applied ... to the fields by irrigation. Appropriation law was well suited to meet the needs of farmers who depended on irrigation. The doctrine assured early appropriators of legal rights to a sure supply of water

But in many areas throughout the West small farmers required more than a legal doctrine to get water to their fields. Crops needed water in the late summer and early fall, long after snowmelt from the mountains had flowed past. ... Private enterprise in the form of farming and ranching cooperative associations was inadequate to raise the capital to build dams for storing the spring runoff for summer irrigation or to construct canals and laterals for transporting the water.²¹

To some extent, the private efforts to undertake irrigation in the 1860s and 1870s were successful. The first systems to be constructed irrigated lands immediately adjacent to local streams, were therefore the cheapest and easiest ones to build, and the water rights which they held were senior enough to permit reliance on natural streamflows. But as attempts were made to bring lands further from a river under irrigation, and as new appropriators found that a direct flow right²² would not get them through an irrigation season because more senior rights could claim the entire flow of a river as supplies dwindled in late summer, construction of storage reservoirs and ever longer delivery systems became necessary. However, this made new irrigation financially infeasible in many cases. As a consequence, the 1880s and 1890s saw numerous failed attempts by the states and private investors to reclaim the arid lands of the West.²³

²¹ Wilkinson, *supra* note 6, at 320. Footnote omitted.

²² A direct flow right is a right to divert water from a stream at any given moment and immediately put that water to a beneficial use. In contrast, a storage right is the right to store water in a reservoir for release and application to a beneficial use at a later time.

²³ Excellent summaries of private efforts to finance the development of irrigation systems may be found in P. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT 634-54 (1968) and M. ROBINSON, WATER FOR THE WEST: THE BUREAU OF RECLAMATION, 1902-1977 1-12 (1979). For a complete history, see D. PISANI, TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY, 1848-1902 (1992).

It was against this backdrop that the "irrigation movement" of the 1890s took hold.²⁴ The movement, which viewed reclamation of the arid lands of the West to be as much a matter of agrarian idealism as practical economics, sought support for federal legislation which would provide the necessary financing for irrigation works. The movement achieved its goal with the enactment by Congress of the Reclamation Act of 1902,²⁵ which created the federal reclamation program. The Bureau of Reclamation, U.S. Department of the Interior (Reclamation), administers the program.²⁶

Despite the availability of federal financing, the Reclamation Act of 1902 still did not yield financially successful irrigation projects. Thus, over the next 40 years, the program evolved in a number of respects.²⁷ For the purposes of this paper, it is sufficient to summarize what became the main attributes of the federal reclamation program by 1939:²⁸

1. Construction of projects by Reclamation has been, with but a few exceptions in more recent years, totally financed by Congressional appropriations.
2. Subject to item 6 below, construction costs allocable to irrigation purposes are repayable by irrigators, albeit without interest and over periods of 40 to 50 years (in contrast to the 1902 act's original requirement that repayment be made within ten years). Furthermore,

²⁴ See D. PISANI, *supra* note 23, at 127-272 and M. ROBINSON, *supra* note 23, at 10-18. The irrigation movement was imbedded in the much broader conservation movement of the 1890s and early 1900s, the history of which is extensively chronicled in S. HAYS, CONSERVATION AND THE GOSPEL OF EFFICIENCY: THE PROGRESSIVE CONSERVATION MOVEMENT, 1890-1920 (1959).

²⁵ Reclamation Act of 1902, ch. 1093, 32 Stat. 388 (codified in scattered sections of 43 U.S.C.A. ch. 12 (1986 & Supp. 1997)).

²⁶ The agency which was created in 1902 by the Secretary of the Interior to carry out the federal reclamation program was originally known as the Reclamation Service and was a component of the Geological Survey, U. S. Department of the Interior. The Reclamation Service became a separate bureau within the department in 1907 and was renamed the Bureau of Reclamation in 1923.

²⁷ See generally M. ROBINSON, *supra* note 23, at 19-59.

²⁸ 1939 is selected because the Reclamation Projects Act of 1939, ch. 418, 53 Stat. 1187 (codified as amended at 43 U.S.C.A. §§ 485-485k (1986)) essentially brought to completion the major changes wrought in the federal reclamation program during its first 40 years. The program as it existed in 1939 was largely what applied to developments in the Colorado and Missouri River Basins during the 1940s, 50s and 60s, although further modifications in the program were still made by Congress after 1939.

repayment usually did not have to be initiated until after a five to ten year development period following the first delivery of project water.

3. Construction costs allocable to hydropower and municipal and industrial water supply purposes are repaid by those users with interest, but interest rates are very favorable and 40 to 50 years is allowed for repayment.

4. The construction costs of multipurpose dams and reservoirs which are allocable to fish and wildlife and recreation are non-reimbursable, although the costs of separate recreation and fish and wildlife facilities (so-called separable costs) eventually became reimbursable, at 50 and 25 percent, respectively, under current law.²⁹

5. Water and power users have to pay all annual operation and maintenance (O&M) costs which are allocable to reimbursable purposes such as irrigation water supplies, municipal and industrial water supplies, and hydropower. O&M costs of multiple purpose dams and reservoirs which are allocable to recreation and fish and wildlife are borne by the government, but the O&M costs of separate features devoted to these purposes must be borne by a non-federal entity.

6. On many projects, if irrigators lack the ability to pay both O&M costs and construction costs, then they have to pay only O&M costs and such portion of the construction costs allocable to irrigation purposes as are within their "ability to pay." The portion of construction costs which exceeds irrigators' ability to pay is recovered by increasing the charges to those who purchase hydropower from a project (*i.e.*, the power users bear not only the O&M and construction costs allocable to the power function, but also a portion of the construction costs, although without interest, allocable to the irrigation purpose).

Obviously, the federal reclamation program constituted a very attractive subsidy to those interested in water development. Not surprisingly, this set the stage for numerous conflicts, and eventual political compromises and agreements, between upper and lower basin interests as each sought to gain a share of the Congressional dollars which flowed into the federal

²⁹ Federal Water Project Recreation Act, 16 U.S.C.A. § 4601-13 (1993)). Separable fish and wildlife costs were originally reimbursable at 50 percent. Federal Water Project Recreation Act, Pub. L. No. 89-72, § 2, 79 Stat. 213 (1965). This was reduced to 25 percent in 1974. Act of March 7, 1974, § 77(a), 88 Stat. 33.

reclamation program.³⁰ The stakes, measured in terms of regional economic development, were very large.

Federal Flood Control and Navigation Projects

Federal involvement in navigation improvements to the Nation's rivers dates back to the very early 1800s, when the U.S. Army Corps of Engineers was first authorized to remove snags from the Mississippi River. Over the course of that century, vast numbers of projects -- from removal of snags, to the dredging of channels, to the construction of dams and locks -- were authorized in the Mississippi, Ohio, Tennessee, Missouri and other major rivers of the Nation. In general, both the cost of constructing capital improvements, and the cost of operating and maintaining them, were borne by the federal government, with there being no requirement for the repayment of these costs by benefitted users until recently.

Federal involvement in flood control improvements likewise dates back well into the 1800s, again through the Corps of Engineers. Improvements initially were limited to dikes, levees, cutoffs, and other manipulations of a river channel's configuration. Authorization of federally financed reservoir projects for flood control purposes followed around the turn of the century.

Originally, the costs of constructing and maintaining flood control facilities were, as with navigation projects, borne entirely by the United States, with no repayment required from those protected by such facilities. Congress changed this policy in 1936, when it enacted legislation requiring states or their political subdivisions, at their expense, to: (a) provide all lands, easements, and rights-of-way required for a flood control project, and (b) operate and maintain facilities after they had been constructed.³¹

If flood control is incorporated into a multipurpose Corps of Engineers' reservoir project (e.g., a project for power generation and flood control), then the joint costs of multipurpose project features are allocated among the

³⁰ More than \$16 billion dollars have been invested in reclamation projects. These projects deliver water annually to about 28 million people and about 10 million acres of irrigated land (which is about one-third of the irrigated acreage in the 17 western states), they generate approximately 60 billion kilowatt hours each year (making the Bureau of Reclamation the nation's second largest producer of hydroelectric power and 11th largest electric utility, based on generating capacity), they provide water-based recreation to about 80 million visitors each year, and they have prevented nearly \$200 million in average annual flood damages between 1950 and 1990.

³¹ Flood Control Act of 1936, ch. 688, § 3, 49 Stat. 1571 (codified at 33 U.S.C.A. § 701c (1986)).

various purposes, with the flood control purpose being non-reimbursable. If recreation or fish and wildlife purposes are included with a Corps of Engineers' flood control project, then the construction and O&M costs allocable to these purposes are subject to the same arrangements as discussed above for the federal reclamation program.³²

In short, federal navigation and flood control projects, as with the federal reclamation program, presented an attractive subsidy. This too helped set the stage for conflicts between upper and lower basins as each sought a slice of the federal water development project pie.

The Colorado River Basin: The Agreements and the Results

Introduction

The Colorado River and its major tributaries rise in the Rocky Mountains in Colorado and Wyoming. Its drainage basin encompasses portions of those two states, as well as portions of California, Nevada, New Mexico, and Utah, and essentially all of Arizona. Except in the mountains which ring the northwestern, northern and eastern boundaries of the Colorado River Basin, the climate of the basin ranges from arid steppes to deserts.

Very small portions of the basin also lie in Mexico, although these desert drainage areas contribute no flows to the river. What is important is that the mainstem of the Colorado River flows into Mexico on its way to the Gulf of California and is an important water resource to that country.

Nearly all of the flow of the river arises in the upper portion of the Colorado River Basin. The average annual undepleted flow of the river at Lee Ferry, Arizona, which is the dividing point between the upper and lower basins, is about 15 million acre-feet per year.³³ The average supply which arises in the tributaries below that point is in dispute to some extent, but averages no more than 3 million acre-feet per year, and likely is less.

³² Federal Water Project Recreation Act, 16 U.S.C. § 4601-13 (1993).

³³ UPPER COLORADO RIVER COMMISSION, FORTY-EIGHTH ANNUAL REPORT 21-28 (1996).

The Historical Agreements ³⁴

The lower reaches of the lower mainstem³⁵ of the Colorado River were used for commercial navigation to a small extent in the early years of this century. However, the primary interest of Arizona and California 100 years ago was to dam the lower mainstem for flood control and water conservation storage so that they could irrigate their fields and provide water to their growing population centers, the principal ones of which were outside of the basin (especially in southern California).

Concerns on the part of Colorado, New Mexico, Utah, and Wyoming (the "Upper Division States"³⁶), and even Arizona and Nevada, about the rate of irrigation development in California dated to the turn of the century. Since the introduction of Colorado River water into California's Imperial Valley in 1901:

... leaders in the Colorado River Basin outside of California had become troubled. All recognized that the future development of their areas depended heavily on the Colorado, and they watched uneasily the advances being made by a state that contributed the least amount of runoff to the river.

Particularly disturbed were residents in the upper portion of the basin where the growing season was shorter and the lands less easily watered than in California or Arizona. The upper states wanted reclamation projects of their own, including some that would benefit areas outside the basin, especially in western Utah and eastern Colorado. ...

³⁴ Unless noted to the contrary in subsequent footnotes, this summary is drawn from Hundley, *The West Against Itself: The Colorado River -- An Institutional History*, in *NEW COURSES FOR THE COLORADO RIVER -- MAJOR ISSUES FOR THE NEXT CENTURY* 9 (G. Weatherford and F. Brown ed.s 1986).

³⁵ In this paper, the "lower mainstem" of the river will mean the mainstem of the Colorado River downstream from the present location of Hoover Dam in the Black Canyon east of Las Vegas.

³⁶ Article II of the Colorado River Compact defines the "States of the Upper Division" as the States of Colorado, New Mexico, Utah, and Wyoming, while the "States of the Lower Division" is defined to mean the States of Arizona, California, and Nevada. For the purposes of this paper, these will be shortened to "Upper Division States" and "Lower Division States," respectively. *Colorado River Compact* in *DOCUMENTS ON THE USE AND CONTROL OF THE WATERS OF INTERSTATE AND INTERNATIONAL STREAMS* 53 (T. Witmer ed. 1968) [hereinafter T. WITMER].

Heightening such concern throughout the Upper Basin were a series of events in early 1922. The first occurred in February when the Interior Department issued the long-awaited ... Fall-Davis Report -- ... it recommended construction of an All-American Canal, a storage reservoir "at or near Boulder Canyon," and the development of hydroelectric power to repay the cost of the dam. The next development that disconcerted the upper states took place in April, when [California's] Congressman Phil Swing ... and Senator Hiram Johnson ... introduced a bill to implement the report's recommendations. This Boulder Canyon ... bill met with immediate hostility from Upper Basin representative [sic], who mounted a vigorous campaign against it.

*Still another cause for alarm in the upper states occurred two months later. This involved ... the doctrine of prior appropriation This principle was recognized within each basin state, but uncertainty existed over whether it applied to users in two or more states on a common stream. In June 1922 the U.S. Supreme Court, in *Wyoming v. Colorado*, eliminated all doubt by announcing that the rule of priority applied regardless of state lines. Now even the law seemed to favor faster-growing states like California. Upper Basin leaders responded to the decision by reaffirming adamant opposition to all reclamation on the lower Colorado [River] until their own interests were safeguarded.*

*The leader in defining those interests and in devising a protective strategy was Delph Carpenter of Colorado. ... [H]e had long advocated compacts ... to resolve interstate disputes. Although no states had demonstrated the practicality of his idea by apportioning water among themselves, Carpenter believed that the usual recourse to litigation was a mistake His participation in Colorado's lengthy Supreme Court battle ... [in *Wyoming v. Colorado*] had reinforced these views If the states did not put their houses in order, he feared that the federal government might do it for them, thus "weakening ... state autonomy on all rivers."*

In 1920, ... Carpenter called for a compact covering the Colorado River. It was an idea whose time had come. ... In August 1921 Congress consented to the negotiation of a compact. ...

The commissioners [i.e., the negotiators for each state and the United States] spent most of 1922 in fruitless bargaining. ... Finally convinced that they would be unable to settle on a specific volume of water for each state, they decided to concentrate instead on apportioning the river between the upper and lower sections of the basin. But even that decision was more

easily reached than implemented. ... Nonetheless, it set the stage for the final round of talks scheduled for November 1922 in New Mexico.

Great pressure for a settlement permeated the negotiations which began on November 9 Californians were driven by their desire for the ... [Boulder Canyon] Bill, which had been bottled up in Congress by Upper Basin representatives in control of key reclamation committees. Upper Basin leaders feared that if they did not negotiate a water supply for themselves, a disastrous flood on the lower river might stampede Congress into giving Californians the legislation that they wanted. "We simply must use every endeavor to bring about a compact ...," pleaded Delph Carpenter, "otherwise ... we may never again have a like opportunity."³⁷

While the negotiations were in fact completed that month, the stage had only been set for years, nay decades, of litigation before the U.S. Supreme Court and of political wrangling in the legislative forum of Congress.

The Colorado River Compact³⁸ does not allocate the waters of the "Colorado River System"³⁹ to the individual states in the basin. Rather, it apportions "in perpetuity" 7.5 million acre-feet per annum of "beneficial consumptive use" to the "Upper Basin" and to the "Lower Basin."⁴⁰ Having done this, it then imposes on the Upper Division States the obligation not to cause the flow of the Colorado River at Lee Ferry, Arizona,⁴¹ to be depleted below a

³⁷ Hundley, *supra* note 34, at 14-17. Footnotes omitted. Extensive histories of the negotiation of the Colorado River Compact may be found in R. OLSON, THE COLORADO RIVER COMPACT (1926) (thesis submitted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy, Harvard University, and published by the author; copy available in the library of the Upper Colorado River Commission, Salt Lake City, Utah); and N. HUNDLEY, WATER AND THE WEST: THE COLORADO RIVER COMPACT AND THE POLITICS OF WATER IN THE AMERICAN WEST (1975).

³⁸ *Colorado River Compact* in T. WITMER, *supra* note 36 [hereinafter *Colorado River Compact*].

³⁹ The compact defines the "... Colorado River System ... [as] that portion of the Colorado River and its tributaries within the United States of America." *Id.* art. II(a).

⁴⁰ *Id.* art. III(a). The Lower Basin is then given the right to increase its beneficial consumptive use by an additional 1 million acre-feet per annum. *Id.* art. III(b).

⁴¹ "Lee Ferry" is a point on the mainstem one mile below the mouth of the Paria River, which in turn is about 15 miles downstream from the present Glen Canyon Dam. *Id.* art. II(e). The "Upper Basin" and "Lower Basin" are defined as the drainage areas of the Colorado River System above and below, respectively, Lee Ferry and the areas outside of the drainage area of the Colorado River System which are "beneficially served" by waters diverted from above or below, respectively, Lee Ferry. The latter component of these definitions recognizes that major transbasin diversions are made out of the Colorado River System. *Id.* art.s II(f), II(g).

certain amount.⁴² These two features of the compact, along with certain other provisions, were intended to bring legal certainty as to what is available for beneficial consumptive use in each basin.⁴³

The compact does not even mention, let alone promise, federally financed water resources development either to the Upper or the Lower Division States. Thus, a means of financing water projects still had to be found by water users in both basins.

Because of then unresolved differences between Arizona and California about what their respective shares of the Lower Basin apportionment should be, Arizona was the lone state which did not ratify the compact when negotiations were completed.⁴⁴ This left the compact in limbo, since by its terms it could not take effect until it was ratified by all seven basin states and Congress.⁴⁵ The need for financing for water projects, coupled with Arizona's refusal to ratify the Colorado River Compact, prompted the next chapter in the river's institutional history.

The Upper Division States were anxious to have the compact take effect, as it would ensure that the doctrine of prior appropriation would not be applied as among the seven basin states. For its part, California was anxious to gain Congressional authorization of and appropriations for the construction of the

⁴² The compact provides that: "The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series" *Id.* art. III(d).

⁴³ The compact has arguably left certain matters unsettled principally because the flow of the river appears to be substantially less than was assumed to be the case at the time the compact was being negotiated. Based upon the 25 year period of record then available, the average annual virgin flow of the river at Lee Ferry appeared to be about 16.8 million acre-feet. However, from 1922-1996, the average annual virgin flow at Lee Ferry has only been 14.2 million acre-feet. UPPER COLORADO RIVER COMMISSION, *supra* note 33, at 25-26. Thus, the legal certainty sought by the Upper Division States may not, in retrospect, have been achieved. See, e.g., Getches, *Competing Demands for the Colorado River*, 56 U. COLO. L. REV. 413, 415-427 (1985) and Carlson and Boles, *supra* note 19.

⁴⁴ The other six states' acts of ratification are cited in T. WITMER, *supra* note 36, at 59.

⁴⁵ Colorado River Compact, *supra* note 38, at art. XI.

All American Canal⁴⁶ and Hoover Dam⁴⁷ pursuant to the federal reclamation program.

The deal that was eventually struck, over Arizona's objections, was embodied in the Boulder Canyon Project Act of 1928.⁴⁸ In this act, Congress authorized construction of the massive Hoover Dam (over 26 million acre-feet of storage capacity) on the lower mainstem of the Colorado River,⁴⁹ as desired by California, in exchange for California having to agree, by act of its legislature,⁵⁰ to a limit of 4.4 million acre-feet per year on its share of the Lower Basin's apportionment of 7.5 million acre-feet per year of beneficial consumptive use per annum, plus one-half of any surplus available to the Lower Basin. California did this the next year.⁵¹ Furthermore, the act provided that it became effective, as did Congress' ratification of the Colorado River Compact, only when the compact was ratified by six of the seven states.⁵²

⁴⁶ The canal which first served California's Imperial Valley diverted water from the Colorado River south of the international border with Mexico and traversed Mexico before entering the United States. Mexico's price for this arrangement was the right to take one-half of the water diverted. Since the turn of the century, Imperial Valley irrigators had dreamed of having a canal located entirely within the United States -- ergo, the All-American Canal.

⁴⁷ Hoover Dam would tame the devastating floods to which the lower mainstem of the river had been periodically subjected and firm up the water supplies that would be apportioned to the Lower Basin when the compact took effect.

⁴⁸ Boulder Canyon Project Act, ch. 42, 45 Stat. 1057 (1928) (codified as amended at 43 U.S.C.A. §§ 617-617t (1986)). The act took its name from the then anticipated location of Hoover Dam in Boulder Canyon. However, when Reclamation did further engineering work, the Black Canyon proved to be a better site and is where Hoover Dam was in fact constructed.

⁴⁹ Boulder Canyon Project Act, ch. 42, § 1, 45 Stat. 1057 (1928) (codified at 43 U.S.C.A. § 617 (1986)).

⁵⁰ Boulder Canyon Project Act, ch. 42, § 4(a), 45 Stat. 1058 (1928) (codified at 43 U.S.C.A. § 617c(a) (1986)).

⁵¹ Act of March 4, 1929, Cal. Stats. 1929, p. 37; Deering's Gen. L. (1944), Act 1491.

⁵² Boulder Canyon Project Act, ch. 42, §§ 4, 13, 45 Stat. 1058, 1064 (1928) (codified as amended at 43 U.S.C.A. §§ 617c, 617l (1986)).

Ratification of the compact for a second time by the states other than Arizona was completed in 1929.⁵³ With the compact in effect, the Upper Division States received protection against the potential interstate application of the doctrine of prior appropriation in the face of rapid downstream development in California. In turn, California, compliments of the federal reclamation program, obtained the federal financing and construction of the All American Canal and Hoover Dam. Arizona, from its perspective, got nothing, although it was also to eventually become a beneficiary of the storage provided by Hoover Dam.

The Boulder Canyon Project Act also authorized Arizona, California, and Nevada to enter into an agreement by which Arizona would receive 2.8 million acre-feet per annum and Nevada 300,000 acre-feet per annum out of the 7.5 million acre-feet per annum of beneficial consumptive use allocated to the Lower Basin.⁵⁴ While attempted, negotiation of this compact was never successful, with neither California nor Arizona being satisfied with the allocation suggested by Congress in the Boulder Canyon Project Act.

When negotiations failed, Arizona turned to the U.S. Supreme Court, where it spent the 1930s futilely arguing a series of three lawsuits filed against California.⁵⁵ The first sought to have the Boulder Canyon Project Act declared unconstitutional, while the third sought a judicial apportionment of the lower Colorado River. The Court squarely ruled against Arizona in all three cases. Faced with over 20 years of legislative and legal failures since the negotiation of the Colorado River Compact, and anxious to win Congressional support for some reclamation projects of its own, Arizona finally ratified the compact in 1944.⁵⁶

⁵³ In fact, Colorado, Nevada, New Mexico, and Wyoming had ratified the compact for a second time prior to the enactment of the Boulder Canyon Act, their second ratifications having already contained a waiver of the requirement that all seven states affirm the compact. Thus, only California's and Utah's legislatures had to act in 1929. The states' second acts of ratification are cited in T. WITMER, *supra* note 36, at 58-9.

⁵⁴ Boulder Canyon Project Act, ch. 42, § 4, 45 Stat. 1058 (1928) (codified as amended at 43 U.S.C.A. § 617c (1986)).

⁵⁵ *Arizona v. California*, 283 U.S. 423 (1931) (McReynolds, J., dissent); *Arizona v. California*, 292 U.S. 341 (1934); and *Arizona v. California*, 298 U.S. 558 (1936).

⁵⁶ The act of ratification is cited in T. WITMER, *supra* note 36, at 58.

Ratification of the compact by Arizona, the nearly concurrent execution of the Mexican Water Treaty with Mexico in 1944⁵⁷ (which allocated 1.5 million acre-feet per annum of the Colorado River to Mexico⁵⁸), and the conclusion of World War II set the stage for the next chapter in the river's political history. The preface to this chapter lay in the Boulder Canyon Project Act of 1928.

In formulating the act, the Upper Division States had bargained for and received, in addition to the provisions concerning the ratification of the Colorado River Compact, authorization for Reclamation:

*... to make investigation and public reports of the feasibility of projects for irrigation, generation of electric power, and other purposes ... for the purpose ... of formulating a comprehensive scheme of control and the improvement and utilization of the water of the Colorado River and its tributaries.*⁵⁹

While initiated in the 1930s, completion of the requisite investigations was delayed by World War II. When forthcoming in 1946, the inventory of potential developments in the Colorado River Basin⁶⁰ pointed out that there

⁵⁷ *Rio Grande, Colorado, and Tijuana Treaty* in T. WITMER, *supra* note 36, at 456 [hereinafter Mexican Water Treaty]. The treaty is commonly referred to in this country as the Mexican Water Treaty. It had been signed only three weeks before the Arizona legislature ratified the Colorado River Compact, a fact which reinforced Arizona's decision to bring its recalcitrance to an end. The history of tensions between the United States and Mexico over the waters of the Rio Grande, Tijuana, and Colorado Rivers, which tensions dated back to the 1870s, and the history of the negotiation of the treaty, are thoroughly documented in N. HUNDLEY, *DIVIDING THE WATERS: A CENTURY OF CONTROVERSY BETWEEN THE UNITED STATES AND MEXICO* (1966).

⁵⁸ Mexican Water Treaty, art. 10(a). Even though Article III(c) of the Colorado River Compact of 1922 anticipated a future treaty with Mexico and provided for the delivery of water to Mexico out of the supplies apportioned to the basin states in the event of a deficiency, this obligation is one which the basin states have argued should be fulfilled by the federal government since the flows of the river are seemingly less than was assumed when the compact was negotiated (*supra* note 43). Proposals to augment the water supply of the Colorado River have, however, thus far come to naught. *See, e.g.*, 43 U.S.C.A. § 1512 (1986), which was one of the deals contained in the Colorado River Basin Project Act of 1968, discussed *infra*.

⁵⁹ Boulder Canyon Project Act, ch. 42, § 15, 45 Stat. 1065 (1928) (codified at 43 U.S.C.A. § 617n (1986)).

⁶⁰ BUREAU OF RECLAMATION, U.S. DEPARTMENT OF THE INTERIOR, *THE COLORADO RIVER: A COMPREHENSIVE REPORT ON THE DEVELOPMENT OF THE WATER RESOURCES OF THE COLORADO RIVER BASIN FOR IRRIGATION, POWER PRODUCTION, AND OTHER BENEFICIAL USES IN ARIZONA, CALIFORNIA, COLORADO, NEVADA, NEW MEXICO, UTAH, AND WYOMING* (1946).

were more potential projects than water available for development. The Bureau of Reclamation (Reclamation), which had prepared the inventory, took the position that projects could not be selected and development could not proceed until the Upper Division States agreed on a suballocation of the water apportioned to the Upper Basin by the Colorado River Compact.⁶¹

Given the federal government's requirements, and given Arizona's ratification of the Colorado River Compact in 1944, the execution of the Mexican Water Treaty with Mexico in 1944, and the continued rapid growth in the use of Colorado River water by California, the Upper Division States (and Arizona⁶²) promptly set about the negotiation of an interstate compact among themselves. The Upper Colorado River Basin Compact⁶³ was executed in 1948 and ratified by all five signatory states and Congress by the next year.⁶⁴

With this new compact in hand, the Upper Division States worked closely with Reclamation to refine Reclamation's 1946 report into a plan for development of the Upper Basin. The groundwork for what was to become the Colorado River Storage Project (CRSP) was laid in Reclamation's resulting 1950 report.⁶⁵ The first bill to authorize the CRSP was introduced in Congress in 1952.

... It called for a billion-dollar dam-building program with major reservoirs at Echo Park on the Green River and at Glen Canyon on the main stream near the Arizona-Utah border. The bill immediately aroused opposition from southern Californians who viewed any significant developments on the upper river as threats to their own water uses. More recent measurements of flow had been calling into question the rosy forecasts on which the 1922 [Colorado River] compact had been based.

⁶¹ *Id.* at 3.

⁶² Arizona, even though a Lower Division State within the meaning of the Colorado River Compact, also lies partially within the Upper Basin as that term is defined in the compact. *Supra* notes 36 and 41. Thus, it received a portion of the beneficial consumptive use apportioned to the Upper Basin by the compact.

⁶³ *Upper Colorado River Basin Compact* in T. WITMER, *supra* note 36, at 339.

⁶⁴ The states' and Congress' acts of ratification are cited in T. WITMER, *supra* note 36, at 352.

⁶⁵ BUREAU OF RECLAMATION, U.S. DEPARTMENT OF THE INTERIOR, COLORADO RIVER STORAGE PROJECT AND PARTICIPATING PROJECTS: UPPER COLORADO RIVER BASIN (1950).

*Major opposition also emerged nationwide and focused on the Echo Park reservoir, which would flood the unique and beautiful canyons of Dinosaur National Monument. The alarm escalated into the biggest battle over wilderness preservation since John Muir had tried to keep a dam out of Hetch Hetchy Valley [California] at the turn of the century. The contest was essentially a civil war in which both sides labeled themselves "conservationists." While one side campaigned for conservation for use through dams ..., the other argued for conservation through preservation of unique wilderness areas. ...*⁶⁶

Proponents of the CRSP eventually removed the Echo Park reservoir from the legislation and finally won its passage.⁶⁷ With enactment of the Colorado River Storage Project Act in 1956,⁶⁸ the Upper Division States gained the authorization of four so-called storage units (Glen Canyon Dam, the Aspinall Unit,⁶⁹ Flaming Gorge Dam, and Navajo Dam) and of 11 so-called participating projects, which were primarily for irrigation.⁷⁰ Further legislation in 1962 authorized two additional CRSP participating projects and one non-CRSP project⁷¹, while 1964 legislation authorized three more CRSP participating projects.⁷²

⁶⁶ Hundley, *supra* note 34, at 29.

⁶⁷ The history surrounding Congressional consideration of the legislation to authorize the CRSP is, of course, far more extensive than indicated here. For a complete treatment, see D. MANN, G. WEATHERFORD, & P. NICHOLS, LEGAL-POLITICAL HISTORY OF WATER RESOURCE DEVELOPMENT IN THE UPPER COLORADO RIVER BASIN 1-36 (Lake Powell Research Project Bulletin No. 4, 1974).

⁶⁸ Colorado River Storage Project Act, ch. 203, 70 Stat. 105 (1956) (codified as amended at 43 U.S.C.A. § 620-620o (1986)).

⁶⁹ This unit was called the Curecanti Unit in the original 1956 legislation. Its name was subsequently changed to the Aspinall Unit by Pub. L. No. 96-375, § 7, 94 Stat. 1507 (1980). The unit consists of Blue Mesa, Morrow Point, and Crystal Dams and Reservoirs.

⁷⁰ The 11 participating projects were the Central Utah (initial phase), which consisted of four units (Jensen, Vernal, Upalco, and Bonneville) that were themselves physically separate projects, Emery County, Florida, Hammond, La Barge, Lyman, Paonia, Pine River Extension, Seedskadee, Silt, and Smith Fork.

⁷¹ The Navajo Indian Irrigation Project and the San Juan-Chama Project were authorized as CRSP participating projects by the Act of June 13, 1962, Pub. L. No. 87-483, 76 Stat. 96, while the separate, non-CRSP Fryingpan-Arkansas Project was authorized by the Act of August 15, 1962, Pub. L. No. 87-590, 76 Stat. 389.

⁷² The Savery-Pot Hook, Bostwick Park, and Fruitland Mesa participating projects were authorized by the Act of September 2, 1964, Pub. L. No. 88-568, 78 Stat. 852.

Participating projects received that denomination because they "participate" in the revenues received from the sale of the hydroelectric energy generated at Glen Canyon Dam, Flaming Gorge Dam, and the dams of the Aspinall Unit in that these revenues are used to repay not only the costs allocable to the hydropower function of those three projects, but also to repay the costs of the participating units allocable to irrigation which are beyond the ability of irrigators to repay. This repayment mechanism, which is known as the Upper Colorado River Basin Fund, was established by section 5 of the Colorado River Storage Project Act.⁷³

Meanwhile, Arizona, having ratified the Colorado River Compact in 1944, started working with Reclamation to capture a federal reclamation prize for itself -- the Central Arizona Project (CAP). A 1947 report by Reclamation had resurrected this dormant idea and endorsed it as now being economically justified. However,

... When Arizonans introduced a bill in Congress [in 1948] to authorize the CAP, they encountered stiff opposition from Californians who argued that Arizona was attempting to use water that did not belong to the state. ... [D]issension centered on conflicting interpretations of the 1922 [Colorado River] compact. The differing claims caused Congress to refuse approval of the CAP until the two states had resolved their differences. Congress did not want to invest in a project for which there might be not water.

The news bitterly disappointed Arizonans. While the Upper Basin, California, and Mexico were moving ahead with their projects, Arizonans had remained stymied. They believed their only recourse was to appeal once more to the U.S. Supreme Court.⁷⁴

Arizona filed its fourth lawsuit against California in the U.S. Supreme Court in 1952, again seeking judicial apportionment of the Colorado River Compact's allocation to the Lower Basin. While the Court had refused Arizona's earlier suit in this regard on jurisdictional grounds and because the Lower Basin allocation exceeded then current uses,⁷⁵ this time the Court was persuaded that Arizona might suffer harm if the dispute with California were not resolved.

⁷³ Colorado River Storage Project Act, ch. 203, § 5, 70 Stat. 107 (1956) (codified as amended at 43 U.S.C.A. § 620d (1986)).

⁷⁴ Hundley, *supra* note 34, at 30-31.

⁷⁵ *Arizona v. California*, 298 U.S. 558 (1936).

In defending against Arizona's suit, California argued for substantially more than the 4.4 million acre-feet per year provided to it by the Boulder Canyon Project Act. However, after 11 years of trial and arguments, Arizona emerged victorious when the Court held, in a 1963 opinion⁷⁶ which was implemented by a 1964 decree,⁷⁷ that, among other things:

(1) Congress may, under its navigation and general welfare powers, apportion interstate streams by legislation.

(2) By enacting the Boulder Canyon Project Act, Congress exercised this power by "apportioning" 4.4 [million acre-feet] to California in the limitation provision [of the act] and specifying Arizona's and Nevada's shares [2.8 and .3 million acre-feet, respectively] through the authorization of a lower basin compact. Furthermore, Congress delegated to the Secretary of the Interior the power to contract for storage and delivery of [Boulder Canyon] project waters, and the Secretary then extended [sic] contracts reflecting the authorized shares.

(3) Federal law controls both the interstate and intrastate distribution of [Boulder Canyon] project waters, preempting state water law. ...

The opinion demonstrated that the Court prefers congressional allocations of interstate waters to playing the role of a trial court in complex litigation. The Court strained to find the federal power to allocate water among states and that it had been exercised.⁷⁸

Thus did the Court affirm the power of Congress to apportion the waters of an interstate stream. The Boulder Canyon Project Act is, however, the only time that this has occurred.

⁷⁶ Arizona v. California, 373 U.S. 546 (1963) (Douglas, J., dissent and Harlan, J., joined by Douglas and Stewart, JJ., dissenting separately).

⁷⁷ Arizona v. California, 376 U.S. 340 (1964) (Harlan and Stewart, JJ., dissent).

⁷⁸ D. GETCHES, *supra* note 5, at 414-415.

Having garnered 2.8 million acre-feet per year from the mainstem of the Colorado River,⁷⁹ Arizona returned to the halls of Congress to seek anew the authorization of the CAP. California was, however, incensed at its loss in the Supreme Court, and the Upper Division States feared, as they always had, further Lower Basin development. The legislation introduced by the Arizona delegation was immediately bottled up.

Arizona had to mollify more than California. The concern about the water supply [of the Colorado River being less than assumed when the 1922 compact was negotiated] had spread to the Upper Basin. If the river flow ... [was as little] as many now suspected, then the upper states, after fulfilling their obligation to the Lower Basin, would receive [only] 6.5 million acre-feet, a million acre-feet less than anticipated in the 1922 compact. ... Worried that such water-supply estimates might later prevent them from obtaining projects on their own, they tied their fortunes to the Arizona bill. They agreed to support it but only in exchange for a provision authorizing five [additional CRSP participating] projects for the Upper Basin -- Animas-La Plata, Dolores, Dallas [Creek], West Divide, and San Miguel.

...⁸⁰

These five projects would all benefit Colorado, with the Animas-La Plata Project also serving water to New Mexico. In addition, Utah sought the authorization of the Uintah Unit of the Central Utah Project, this being the fifth unit of that project, and New Mexico sought the authorization of the Hooker Dam on the headwaters of the Gila River, which river lies in the Lower Basin.

A brochure circulated during the legislative debate over the CAP waxed eloquently about the five Colorado projects -- and illustrates the fervor brought to the debate by Colorado's water development interests:

⁷⁹ Much disputed, depending upon which basin state one is representing, is whether the Court's opinion in *Arizona v. California* does or does not stand for the proposition that water arising in Arizona in the tributaries to the Colorado River (e.g., the Bill Williams, Little Colorado, and Gila Rivers) is available to Arizona in addition to the 2.8 million acre-feet allocated to it by Congress from the mainstem. This dispute arises because language in the opinion, which addressed only the Boulder Canyon Project Act, arguably can be cited as supporting this result, yet the compact, which the Court did not purport to interpret, apportions the beneficial consumptive use of the "Colorado River System," which term means "that portion of the Colorado river and its tributaries within the United States ..." (Art. II(a)).

⁸⁰ Hundley, *supra* note 34, at 36.

There is a river -- and its name is the Colorado. The streams thereof ... "shall make glad the city" The means through which these streams will do their gladdening are five reclamation projects in western Colorado: The Animas-La Plata, the Dolores, the Dallas Creek, the San Miguel and the West Divide projects. These projects stretch across the Western Slope of Colorado like the five fingers of a giant hand, trying to conserve for use in Colorado some of the waters which are allocated to that state. ... In total, the Fiver Fingers projects will provide about 719 thousand acre-feet of water annually Of this total, 398 thousand acre-feet represent actual depletion[s] Such depletion, in turn, represents only a portion of ... Colorado's net share of Colorado River water. ... 11 years have gone by since passage of the CRSP Act which was enacted to permit Upper Basin States to develop their full share of Colorado River water Yet ... Colorado to date has received authorization for projects under the CRSP which consume a "grand" total of only 95 thousand acre-feet of water a year -- much less than has been authorized for any other Upper Basin State. The Five Fingers projects now stand ready for authorization. ...⁸¹

After over four years of legislative maneuvering, the Colorado River Basin Project Act emerged in 1968.⁸² It authorized the construction of the CAP for Arizona,⁸³ as well as the "Five Fingers" projects for Colorado, the Uintah

⁸¹ THE COLORADO RIVER EDUCATIONAL FUND OF DENVER, COLORADO, FIVE FINGERS PROJECTS (no pagination and undated). This brochure was probably produced in 1967 during the 90th Congress' consideration of legislation (H.R. 3300 and S. 1242) to authorize the CAP.

⁸² Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (codified as amended in part at 43 U.S.C.A. §§ 1501-56 (1986 & Supp. 1997)). The politics and eventual passage of the Colorado River Basin Project Act were vastly more complicated and convoluted than is indicated in these few paragraphs. The interested reader can find an engagingly complete history in H. INGRAM, *supra* note 3, at 26-115.

⁸³ Arizona, however, paid a price for the CAP's authorization in that it needed the votes of the California Congressional delegation to move the bill through Congress. California's price, among other things, was to get back from Arizona some of what it had lost in the 1963 *Arizona v. California* ruling. Section 301 of the act provides, in effect, that California's 4.4 million acre-feet has priority over diversions for the CAP in the event of shortages. Colorado River Basin Project Act, Pub. L. No. 90-537, § 301(b), 82 Stat. 887 (1968) (codified at 43 U.S.C.A. § 1521(b) (1986)).

Unit of the Central Utah Project,⁸⁴ and the Hooker Dam. Not coincidentally, the chairman of the Interior and Insular Affairs Committee in the House of Representatives, through which the legislation had to pass, was Congressman Wayne Aspinall, from Colorado's Western Slope.

This act constituted the last major political agreement between the upper and lower basins over the authorization of federal reclamation projects. The very language of the statute illustrated the Upper Division States', particularly Colorado's, concerns about being, as it were, "left behind in the dust:"

*The Secretary [of the Interior] is directed to proceed as nearly as practicable with the construction of the ... [Five Fingers] participating Federal reclamation projects concurrently with the construction of the Central Arizona Project, to the end that such projects shall be completed not later than the date of the first delivery of water from said Central Arizona Project.*⁸⁵

The Actual Results

The projects authorized for the benefit of the Lower Division States, from 1928 through 1968, as part of legislative deals with the Upper Division States have all been completed. Hoover Dam was completed in the mid-1930s, the All American Canal was finished in 1942, various diversion works and other facilities have been completed on the lower mainstem of the river (e.g., Parker Dam, Davis Dam, and Senator Wash Dam), and the last major features of the CAP have been completed within the past few years.

To be sure, the CAP that has been built is significantly different in certain regards than the CAP that was authorized in 1968: some originally authorized features of the project were deleted, Congress has required that significant non-federal cost sharing be provided toward the completion of

⁸⁴ Although authorized, construction of the Uintah Unit was conditioned on the requirement that a feasibility report first be completed and submitted to the Congress, together with certification from the Secretary of the Interior "... that, in his judgment, the benefits of such unit ... will exceed the costs and that such unit is physically and financially feasible" Colorado River Basin Project Act, Pub. L. No. 90-537, § 501(a), 82 Stat. 896 (1968). This requirement was then struck by the Congressional Reports Elimination Act of 1980, Pub. L. No. 96-470, § 108(c), 94 Stat. 2239.

⁸⁵ Colorado River Basin Project Act, Pub. L. No. 90-537, § 501(b), 82 Stat. 897 (1968) (codified at 43 U.S.C.A. § 620a-1 (1986)).

construction, and portions of the project's water supply have been allocated to other than the originally contemplated irrigation beneficiaries.⁸⁶ However, the CAP, even though altered, is physically capable of delivering a little more than 2 million acre-feet per year to Arizona from the Colorado River⁸⁷, as it was originally contemplated it would do.

In short, the Lower Division States have, for the most part, gotten that for which they bargained. Indeed, within just the past few years, Arizona, California, and Nevada have, for the first time, begun consuming an aggregate of about 7.5 million acre-feet per year from the mainstem of the Colorado River⁸⁸ -- a feat made possible almost entirely by federally financed and constructed projects.

In the Upper Division States, the same result has not obtained. While the four storage units of the CRSP were constructed, nine of the 25 authorized CRSP participating projects⁸⁹ have not been constructed:

- The Pine River Extension project was deauthorized in 1968,⁹⁰ albeit with the concurrence of the state in which the project would have been located.

⁸⁶ See H. INGRAM, *supra* note 3, at 123-127.

⁸⁷ Full use of the CAP's pumping capacity would require substantial purchases of electrical energy beyond that which is available to the project under favorable terms from the federally owned share of the Navajo Generating Station, a coal-fired plant in Arizona. This fact, when coupled with the economic constraints which the CAP irrigation districts presently face, makes it likely, in the author's opinion, that annual CAP deliveries will not exceed about 1.5 million acre-feet for some time to come. Deliveries in 1996 reached nearly 1.2 million acre-feet and are expected to be about the same in 1997. Personal communication from Tom Burbey, Lower Colorado Region, U.S. Bureau of Reclamation, to the author (April 29, 1997).

⁸⁸ Consumptive uses (diversions minus return flows to the river) reached 7.5 million acre-feet for the first time in calendar year 1989. They actually exceeded this limit, due to "inadvertent overruns," by a slight amount that year and by about 150,000 acre-feet the next year. While annual fluctuations will occur, consumptive uses are expected to remain near or at this limit from now on.

⁸⁹ Counting the Central Utah Project as a single participating project, 21 participating projects have been authorized (including the originally authorized, but subsequently deauthorized, Pine River Extension). If the Central Utah Project's five authorized units (Vernal, Jensen, Upalco, Uintah, and Bonneville) are counted as five separate projects, then there have been 25 authorized participating projects (again including the Pine River Extension).

⁹⁰ Colorado River Basin Project Act, Pub. L. No. 90-537, § 501(a), 82 Stat. 897 (1968) (amending 43 U.S.C.A § 620a).

- Construction of the La Barge, Savery-Pot Hook, Fruitland Mesa, West Divide, and San Miguel Projects has been, in the euphemism of the bureaucracy, "indefinitely deferred."⁹¹
- The Animas-La Plata Project, even though it became the cornerstone of a major 1986 Indian water rights settlement that was subsequently confirmed in legislation passed by Congress in 1988,⁹² remains mired in litigation and controversy, with construction having not yet been initiated.
- The Uintah and Upalco Units of the Central Utah Project have not been constructed, although recent legislation allows the Central Utah Water Conservancy District the opportunity to construct certain features of these two units.⁹³

Furthermore, Hooker Dam, although it would develop waters of the Lower Basin, has not been built to New Mexico's benefit.

To add insult to injury in the eyes of some, only two of Colorado's Five Fingers participating projects, which projects were to have been built "concurrently" with the construction of the CAP, have even been constructed, let alone completed "not later than the first date of delivery of water from the" CAP. Water was first delivered by the CAP in 1985, but the Dolores Project did not start deliveries until 1987 and the Dallas Creek Project not until 1990.

Even when construction has been initiated, substantial portions of some projects have yet to be, and may never be, undertaken.

⁹¹ Furthermore, the withdrawal from the public domain of the lands required for the La Barge Project was revoked in 1968. Revocation of the withdrawals for the other four projects is presently pending. See UPPER COLORADO RIVER COMMISSION, *supra* note 33, at 45, 47.

⁹² Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973.

⁹³ 1992 legislation authorizes appropriations for a Uinta Basin Replacement Project "... to increase efficiency, enhance beneficial uses, and achieve greater water conservation within the Uinta Basin" Central Utah Project Completion Act, Pub. L. No. 102-575, Titles II-VI, § 203, 106 Stat. 4612 (1992). However, the Uintah and Upalco Units were not de-authorized. The Central Utah Water Conservancy District has moved ahead with planning for a project which would replace the former Upalco Unit, which replacement project encompasses features addressed by section 203, as well as other facilities from the unit as originally conceived.

- In the Central Utah Project, only portions of the originally contemplated Jensen Unit have been constructed. While the major storage reservoir for the Bonneville Unit was completed in 1992, the originally envisioned scope of the unit and the project yield allocated to irrigation were significantly reduced as the price of obtaining legislation to increase the authorized cost ceiling for the unit when that legislation encountered stiff environmental opposition both from within and outside of Utah.⁹⁴ Construction has yet to be completed on the remaining authorized features of the unit.
- The Navajo Indian Irrigation Project's delivery system, which receives water from Navajo Dam and Reservoir, has been under construction for years on end, but the system has been extended thus far to only seven of the 11 blocks of land that are to be brought under cultivation. Construction is continuing at this time on the facilities required for the eight block.
- While the Fontenelle Dam and Reservoir of the Seedskaadee participating project were constructed on the Green River in Wyoming, the irrigation delivery system for which the project called never was built.

Finally, even if constructed, the originally intended benefits of some projects in the Upper Division States are not being, or may not be, realized. This has occurred principally because of efforts required by law, or undertaken in the discretion of federal agencies, to address environmental concerns not foreseen at the time the historical deals were put together. Foremost among these are probably the requirements of the Endangered Species Act⁹⁵ with respect to threatened and endangered fish species native to the Colorado River and its tributaries. Since these matters are being addressed at some length in the basin study of the Colorado River being done for the Western Water Policy Review Advisory Commission by another author, a few brief examples will suffice for the purposes of this paper.

In terms of the impacts of endangered fish species, a good example would be the situation at Ruedi Reservoir, which is the western Colorado storage feature of the transcontinental Fryingpan-Arkansas Project. The full yield of this reservoir may not be available for beneficial consumptive use in the

⁹⁴ Central Utah Project Completion Act, Pub. L. No. 102-575, Titles II-VI, 106 Stat. 4605 (1992).

⁹⁵ Endangered Species Act, 16 U.S.C.A. §§ 1531-43 (1985 & Supp. 1997).

future due to instream flow requirements for endangered fish species downstream from the reservoir.⁹⁶ On the other hand, it must be acknowledged that the oil shale industry and other growth upon which the need for this reservoir was premised have not developed as anticipated and the contemporary use of a portion of the reservoir's yield for instream flows has been negotiated (some would say under duress) by the State of Colorado with the U.S. Fish and Wildlife Service.

Reductions in project yield for originally intended irrigation uses have also occurred. One example would be the reduction in irrigation supplies from the Bonneville Unit of the Central Utah Project, referred to above. Another example would be the recent controversies at the Dolores Project in Colorado. Here, environmental interests desire to devote more of the reservoir's yield, potentially at the expense of the water available for irrigation and municipal uses, to sustaining the coldwater trout fishery below McPhee Dam than was originally contemplated, which fishery largely did not exist prior to the construction of the dam.

Finally, there are the on-going debates among numerous interests concerning many, many issues about the overall operation of the major reservoirs in the Colorado River System. While these are beyond the scope of the historical inquiry being made in this paper, suffice it to say that from the perspective of Upper Basin water development interests, the CRSP storage units, especially Glen Canyon Dam, were intended to assist the Upper Division States in meeting their delivery obligations at Lee Ferry so that they were not prevented from fully utilizing the consumptive use apportioned to them by the Colorado River Compact. Yet, current events threaten, in the eyes of many, otherwise. The tip of the iceberg has been the Grand Canyon Protection Act of 1992,⁹⁷ which has required the development of revised operating criteria for Glen Canyon Dam, which revisions were driven by various environmental concerns.⁹⁸

In summary, upper basin water development interests often believe not only that they have been denied the federal water projects for which they

⁹⁶ UPPER COLORADO RIVER COMMISSION, *supra* note 33, at 44.

⁹⁷ Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669.

⁹⁸ A very brief summary of the studies, environmental impact statement, and the October, 1996, record of decision by the Secretary of the Interior concerning the selection of revised operating criteria for Glen Canyon Dam may be found in UPPER COLORADO RIVER COMMISSION, *supra* note 33, at 32-39.

bargained, but that they are now also suffering the loss of the benefits which were to have been provided by the projects that have been constructed. Furthermore, they often have a sense that this loss of intended benefits is being visited only upon the Upper Division States, but not the Lower Division States.⁹⁹ Whatever the reality may be, the perception that the upper basin is being treated inequitably by the federal establishment continues to drive, at least in part, certain of the upper basin/lower basin issues of today.

The Missouri River Basin: The Agreements and the Results

Introduction

The headwaters of the Missouri River lie in the Rocky Mountains of western Montana and northwestern Wyoming. The river's basin drains ten states -- portions of those two states and of Colorado, Kansas, Missouri, Iowa, and North Dakota; a very small area in the extreme southwestern corner of Minnesota; nearly all of South Dakota; and the entirety of Nebraska.

The Missouri River Basin contrasts with the Colorado River Basin in two significant regards. First, while the Colorado River Basin has a uniformly arid climate, the Missouri River watershed extends from the arid climate of the Great Plains in the western and northern portions of the basin to the more humid climate found in Iowa, Missouri, and the eastern portions of Kansas and Nebraska. Thus, irrigation is needed to sustain crop production in the arid portion of the basin (Montana, the Dakotas, Wyoming, Colorado, western Nebraska, and western Kansas), but not in the eastern portion of the basin where rainfall is more plentiful and uniform.

⁹⁹ This was an argument frequently heard during the 1980s and early 1990s with respect to issues associated with endangered fish species, as these issues were first pressed by the U.S. Fish and Wildlife Service starting in 1984 in the Upper Basin. Now, however, the Lower Basin finds itself in the throws of preparing a multi-species habitat conservation program, just as the Upper Division States negotiated an Upper Basin Recovery Implementation Program in 1988 and a separate endangered fish program for the San Juan River Basin which was initiated in 1992. These matters are addressed in the basin study of the Colorado River which is being prepared for the Commission.

Second, the natural, undepleted flows of the Missouri River are more than four times greater than those of the Colorado River.¹⁰⁰ For this and other reasons, navigation on the lower Missouri has been a major factor in the political history of this basin's development,¹⁰¹ unlike that of the Colorado.

On the other hand, both the lower Colorado and the lower Missouri have been prone to devastating floods. To this extent, the history of upstream-downstream conflicts in both basins share the attribute that lower basin interests in both basins have been desirous of obtaining flood control protection.

Unlike the Colorado River, the waters of the Missouri River have not been apportioned on an interstate basis (by compact, decree of the U.S. Supreme Court, or legislation), although some tributaries are the subject of Court decrees or interstate compacts.¹⁰² While the Missouri has thus avoided the

¹⁰⁰ At the mouth of the Missouri River, undepleted natural flows are estimated to average about 65 million acre-feet annually. J. THORSON, *RIVER OF PROMISE, RIVER OF PERIL: THE POLITICS OF MANAGING THE MISSOURI RIVER* 14 (1994). This contrasts with average annual virgin flows on the Colorado River of about 15 million acre-feet at Lee Ferry.

¹⁰¹ For a complete history of navigation on the Missouri River, see J. FERRELL, *SOUNDINGS: ONE HUNDRED YEARS OF THE MISSOURI RIVER NAVIGATION PROJECT* (1996).

¹⁰² The Belle Fourche, South Platte, Republican, Yellowstone, and Niobrara Rivers are the subject of interstate compacts executed between, respectively, South Dakota and Wyoming in 1943; Colorado and Nebraska in 1923; Colorado, Kansas, and Nebraska in 1942; Montana, North Dakota, and Wyoming in 1950, and Wyoming and Nebraska in 1962. The first four compacts may be found in T. WITMER, *supra* note 36, at 33, 319, 260, and 361, respectively. The Upper Niobrara River Compact may be found in the act of Congress ratifying the same. Act of August 4, 1969, Pub. L. No. 91-52, 83 Stat. 86 (1969). In addition, the Laramie River has been apportioned between Colorado and Wyoming by decree of the U.S. Supreme Court in *Wyoming v. Colorado*, *supra* note 14, and the North Platte River has been apportioned between Colorado, Nebraska, and Wyoming in *Nebraska v. Wyoming*, 325 U.S. 589 (1945) (Frankfurter, J., and Rutledge, J., dissenting). Litigation is pending at this time before the Court concerning its previous decree on the North Platte River. *Nebraska v. Wyoming*, No. 108, Original.

The United States and Canada have also entered into a treaty which governs, in general, all boundary waters between the two countries and which, in Article VI, apportions the waters of the Milk River, a small tributary which arises in Montana, flows into Canada, and then returns to Montana and thence to the Missouri River. *Boundary Waters Treaty of 1909* in T. WITMER, *supra* note 36, at 381. While the treaty did not play a role in the political agreements of the 1940s which led to the Pick-Sloan Plan, discussed *infra*, Canada's assertions that the treaty would be violated by importation of Missouri River waters into the Red River Basin in northeastern North Dakota eventually played a significant role in the demise of the Garrison Diversion Unit of the Pick-Sloan Plan.

lengthy interstate litigation that is the hallmark of the Colorado, the political history of water resources development in the Missouri River Basin has been no less complicated than that of the Colorado River Basin.

For lack of an interstate compact or court decree, there is no legal designation of upper basin and lower basin states in the Missouri River Basin. Montana, the two Dakotas, Wyoming, and Colorado have clearly seen themselves as upper basin states, with their historic interests having been in the irrigation benefits to be derived from the development of the basin's waters. Iowa and Missouri have always perceived themselves as lower basin states whose vested interests lie in flood control, navigation, and river regulation to maintain adequate depths for the water intakes which their cities have in the Missouri River. Nebraska and Kansas, since they both border the lower mainstem of the river on their eastern boundaries yet extend westward to the arid climate of the Great Plains, have had an interest both in irrigation on the one hand and flood control and navigation on the other.

The Historical Agreements ¹⁰³

Congress appropriated monies for navigation improvements on the lower Missouri as early as 1832, when a program for the removal of snags originally authorized for the Ohio and Mississippi Rivers was expanded to the Missouri.¹⁰⁴ In 1910, Congress authorized a six foot (in depth) navigation channel from the mouth of the river up to Kansas City. Extension of this channel up to Sioux City, Iowa, was authorized in 1927. Furthermore, the U.S. Army Corps of Engineers (Corps), which has jurisdiction over the nation's public works projects for navigation and flood control, was also authorized at that time to study the feasibility of a nine foot channel from the mouth of the Missouri to Kansas City.¹⁰⁵

¹⁰³ This summary is drawn from J. FERRELL, *BIG DAM ERA: A LEGISLATIVE AND INSTITUTIONAL HISTORY OF THE PICK-SLOAN MISSOURI BASIN PROGRAM* 1-73 (1993) unless noted to the contrary. Other major works which document the history of the agreements concerning federal water resources development in the Missouri River Basin are J. THORSON, *supra* note 100; M. RIDGEWAY, *THE MISSOURI BASIN'S PICK-SLOAN PLAN: A CASE STUDY IN CONGRESSIONAL POLICY DETERMINATION* (Illinois Studies in the Social Sciences, Vol. 35, 1955); and Guhin, *The Law of the Missouri*, 30 S. DAK. L. REV. 347 (1985).

¹⁰⁴ Guhin, *supra* note 103, at 351.

¹⁰⁵ J. FERRELL, *supra* note 103, at 175-76.

Meanwhile, irrigation interests had obtained some benefits from the federal reclamation program with a variety of projects constructed on various tributaries in the western portion of the basin. The first of these were authorized by the Secretary of the Interior in 1903 under the authority of the then newly enacted Reclamation Act of 1902.¹⁰⁶

Initially, upper basin irrigation interests, supported by Reclamation, and lower basin flood control and navigation interests, supported by the Corps, had gone their separate ways. However, this changed in the late 1930s, as the upper and lower basins started coming into conflict over the development and utilization of the waters of the basin. This conflict, as with the conflicts in the Colorado River Basin, eventually played out in the form of Congressional authorizing legislation which memorialized a political agreement between upstream and downstream interests.

Before recounting these conflicts and the eventual compromises between upper and lower basin interests, it is important to describe the times in which they arose. First, a prolonged and widespread drought in the 1930s and the Depression had two major negative effects on the basin: values of farm buildings and lands declined dramatically and there were significant decreases in the farm population due to out migration. Second, the advent of World War II only exacerbated the out migration, leading demographers to conclude in 1943 "that about 600,000 persons would be seeking work or government assistance during the postwar period" in the Great Plains states of Montana, Wyoming, the two Dakotas, Nebraska, and Kansas.¹⁰⁷

Third, decisions of the U.S. Supreme Court in 1940 and 1941 were very troubling to upper basin irrigation interests, just as decisions of the Court two decades earlier had brought fear to the hearts of upper basin water development interests in the Colorado River Basin.

... No new basic principles of national water law had been announced by the Court's majority opinions in ... United States v. Appalachian Electric Power Company [311 U.S. 377 (1940)] ... and ... Oklahoma v. Atkinson [313 U.S. 508 (1941)]. In these decisions, however, the Court asserted that

¹⁰⁶ Section 4 of the Act gave the Secretary the authority, "Upon the determination ... [by him] that any irrigation project is practicable," to undertake the construction of the same. Congressional authorization of individual projects was not, at the time, required. Reclamation Act of 1902, ch. 1093, § 4, 32 Stat. 389 (codified in part at 43 U.S.C.A. §§ 419, 461 (1986)).

¹⁰⁷ J. FERRELL, *supra* note 103, at 2.

whenever the constitutional powers of the federal government and those of a state conflicted, the latter must yield. "... [T]he exercise of the granted power of Congress to regulate interstate waters may be aided by appropriate and needful control of activities and agencies which, though intrastate, affect that commerce."

*Upper Missouri basin interests feared that the federal government might use this broad activist interpretation of the commerce clause to impair rights acquired under state laws. ... [W]esterners were concerned that the federal government might claim unappropriated water under the navigation powers. ...*¹⁰⁸

Fourth, the notion of comprehensive and integrated river basin development emerged as a guiding principle of federal water policy in the 1930s. While it is beyond the scope of this paper to recount the history of the "comprehensive" planning efforts undertaken by the federal water agencies nationwide in the 1930s, 40s, and 50s, it is important to understand that debates during this period about the development of the Missouri River Basin's water resources were imbued with an urgent sense of effecting national social and economic purposes and experimenting with various models of river basin "governance."¹⁰⁹

Finally, when the United States entered World War II, there were a large number of public works projects for irrigation, flood control, navigation, and hydropower generation which had been authorized. However, work on these projects was suspended, or not initiated, unless their completion would contribute to the war effort.

Given the impacts of the 1930s drought on agriculture, the out migration caused by the Depression and the war, and the need to provide jobs for returning soldiers at war's end, upper and lower basin interests alike, as well as government planners and members of Congress, began as early as 1942 to look ahead to reinstating the development of federal water projects after the war as a means of providing jobs and economic stability for the Missouri River Basin. In order to achieve this shared goal, upper and lower basin interests understood the need to cooperate politically.

¹⁰⁸ *Id.* at 21-22. Footnote omitted.

¹⁰⁹ For example, the grand experiment of the Tennessee Valley Authority (TVA) emerged from this period. Indeed, legislation to create a Missouri Valley Authority modeled after the TVA was also considered by Congress in the late 1930s and early 1940s, but never enacted. *Id.* at 73-86.

Recognizing the perceived urgency and the "joint community interest" throughout the basin, South Dakota Governor Merrill Q. Sharpe pointed out that the special interests would "have a much better opportunity to obtain development for their mutual benefit if they all acted together under the direction of some kind of steering or executive or liaison committee." The development advocates foresaw the political advantages of pooling efforts to request plan authorization and appropriations from Congress.

... Although the states had varying interests in the basin's water resources, they constituted a powerful political network.¹¹⁰

The result was the formation of the Missouri River States Committee in May of 1943 for the purpose of promoting the states' joint interests in the comprehensive and integrated development of the water resources of the basin. This much the upper and lower basin interests could agree upon. But, the devil is always in the details.

The first detail dated back to 1933, when President Roosevelt ordered the construction of the Ft. Peck Project on the Missouri River in eastern Montana. Ft. Peck Reservoir, with a current capacity of nearly 19 million acre-feet, was the first major storage reservoir built on the Missouri mainstem.

The Fort Peck project was unique. It was begun in the Depression year 1933 by authority of President ... Roosevelt rather than through the normal congressional authorization process. The project was to provide jobs in an area of high unemployment and severe economic depression. Roosevelt's authority to order the dam built was vested in the National Industrial Recovery Act of ... 1934. Title II ..., "with a view to increasing employment quickly," gave the President the power to construct public-works projects. ... [T]he President was constrained by the proviso "That no river or harbor improvements shall be carried out unless they shall have ... been adopted by the Congress or are recommended by the ... [Corps]." ... [The Corps] had recommended on 30 September 1933 that a dam be built across the Missouri at the Fort Peck project site. On 14 October, Roosevelt approved [the Fort Peck project]

... Its immediate purpose was to create jobs, but its long-term function was to assure an adequate minimum flow for navigation in the 795 miles of river channel below Sioux City. Irrigation was not among its purposes,

¹¹⁰ *Id.* at 10-11. Footnote omitted.

*despite its western location and although the area was suffering from an extended drought. ...*¹¹¹

Upper basin interests contested the assertion that Ft. Peck's primary purpose was to control river flows to the benefit of the six foot navigation channel over 1,000 miles downstream in the lower Missouri River.

*Irrigation advocates pointed out that the first three Public Works Administration allocations of money for the Fort Peck project were "for the construction of a dam at Fort Peck for water conservation and control of flow for navigation." Upper basin interests contended that the money would not have been allocated at that time had the words "for water conservation" not been included. However, the phrase was dropped when legislation [to add hydropower facilities] for the Fort Peck Dam was submitted to Congress [and enacted in 1938].*¹¹²

The second detail concerned the Corps' second and expanded plan for the comprehensive development of the basin. The Corps' first comprehensive plan for the Missouri River Basin had been embraced by Congress in 1938. It emphasized flood control features for the benefit of the lower mainstem states. However, it was not based on the construction of major upstream flood control reservoirs on the mainstem, but rather looked to levees, dikes, and relatively small flood control reservoirs on tributaries to the lower mainstem of the river.

The Corps' second plan, which came to be known as the Pick Plan after Colonel Lewis A. Pick, the Division Engineer of the Corps' Missouri River Division, took a different approach than its 1938 plan. In May of 1943, at a Congressional hearing which had been prompted by major floods on the Missouri in 1942 and 1943, and in a meeting of basinwide interests a week later,¹¹³ Colonel Pick:

... asserted that the program authorized in the prewar period [i.e., the Corps' 1938 plan] could not provide the necessary [flood control] protection. He stressed "comprehensive ultimate development," by which he meant storing behind big dams similar to Fort Peck as much water as possible Pick rejected any emphasis on traditional flood control

¹¹¹ *Id.* at 5-6.

¹¹² *Id.* at 5. Footnote omitted.

¹¹³ This was the meeting at which the Missouri River States Committee was formed.

*measures, such as cutoffs, and levees, until a comprehensive plan for dams was in place. ... And he stated boldly to the state delegates in Omaha that "we must consider other water uses in connection with flood control."*¹¹⁴

Pick's concept, when fleshed out into a basinwide plan, called for the construction of four major dams and a fifth smaller dam on the mainstem in North and South Dakota with a total storage capacity of about 35 million acre-feet, and two major dams in the Yellowstone River Basin in Montana and Wyoming with a total capacity of about 5.7 million acre-feet. Ft. Peck would have continued to be devoted to navigation and flood control. The Pick Plan, which was only a few pages long, emphasized flood control and made no explicit provision for irrigation. However, the Corps stressed that it was a plan which "... provided a 'flexible basis' for securing the necessary storage and obtaining the full multiple-purpose use of the basin's water."¹¹⁵

The third detail involved Reclamation getting into the comprehensive planning business in 1939 when it was authorized to develop plans for the conservation and use of the waters of the Missouri River Basin and to allocate the construction costs of reclamation projects to flood control and navigation to the extent that those purposes were served by a project.¹¹⁶ Under this authority, Reclamation prepared a basinwide plan which addressed both mainstem flood control needs and the expansion of irrigated agriculture. This plan came to be known as the Sloan Plan, after its primary author, William Glenn Sloan, then Assistant Regional Director of Reclamation's Billings, Montana, office.

The Sloan Plan called for two major dams and one minor one on the mainstem of the river in the Dakotas totaling about 25 million acre-feet. It provided for 83 irrigation reservoirs on various tributaries, with a total storage capacity of approximately 14.5 million acre-feet. It even dared to propose diverting and consuming water from Ft. Peck Reservoir for irrigation purposes. Total irrigated acreage under this plan came to about 4.7 million acres, about 1.4 million of which would be outside of the Missouri River Basin in northeastern North Dakota.

¹¹⁴ J. FERRELL, *supra* note 103, at 10. Footnotes omitted.

¹¹⁵ *Id.* at 16. Footnote omitted.

¹¹⁶ Reclamation Project Act of 1939, ch. 418, § 9(b), 53 Stat. 1193 (codified at 43 U.S.C.A. § 485h(b) (1986)).

The fourth detail which brought upper and lower basin interests into conflict was the desire of the lower mainstem states to deepen and widen the navigation channel in the lower mainstem of the Missouri -- from six to nine feet in depth and from 200 to 300 feet in width. In the view of the Commissioner of Reclamation, "... the requirements of a nine-foot-deep channel would 'permit no additional irrigation development at all' in the upper basin"¹¹⁷ because the capacity of such a channel would require that upstream consumption be foregone in order to leave flows in the river. For their part, the governors of the upper basin states observed "... that 'the use in perpetuity of 32,000 or 35,000 cubic feet per second [for the navigation channel] out of an average flow of 37,600' was neither the most economic nor the most beneficial use of water."¹¹⁸

Such proposals had been broached by Congress in 1939 and 1941, but not enacted. Legislation had again been introduced in 1943 to authorize expansion of the channel. This proposed legislation, in combination with the 1940 and 1941 rulings of the U.S. Supreme Court noted above, caused great consternation among the upper basin states.

Thus was the stage set for Congress to consider, in 1943-45, a series of legislative measures through which upper and lower basin water development interests would assert their respective "claims" to the benefits of federal water development programs and policies. The political agreement that was eventually forged emerged from the legislative process imbedded in two different statutes -- the Flood Control Act of 1944¹¹⁹ and the Rivers and Harbors Act of 1945.¹²⁰

Upper basin water development interests had two principal legislative goals. First, they wanted any authorization of basinwide development to include the reclamation projects which they desired. Second, they wanted Congressional protection for their contemplated upstream consumptive uses as against the physical demands and the potentially superior legal claim of the downstream federal navigation improvements undertaken pursuant to the power of the commerce clause of the U.S. Constitution -- particularly if the navigation channel was to be enlarged.

¹¹⁷ J. FERRELL, *supra* note 103, at 25.

¹¹⁸ *Id.* at 26. Footnote omitted.

¹¹⁹ Flood Control Act of 1944, ch. 665, 58 Stat. 887.

¹²⁰ Rivers and Harbors Act of 1945, ch. 19, 59 Stat. 10.

The first goal was achieved, after much maneuvering during 1943 and 1944 between the Corps and Reclamation and the interests which they represented, in the merger of the separate Pick and Sloan Plans into a single Pick-Sloan Plan in October of 1944.¹²¹ The Pick-Sloan Plan at last, and in keeping with the tenor of the times, provided for the "comprehensive ultimate development" of the basin. Not coincidentally, it also represented a comprehensive political solution to the demands of competing interests.

The Pick-Sloan Plan called for five mainstem dams, from downstream to upstream, as follows:

Gavins Point, located immediately above Yankton, South Dakota, was in the Pick Plan.

Ft. Randall was smaller than in the Corps' plan. The dam is located just above the Nebraska-South Dakota stateline.

Big Bend was in the Sloan Plan. It is located immediately upstream from Ft. Randall's upper end and backs water up to Pierre, South Dakota.

Oahe was in both the Pick and Sloan Plans. The dam is located upstream from Pierre. The reservoir extends up to Bismarck, North Dakota.

Garrison was recommended in the Pick Plan. It is located above Stanton, North Dakota, and creates a reservoir that extends almost to the Montana stateline.

These projects, along with the previously constructed Ft. Peck Reservoir, would provide system-wide storage¹²² for flood control, navigation releases, hydropower generation, and irrigation and municipal and industrial water supply needs.

On the western tributaries in the upper basin states, the Pick-Sloan Plan called for the projects for which irrigation interests had long strived. With but minor variations, the elements of the Sloan Plan were retained, although the two large reservoirs proposed in the Corps' plan for the Yellowstone River Basin were deleted. Furthermore, as a precursor to the Colorado River Storage Project Act's authorization of "participating projects" in 1956, the Pick-Sloan Plan contemplated that construction costs allocable to irrigation

¹²¹ S. DOC. NO. 247, 78th Cong. 2d Sess. (1944).

¹²² As actually constructed, the six mainstem reservoirs have a current total capacity of about 73.5 million acre-feet (MAF), as follows: Gavins Point, .5 MAF; Ft. Randall, 5.5 MAF; Big Bend, 1.9 MAF; Oahe, 23.1 MAF; Garrison, nearly 24 MAF; and Ft. Peck, about 19 MAF.

purposes which proved to be beyond the ability of irrigators to pay would be repaid by those who purchased power generated by the Pick-Sloan Plan's projects.¹²³

Water resources development in the lower Missouri had been addressed only in the Pick Plan. These features were retained. They included expansion of previously authorized flood control reservoirs on small tributaries, levees, and other flood protection works.

While the Pick and Sloan Plans were being spliced together during 1944, upper basin water development interests were also working to achieve their second goal, which they viewed as being as important as the authorization of the Pick-Sloan Plan.

... The issues involved fundamental principles of law, not merely correlation of federal agency plans [i.e., the Pick and Sloan Plans]. As expressed by a consumptive-use advocate:

"water rights and the local control and jurisdiction over these rights represent a sacred heritage which has been handed down to us by our emigrant forefathers We of the present generation in the [West] do not propose to give up these rights nor the local control and jurisdiction over them to a federal bureaucracy without a fight."

In previous litigation [i.e., the 1940 and 1940 U.S. Supreme Court cases], the federal jurisdiction had prevailed. A Montana lawyer termed the result "the creeping commerce clause."

¹²³ For the purposes of this paper, this generalization will suffice. However, the author wishes to acknowledge that there are subtle, but important, differences between the use and availability of hydropower revenues for repayment of costs allocable to irrigation, and between methods of allocating costs to irrigation purposes, under the Colorado River Storage Project Act's Upper Colorado River Basin Fund and the "ultimate development" concept of the Pick-Sloan Plan. Furthermore, as actually enacted into law, aid to irrigation from hydropower revenues is available to an irrigation project under the Pick-Sloan Plan only if it was specifically so authorized for a given project, whereas all CRSP participating projects automatically receive the benefits of hydropower's aid to irrigation. A very brief summary of how the Upper Colorado River Basin Fund works may be found in Colorado Water Conservation Board, Water Project Funding and the Basin Funds (February 20, 1981) (unpublished paper available in the Board's Denver office and in the author's personal files). The history and workings of the "ultimate development" concept under the Pick-Sloan Plan are thoroughly detailed in Guhin, *supra* note 103, at 366-383, 436-450. For the latest chapter on cost allocation issues under the Pick-Sloan Plan's ultimate development concept, see GREAT PLAINS REGION, U.S. BUREAU OF RECLAMATION, FINANCIAL MANAGEMENT OF THE PICK-SLOAN MISSOURI BASIN PROGRAM: REPORT TO THE HOUSE RESOURCES COMMITTEE, SUBCOMMITTEE ON WATER AND POWER (1997).

Clifford Stone [Director of the Colorado Water Conservation Board] explained the debate ... [thusly]:

"Where the waters of a river system are needed to maintain navigable capacities under a federally authorized system of navigation works, there results the imposition of complete centralized federal control. In such a situation the state laws are not questioned, but they are effectively rendered impotent."¹²⁴

The protection which the upper basin irrigation interests sought against "the creeping commerce clause" was statutory language which would subordinate the use of the waters of the Missouri for federal navigation projects to upstream consumptive uses for irrigation undertaken in accordance with state water law.

They had to address two different bills. One was a bill to authorize navigation and harbor projects. This bill contained the proposed authorization for the enlarged navigation channel in the lower mainstem. The second bill would authorize flood control projects. It was the legislative vehicle by which the Pick Plan was first taken up, independent of the Sloan Plan. Both bills were proceeding through Congress during 1944, although in different houses and different committees of a house at any given time.

The language which the upper basin states eventually succeeded in having enacted is known as the O'Mahoney-Milliken Amendment.¹²⁵ Senator Joseph C. O'Mahoney was from Wyoming and Senator Eugene Donald Milliken was from Colorado. As is typical of such legislative provisions, it underwent several revisions over the course of 1944 before being adopted.

The Pick-Sloan Plan and the agreed upon protective language were incorporated into the Flood Control Act of 1944. The authorizing language for the Pick-Sloan Plan¹²⁶ merely provides that:

¹²⁴ J. FERRELL, *supra* note 103, at 38. Footnotes omitted.

¹²⁵ For an extensive legal analysis of the effect of the amendment, perhaps colored some by an upper basin point of view, see Guhin, *supra* note 103, at 383-410.

¹²⁶ At the time it was authorized, the features of the Pick-Sloan Plan were typically referred to simply as the Missouri River Basin development program. The authorizing legislation itself did not give a formal name to the program. In 1970, Congress formally designated it as the Pick-Sloan Missouri Basin Program. Act of Dec. 24, 1970, Pub. L. No. 91-576, 84 Stat. 1541.

*The general comprehensive plans set forth in ... [the Pick-Sloan Plan] are hereby authorized and shall be prosecuted by the War Department [i.e., the Corps] and the Department of the Interior [i.e., Reclamation] as speedily as may be consistent with budgetary requirements.*¹²⁷

The O'Mahoney-Milliken Amendment provides that:

*The use for navigation, in connection with the operation and maintenance of such works herein authorized for construction, of water arising in States lying wholly or partly west of the ninety-eighth meridian shall be only such use as does not conflict with any beneficial consumptive use, present or future, in States lying wholly or partly west of the ninety-eight meridian, of such waters for domestic, municipal, stock water, irrigation, mining, or industrial purposes.*¹²⁸

For a variety of reasons, the separate rivers and harbors bill failed to pass during 1944 and had to be taken up when the new Congress reconvened in 1945. It quickly passed, with the nine foot navigation channel authorized from Sioux City to the mouth¹²⁹ and the O'Mahoney-Milliken Amendment also included in it.¹³⁰

The Actual Results

As in the Colorado River Basin, the lower mainstem states in the Missouri River Basin have essentially received what they bargained for. The five additional mainstem reservoirs were constructed within just 20 years of authorization, yielding regulation of flows for flood control, navigation, and maintenance of river depths beneficial to municipal water supply intakes on the lower mainstem. In addition, the nine foot navigation channel sought by the lower basin states is in place. Finally, most of the levee improvements and other river works authorized for the lower mainstem have been constructed.

¹²⁷ Flood Control Act of 1944, ch. 665 , § 9(a), 58 Stat. 891.

¹²⁸ Flood Control Act of 1944, ch. 665, § 1(b), 58 Stat. 887.

¹²⁹ Rivers and Harbors Act of 1945, ch. 19, § 2, 59 Stat. 19.

¹³⁰ Rivers and Harbors Act of 1945, ch. 19, § 1(b), 59 Stat. 11.

With respect to navigation, the storage and river regulation afforded by the mainstem reservoirs has enabled the Corps to establish a navigation season that generally has been seven or eight months long.¹³¹ However, commercial shipments on the waterway, measured both in tons and ton-miles, have never achieved the volumes originally projected. Furthermore, shipments peaked in the late 1970s¹³² and have generally declined since then due to a variety of factors.

From an upper basin perspective, the Pick-Sloan Plan has not been a success. The Dakotas and Montana have seen over 1.65 million acres of land inundated by the six mainstem reservoirs,¹³³ much of it fertile bottomlands, yet these reservoirs provide benefits mostly to the lower basin. Furthermore, the upper basin states have received less than ten percent of the promised full service irrigation acreage. The other states have not fared much better (see Table 1). Furthermore, Congress in effect deauthorized all irrigation projects under the Pick-Sloan Plan not under construction in 1964 when it

Table 1.—Irrigation development¹³⁴
(full service acres)

State	Planned	Developed	Percent
Colorado	101,280	0	0
Kansas	193,335	65,798	34.0
Nebraska	989,445	252,930	25.5
Montana	967,130	45,582	4.7
North Dakota	1,266,440	10,344	.8
South Dakota	961,210	71,929	7.5
Wyoming	281,560	71,773	25.5
Totals	4,760,400	518,356	10.8

required that monies authorized by the Act of August 14, 1964, for the prosecution of the Pick-Sloan Plan could not be used for any unit of the plan,

¹³¹ J. FERRELL, *supra* note 103, at 143, citing data from 1954 through 1992.

¹³² *Id.*

¹³³ Personal communication from George St. George, Great Plains Region, U.S. Bureau of Reclamation, to the author (February 28, 1997).

¹³⁴ George St. George, *supra* note 133.

even though included in the original 1944 authorization, unless such unit was thereafter reauthorized by an act of Congress.¹³⁵

It is also important to note that about 350,000 acres of the lands which were inundated on the mainstem were located on Indian reservations, included prime agricultural lands, and required the relocation of more than 900 Indian families.¹³⁶ Yet, in the judgment of one commentator, the benefits received by the Indian Tribes from the Pick-Sloan Plan "have been nominal."¹³⁷

While the hydropower plant capacity actually developed by the Corps and Reclamation is 220 percent of what was planned -- 2,535,000 kilowatts as compared to 1,153,267 kilowatts¹³⁸ -- upper basin irrigation interests have not received nearly as great a benefit as they sought in the form of cheap hydropower for the pumping of project water or hydropower revenues assisting with the repayment of irrigation projects simply because so few of the originally contemplated irrigation projects have been built.¹³⁹ On the other hand, this source of relatively inexpensive hydroelectric power has, in general, benefitted other customers (rural electric cooperatives and municipal utilities) in the upper basin states, as well as in the lower basin states.¹⁴⁰

Although they have received far less from the Pick-Sloan Plan than originally contemplated, the upper basin states have been able to make some

¹³⁵ Act of August 14, 1964, Pub. L. No. 88-442, 78 Stat. 446.

¹³⁶ J. THORSON, *supra* note 100, at 83; and GREAT PLAINS REGION, U.S. BUREAU OF RECLAMATION, *supra* note 123, at 17.

¹³⁷ J. THORSON, *supra* note 100, at 83. Thorson summarizes impacts on the Tribes at 80-83.

¹³⁸ George St. George, *supra* note 133.

¹³⁹ For irrigation projects which have been built, the aid to irrigation from hydropower had, as of 1987, amounted to nearly \$307 million. J. THORSON, *supra* note 100, at 79.

¹⁴⁰ Power generated by the Pick-Sloan facilities is marketed by the Western Area Power Administration (Western). As measured by Western's firm energy sales in federal fiscal years 1995 and 1996, the biggest users of Pick-Sloan hydroelectric power were customers in Colorado, Iowa, Minnesota, Nebraska, North Dakota, and South Dakota, where sales by state exceeded 1 billion Kwh each (in Colorado's case this includes some power from non-Pick-Sloan facilities, such as Reclamation's Colorado-Big Thompson Project, which Western markets as well). Missouri was the only state not having customers to whom firm energy is delivered, but there are utilities in Missouri which purchase non-firm energy from Western. WESTERN AREA POWER ADMINISTRATION, APPENDIX TO THE 1996 ANNUAL REPORT 93, 126 (1997).

adjustments to their benefit. First, North and South Dakota have sought in recent years to benefit from the water supplies developed by the mainstem reservoirs in ways not even contemplated 50 years ago. This has come about through the authorization of new federal projects for rural domestic water supply purposes since 1980, which authorizations were sought and supported by the states when they realized that additional irrigation projects were unlikely to be forthcoming. As a result of these authorizations, the WEB Project¹⁴¹ in South Dakota has been completed at a cost of \$113.5 million¹⁴² and three other projects are under construction. Table 2 summarizes how much federal money has been expended on these three projects to date.

Table 2.—Rural water development projects¹⁴³

Project	Indexed authorization	Approximate amount spent (9/30/96)
Garrison Diversion ¹⁴⁴	¹⁴⁵ \$222,195,000	\$143,319,000

¹⁴¹ The WEB Rural Water Development Project, South Dakota, was initially authorized by section 9 of the Rural Development Policy Act of 1980, Pub. L. No. 96-355, § 9, 94 Stat. 1175. The act authorized an initial appropriation to the Secretary of the Interior of \$1.9 million, with a further authorization of \$68.1 million if, and only if, the Oahe Unit of the Pick-Sloan Plan, in South Dakota, was deauthorized by September 30, 1981. The authorization of the \$68.1 million expired when such deauthorizing legislation was not enacted. However, 1982 legislation did deauthorized the Oahe Unit and reauthorized the WEB Project. Act of Sept. 30, 1982, Pub. L. No. 97-273, 96 Stat. 1181.

¹⁴² Personal communication from Mike Whittington, Great Plains Region, U.S. Bureau of Reclamation, to the author (March 12, 1997).

¹⁴³ Dollar figures in this table were provided by the Bureau of Reclamation. *Id.*, and telephone interview with Roger Schlosser, Great Plains Region, U.S. Bureau of Reclamation (May 7, 1997).

¹⁴⁴ Authorization to construct municipal, rural, and industrial water systems as features of the Garrison Diversion Unit "to serve areas throughout" North Dakota and "to meet the economic, public health and environmental needs of the Fort Berthold, Standing Rock, and Fort Totten Indian Reservations" was provided by section 5 of the Garrison Diversion Unit Reformulation Act of 1986, Pub. L. No. 99-294 § 5, 100 Stat. 422.

¹⁴⁵ The original authorization for the North Dakota system was \$200 million, while that for the systems for the three Indian reservations was \$20 million. Garrison Diversion Unit Reformulation Act of 1986, Pub. L. No. 99-294, § 8, 100 Stat. 424. Indexing was subsequently provided for the authorizations for the Indian reservations, but not the North Dakota system. Reclamation Projects Authorization and Adjustment Act of 1992, Pub. L. No. 102-575 § 1701, 106 Stat. 4669.

Mid Dakota ¹⁴⁶	\$132,965,000	\$23,739,000
Mni Wiconi ¹⁴⁷	\$278,976,000	\$53,793,000

Perhaps more importantly, flatwater recreation on the six mainstem reservoirs, while treated as an incidental purpose at the time the Pick-Sloan Plan was authorized, has proved to be substantial.

*... [I]n 1992, public recreational use at the main stem reservoirs alone amounted to 49.5 million visitor hours. In some areas of upper basin states, recreation has become perhaps the primary benefit local residents have obtained from the Pick-Sloan Plan*¹⁴⁸

In turn, the upper basin states have come to have a strong interest in overall system operations, as flood control targets (*i.e.*, the amount of space to be left vacant in order to store incoming flood flows) and drawdowns of the mainstem reservoirs in order to maintain downstream navigation can have adverse impacts on this burgeoning, upper basin economic activity. Furthermore, as is typical of water management operations in this day and age, there are many environmental issues associated with the use and operation of existing project facilities and the water which they development.¹⁴⁹

Indeed, the distribution between upper and lower basins, and between economic and environmental interests, of benefits derived from how the mainstem system of reservoirs is, or could be, operated has become the driving issue of the past 10 to 15 years between the basins, particularly with the occurrence of a six year drought starting in 1987 that depleted mainstem storage to a record low in 1991. Mainstem reservoir operation issues have spawned substantial litigation, a still on-going review by the Corps of

¹⁴⁶ The Secretary of the Interior was authorized to make grants and loans to the Mid-Dakota Rural Water System, Inc., a non-profit corporation, for the construction of its system by section 1903 of the Mid-Dakota Rural Water System Act of 1992, Pub. L. No. 102-575, Title XIX, § 1903, 106 Stat. 4674.

¹⁴⁷ This project was authorized by the Mni Wiconi Project Act of 1988, Pub. L. No. 100-516, 102 Stat. 2566. Section 10(a) of this act originally authorized the appropriation of \$87.5 million for the construction of the project. This amount was increased to \$263,241,000 (prior to indexing) by section 813 of the Mni Wiconi Act Amendments of 1994, Pub. L. No. 103-434, Title VIII, § 813, 108 Stat. 4545.

¹⁴⁸ J. THORSON, *supra* note 100, at 77. Footnote omitted.

¹⁴⁹ See, e.g., MISSOURI RIVER DIVISION, U.S. ARMY CORPS OF ENGINEERS, MISSOURI RIVER MASTER WATER CONTROL MANUAL REVIEW AND UPDATE STUDY: DRAFT ENVIRONMENTAL IMPACT STATEMENT EXECUTIVE SUMMARY (July, 1994).

Engineers of its policies and operating criteria for the management of the mainstem reservoirs,¹⁵⁰ the formation of new interstate organizations to address the emerging issues, and much controversy.

While the particulars differ and the details of these recent events are beyond the scope of this paper, the parallels between current water management issues in the Missouri and Colorado River Basins are many. Although the Western Water Policy Review Advisory Commission will not have the benefit of a basin study for the Missouri River, these contemporary issues are documented in other available literature. This author invites the Commission's attention to these.¹⁵¹ In addition, the basin study of the North Platte River which is being prepared for the Commission will, in many ways, be illustrative of the same types of issues.

Suffice it to say for the purposes of this paper that, the historic deals having not materialized as bargained for, the search by upper basin interests for ways to garner a "fair share" of the benefits to be derived from federal water projects goes on unabated—in both basins.

A Deal is Not a Deal

Introduction

At least when measured in terms of physical facilities --e.g., numbers of dams, acre-feet of reservoir capacity for water conservation or flood control, miles of canals, acres brought under irrigation, and miles of navigation channel -- the two preceding sections demonstrate that upper basin water development interests have in fact received the benefit of considerably less federal water project development than they had bargained for, while the lower basins have generally had their ends of the historical deals fulfilled. In this section, the general factors which forestalled upper basin development will be surveyed. From these will be extrapolated certain basic realities about agreements forged in the political arena, as these realities will inform the conclusions reached and recommendations made in the final section of this paper.

¹⁵⁰ *Id.* Due to the controversy which the study generated, the Corps' review of its Master Water Control Manual is still underway.

¹⁵¹ While only current through about 1993-1994, the developments of the past 10-15 years are set out at some length in J. FERRELL, *supra* note 103, at 123-71 and in J. THORSON, *supra* note 100, at 85-92, 99-113, 163-81. The Bureau of Reclamation and the Corps of Engineers can undoubtedly provide the Commission with the current status of all matters.

What Went "Wrong?"

The legislation memorializing the political agreements which are the subject of this paper only authorized the construction of certain projects. Subsequent acts of Congress were required to appropriate monies with which to actually construct any given project.¹⁵²

However, in the context presented here, it is axiomatic that one Congress cannot bind a future Congress. Rather, future Congresses are free to appropriate or not appropriate funding for authorized projects and programs as they see fit -- and for that matter to repeal, directly amend, or indirectly supplant previously enacted authorizing legislation.¹⁵³ Thus, authorizing legislation was but the first step in the process of effectuating the political agreements reached in the Colorado and Missouri River Basins.

As it has turned out, defending original authorizing acts from adverse amendments or outright repeal, and gaining appropriations for authorized projects, came no more easily for upper basin interests than the original project authorizations themselves. While the particulars of what went "wrong" vary between the two basins, and from project to project, certain generalizations can be culled from the particulars:

1. More projects were authorized than could reasonably expect to receive appropriations.
2. Obtaining the necessary appropriations required sustained political support long after authorizing legislation had been signed into law.
3. The federal dollars available for the construction of federal water development projects became increasingly limited over time.

¹⁵² This arrangement flows from the rules of the House of Representatives and the Senate. In general, the rules of the two chambers prohibit appropriations for projects and programs not previously authorized by statute. The effect of these rules is to subject an appropriations bill to a parliamentary objection (a "point of order") which, if sustained by the chair of the committee or chamber considering the bill, results in the offending appropriation being deleted from the bill. While these rules, since they are only internal procedures, can be explicitly waived or simply ignored by either House, the long-standing practice has been to obtain authorization of a project before seeking appropriations for it. See I UNITED STATES GENERAL ACCOUNTING OFFICE, PRINCIPLES OF FEDERAL APPROPRIATIONS LAW 1-17 - 1-18 (2d ed. 1991).

¹⁵³ See, e.g., *Reichelderfer v. Quinn*, 287 U.S. 315, 318 (1932) (reversed). See also 73 Am. Jur. 2d, Statutes §§ 34, 378.

4. New requirements for non-federal "up front" cost sharing were imposed.
5. In the face of delays caused by the Congressional appropriations process and other factors, changing economic conditions rendered nearly all projects not under construction by the 1970s economically unjustified.
6. As detailed planning was undertaken after a project had been authorized, engineering problems were sometimes discovered which rendered some projects technically infeasible, or the solution to which added so greatly to project costs (construction and/or operation and maintenance) as to make a project economically unjustified.
7. Environmental concerns mounted and the influence and power of the environmental movement expanded at the national level.

Each of these factors is briefly reviewed below.

1. More Projects Were Authorized Than Could be Funded

Federal statutes are replete with projects and programs encompassing every aspect of government which have been authorized by Congress, but never funded or only partially funded. This stems from the fact that the Congressional authorization process and the appropriations process are separate processes. With no limit on the dollar amounts which can be authorized for future appropriations, many more projects and programs have been, and continue to be, authorized than can ever be funded.

President Roosevelt's statement upon signing the legislation which authorized the Missouri Basin's Pick-Sloan Plan presaged events to come in this regard:

Roosevelt addressed the issue of authorization-appropriation. The tenuous nature of dam-building legislation at the authorization stage was evidenced in the President's remarks. He stated that authorized projects listed in the bill would "augment the backlog of public works available for prompt initiation, if necessary, in the postwar period." He intended to submit estimates of appropriations ... only for those projects having "important and direct value to the winning of the war."¹⁵⁴

¹⁵⁴ J. FERRELL, *supra* note 103, at 66. Footnotes omitted.

Moreover, times have not changed, as evidenced by President Clinton's statement upon the signing of the Water Resources Development Act of 1996,¹⁵⁵ an omnibus authorizations act for Corps of Engineers' flood control, navigation, and other public works projects:

*I am concerned about the potential overall Federal cost of the bill. Under existing budget constraints, many projects and initiatives authorized by this bill cannot be funded within a reasonable timeframe. Thus, such authorizations may raise unrealistic expectations for non-Federal sponsors who expect timely project initiation and completion. ...*¹⁵⁶

In short, there has been (and continues to be) a tendency for Congress, particularly in the context of reaching political agreements which accommodate competing interests, to authorize many more projects than could ever be funded. This was an easy step for lower basin legislators to take via-a-vis the authorization of upper basin projects, as they knew that they could live to fight another day, or stand by in neutrality, during the annual appropriations processes which would ensue. Furthermore, this was even a politically expedient way for upper basin Congresspersons and Senators to proceed, at least in some instances, for it gave the appearance that they had brought something home to their constituents, even if they themselves never expected that the necessary follow-on appropriations could be obtained, or that they would even still be in office and called upon by their constituents to obtain appropriations with which to construct a project.

In the context of the historical deals discussed in this paper, it was as if a six lane freeway (the deals memorialized in Congressional authorizing legislation) suddenly narrowed to a two lane highway (the appropriation process). Traffic necessarily backed up and some vehicles (the upper basins' projects) ran out of gas (due to the other six factors discussed below) while waiting in line. These vehicles are now parked on the shoulder of the road getting ever more rusty, if not in fact completely abandoned.

2. Sustained Support for Appropriations

¹⁵⁵ Water Resources Development Act of 1996, Pub. L. No. 104-303, 110 Stat. 3658.

¹⁵⁶ Statement by President William J. Clinton Upon Signing S. 640, 32 WEEKLY COMP. PRES. DOC. 2062 (October 21, 1996).

Obtaining appropriations to initiate and complete construction of a newly authorized federal water project required long periods of time. There were several reasons this.

First, as noted above, many more projects were authorized than could ever be funded. This meant that many projects would be "backed up in line" and would inevitably be delayed in obtaining appropriations, if they were ever successful, as projects competed for scarce dollars.

Second, projects were invariably authorized based only on feasibility level planning, or less (as discussed in item 6 below). Consequently, construction could not be initiated unless and until final plans for a project were prepared, complete with engineering designs and specifications. Thus, the first task facing project proponents was to obtain appropriations just to complete the necessary planning. Delays of several years in this regard were common, and then it would take several more years to complete the planning for a project after appropriations began to flow to it.

Third, the tradition of the Appropriation Committees in both houses of Congress has been to appropriate monies for each project on an annual basis, rather than making a single appropriation which would cover the entire cost of a project and remain available for expenditure without further appropriation. Furthermore, in an effort to spread the available dollars among as many projects as possible, monies for a given project were very often appropriated at less than the optimal rate, thus dragging construction out over more years than would have been required based solely on construction scheduling requirements. The impacts of inflation compounded problems, as construction costs escalated that much more when construction was funded at less than optimal rates.

Finally, Senators and Congresspersons could make any deals they wanted, and a President could even sign those deals into law, but the same or future Presidents had no legal obligation to request, and often times did not request, funding from Congress either to complete planning or initiate construction of the federal water projects which had been embraced in a political deal. Absent such a request, project proponents had to seek a "write-in" appropriation above and beyond the President's budget request, a process which nearly always resulted in delays in receiving the initial appropriations with which to get a project underway.

In the face of a process that tended to be long and drawn out due to the above-mentioned factors, obtaining appropriations to initiate and complete construction of a federal water resources development project required the utmost in political "staying" power and perseverance. Project proponents

found themselves having to sustain political support for a project over many years, even as the membership of their Congressional delegations changed from time to time, new Administrations were elected, and governors came and went.

The change of even a single elected official could make a big difference in some cases. A classic example in this regard was the defeat of Congressman Wayne Aspinall of Colorado -- who had chaired the Interior and Insular Affairs Committee in the House of Representatives when the CAP legislation was moving through Congress in the mid-1960s -- shortly after the enactment of that legislation. There is no doubt that Colorado's Five Fingers projects were authorized as part of the CAP bill in large part because of Congressman Aspinall's position of power.¹⁵⁷ Had he remained in office, he could have held substantial sway over the appropriations process to Colorado's benefit, even though appropriations were handled by a different committee. However, with Aspinall's defeat, the mantle of power not only shifted away from Colorado, but eventually to Congressman Morris Udall of Arizona when he succeeded to the chairmanship of the committee. From this vantage point, he guarded the interests of the CAP for many years.

Whether by skill, blind luck, or both, Lower basin interests were generally more successful than their upper basin counterparts in generating the sustained political support which was required to move a project through ten to 15, or even 20 to 25, years of the annual appropriations process. For example, the unity of the Arizona delegation in obtaining funding for the CAP over a period of nearly 25 years has been unparalleled.

3. Federal Budget Constraints

The dollars available for construction of federal water resources projects have always been finite. They became even more finite starting in the 1970s. Several factors were at play.

First, the demands placed upon the total monies available for discretionary spending programs greatly increased and the competition between programs became very intense, the federal budget having last been balanced in the late 1960s. At the same time, western water project development declined in political importance in the overall scheme of things. Consequently, federal water development programs received an increasingly smaller portion of the total dollars available for discretionary spending programs.

¹⁵⁷ See H. INGRAM, *supra* note 3, at 66-83.

Second, as more and more projects were completed, more and more money had to be devoted to operation and maintenance of those projects. In the face of overall budget pressures, construction dollars began to give way to the need for operating and maintaining that which had already been constructed. For example, while Reclamation's operation and maintenance budget has never exceeded its construction budget, its appropriations for operation and maintenance, which had never exceeded \$100 million until about 1980, grew from \$127 million in 1986 to \$284 million in 1995, while its construction budget declined from an all time high of \$774 million in 1985 to \$433 million in 1995.

Third, upper basin interests found themselves having to support the use of Reclamation's limited construction budget for programs and activities that diverted scarce dollars away from getting authorized projects underway, but without which future development might be jeopardized. The principal example in this regard occurred in the Colorado River Basin, where upper basin interests had to contend with growing concerns in the 1960s and early 70s about the issue of salinity in the Colorado River. The problem had both an international and a domestic dimension.

The international problem arose because of Mexico's objections to the quality of water being delivered to it at the international boundary. Salinity concentrations had increased sharply in 1961 due to the introduction of highly saline irrigation drain water from the drainage system constructed by Reclamation for Arizona's Wellton-Mohawk Irrigation District. The drainage water was returned to the river below the last point of diversion in the United States, but above Mexico's point of diversion at Morelos Dam. The domestic problem arose because of concerns on the part of the Lower Division States that natural and man-made sources of salt loading to the river, coupled with steadily increasing depletions by all states, would cause salinity concentrations in the lower mainstem of the Colorado River to rise to unacceptable levels.

To make a long story short,¹⁵⁸ the solution to the international problem came in the form of a 1973 agreement between Mexico and the United States as to the quality of the water to be delivered to Mexico,¹⁵⁹ and yet another political deal between the basin states calling for the federally financed construction

¹⁵⁸ A concise history of why the salinity issue developed and how it was dealt with, both internationally and domestically, may be found in Friedkin, *The International Problem with Mexico Over the Salinity of the Lower Colorado River*, in *WATER AND THE AMERICAN WEST: ESSAYS IN HONOR OF RAPHAEL J. MOSES* 31 (D. Getches ed. 1988).

¹⁵⁹ Agreement on Colorado River Salinity Confirming Minute No. 242 of the International Boundary and Water Commission, 24 U.S.T. 1968 (Aug. 30, 1973).

of a desalting plant to treat the drainage return flows from the Wellton-Mohawk District so that these flows could be returned to the river and delivered to Mexico, rather than being wasted to the ocean to the detriment of the water supply available to the basin states. On the domestic front, the states and the U.S. Environmental Protection Agency agreed to certain numeric criteria for salinity in the lower mainstem of the Colorado River¹⁶⁰ and a program for the federally financed construction of salinity control projects which would reduce salt loading to the Colorado River System. Authorization of what came to be known as the Yuma Desalting Plant and the Colorado River Basin Salinity Control Program was obtained from Congress in 1974.¹⁶¹

While construction of the Yuma Desalting Plant ran into the hundreds of millions of dollars, the Upper Division States found themselves supporting its construction out of Reclamation's limited budget for fear that not treating the irrigation drainage from the Wellton-Mohawk District (which in the 1970s was running roughly 150,000 acre-feet per year) would adversely affect the water supplies available to those states for future development. Similarly, the Upper Division States dutifully, if not enthusiastically, supported appropriations for salinity control projects (which have totaled over \$300 million since the inception of the program), since failure to meet the established numeric criteria for salinity concentrations in the lower mainstem of the river would jeopardize their ability (and that of the Lower Division States as well) to fully utilize their compact entitlements. However, every dollar devoted to the desalting plant and to salinity control projects was a dollar less for the construction of the CRSP participating projects for which the Upper Division States had fought so hard.

Another example of how upper basin interests found themselves having to support the use of Reclamation's limited budget for other than the construction of authorized projects would be the demand for fish and wildlife

¹⁶⁰ The numeric criteria, and the history of their development, are set forth in COLORADO RIVER BASIN SALINITY CONTROL FORUM, PROPOSED WATER QUALITY STANDARDS FOR SALINITY INCLUDING NUMERIC CRITERIA AND PLAN OF IMPLEMENTATION FOR SALINITY CONTROL: COLORADO RIVER BASIN 1-10, 53-62 (June, 1975).

¹⁶¹ Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974) (codified as amended in part at 43 U.S.C.A. §§ 1571-1599 (1996 & Supp. 1997)). Title I of the act authorized, among other things, the desalting plant, while Title II authorized the construction of certain salinity control projects for reducing salt loading to the river as the initial features of the Colorado River Basin Salinity Control Program. For a summary of legislative changes to the Salinity Control Program since 1974, see BUREAU OF RECLAMATION, U.S. DEPARTMENT OF THE INTERIOR, COLORADO RIVER BASIN SALINITY CONTROL PROGRAM: REPORT TO CONGRESS ON THE BUREAU OF RECLAMATION BASINWIDE PROGRAM 2-6 (Feb., 1996).

mitigation. As environmental awareness grew in the 1970s and 80s, so did the pressure on Reclamation to accelerate the completion of authorized fish and wildlife mitigation features and recreational facilities at already completed projects or projects under construction. The dollars for such projects, features, and facilities came out of the finite construction budget available to Reclamation and necessarily made it more difficult to find dollars for "new starts" on water supply projects. On the other hand, it must be acknowledged that recreational facilities at Reclamation's projects have yielded major benefits to the upper basin states both in the Colorado and Missouri River Basins.¹⁶²

4. Non-Federal, Up-Front Cost Sharing

Prior to the Administration of President Carter, it was uniformly accepted that Congress financed 100 percent of the construction costs of a federal water development project (except for the requirement, discussed earlier in this paper, that non-federal interests obtain all lands, easements, and rights-of-way required for flood control projects). However, reforms proposed early in President Carter's tenure called for non-federal entities to provide ten percent of the construction cost of a project at the time of construction (*i.e.*, "up front"). This proposal eventually evolved into the cost sharing requirements imposed by Congress on Corps programs in 1986¹⁶³ and on individual Reclamation projects by Congress and the Reagan and Bush Administrations on a case-by-case basis.¹⁶⁴

Non-federal, up-front cost sharing was not contemplated at the time the upper and lower basin interests reached their past agreements. The imposition of this requirement in recent years has given various upper basin

¹⁶² In 1992, public recreation on the six mainstem reservoirs on the Missouri River came to 49.5 million visitor hours. *Supra* note 148. In 1995, there were more than 9 million recreation visits to reclamation projects in the Upper Colorado River Basin, over half of which occurred at Lake Powell (formed by Glen Canyon Dam) and Flaming Gorge Dam and Reservoir in Utah and Wyoming. UPPER COLORADO RIVER COMMISSION, *supra* note 33, at 51.

¹⁶³ Water Resources Development Act of 1986, Pub. L. No. 99-662, Title I, 100 Stat. 4082. *See also* H. INGRAM, *supra* note 3, at 15-16.

¹⁶⁴ Reclamation projects which have been subjected to new cost sharing requirements include, for example, the Central Arizona Project, the Animas-La Plata Project, the Bonneville Unit of the Central Utah Project, and the North Dakota municipal, rural, and industrial water system authorized by the Garrison Diversion Unit Reformulation Act of 1986. *See, e.g.*, Central Utah Project Completion Act, Pub. L. No. 102-575, § 204, 106 Stat. 4614 (1992); Garrison Diversion Unit Reformulation Act of 1986, Pub. L. No. 99-294, § 5, 100 Stat. 422.

states pause.¹⁶⁵ They, like the federal government, had only so much money to devote to water project development -- and it was a lot less than the total cost of all of the projects they had hoped for.

5. Project Economics

Under procedures that have generally been in place since the late 1930s, federal agencies were not to seek or support the authorization of water projects unless they had been found to be "economically justified." This meant that a project had to have a benefit-cost ratio of 1:1 or greater.¹⁶⁶ If the benefit-cost ratio was less than 1:1, a project was deemed to be "economically unjustified."

While projects may have been found to be economically justified at the time they were authorized, re-evaluations over time led to different conclusions. Thus, most, if not all, participating projects in the CRSP, except for the Animas-La Plata Project,¹⁶⁷ and nearly every irrigation project in the Pick-Sloan Plan (see Appendix A) which are not now completed or under construction were eventually determined to be economically unjustified. There were at least three interrelated reasons for this.

First, the mere passage of time was working against upper basin interests. During the 1960s, 70s, and 80s, construction costs escalated at a more rapid

¹⁶⁵ Arizona, a lower basin state, also confronted this problem in the case of the CAP. To the author's knowledge, this is the only significant example of a lower basin state in either the Missouri or Colorado River Basins having to deal with this change in the "rules of the game" as applied to the historical deals discussed in this paper.

¹⁶⁶ A benefit-cost ratio compares the benefits of a project, to whomsoever they may accrue, to the costs of the project, to whomsoever they may accrue, with the future streams of anticipated benefits and costs both being discounted back to present values. Thus, if the ratio of discounted benefits to discounted costs is less than 1:1, it indicates that the benefits which it is projected will be received from a project are less than the costs which it is projected will be incurred to construct, operate, and maintain the project. To the extent that all benefits and costs of a project can be expressed in monetary terms, it obviously makes no sense to pursue a project which will cost more than the benefits which it returns.

¹⁶⁷ See, e.g., U.S. BUREAU OF RECLAMATION, FRUITLAND-MESA PROJECT, COLORADO: DEFINITE PLAN REPORT 69-70 (1977); U.S. BUREAU OF RECLAMATION, CONCLUDING REPORT ON THE WEST DIVIDE PROJECT, COLORADO 86 (1981); and U.S. BUREAU OF RECLAMATION, SAVERY-POT HOOK PROJECT, COLORADO AND WYOMING: DEFINITE PLAN REPORT 74 (1977). The Animas-La Plata Project has a benefit-cost ratio of 1.41 to 1 if the authorized discount rate (i.e., the discount rate in effect in 1968) is used. If the current discount rate and contemporary procedures for doing economic analyses are applied, the benefit-cost ratio drops to .36 to 1. U.S. BUREAU OF RECLAMATION, ANIMAS-LA PLATA PROJECT, COLORADO - NEW MEXICO: ECONOMIC AND FINANCIAL ANALYSES UPDATE (June, 1995) [hereinafter ANIMAS-LA PLATA PROJECT].

pace than did the benefits associated with irrigated agriculture in the upper basin states in question. Thus, as projects languished in line waiting to receive a "new start" appropriation with which to initiate construction, or were delayed while they underwent re-evaluation on environmental grounds in the 1970s and 80s (see item 7 below), the economic times passed them by.

Second, the procedures by which economic evaluations were performed were revised in the 1960s and 1970s:

... Rules for evaluating federal water projects became increasingly stringent under the Water Resources Planning Act [Pub. L. No. 89-80, 79 Stat. 244 (1965) (codified as amended at 42 U.S.C. §§ 1962 et seq.)] and as a result of criticisms of environmentalists and economists. Principles and standards of evaluation evolved to include not just national economic efficiency [i.e., the benefit-cost criterion] but also other "accounts," including environmental quality, social well-being, and regional economic development. In the Carter years evaluation criteria were given the force of regulations and environmental quality was elevated to equal importance with national economic efficiency.¹⁶⁸

Third, an economic evaluation is very sensitive to the discount rate which is used, this being the percentage rate which is applied to estimated future streams of costs and benefits to discount them back to the present. All other things being equal, the larger the discount rate the smaller the benefit-cost ratio for a water resources project becomes.¹⁶⁹ Over time, the discount rate to be used in economic analyses, which rate is established by the Office of Budget and Management, has steadily increased -- and the benefit-cost ratios for previously authorized projects have gone down accordingly.

While project authorizing legislation typically calls for the "official" economic analysis of a project to be performed and reported to Congress using the discount rate in effect at the time a project was authorized, all Administrations, regardless of which political party occupied the White House, have in fact applied the then current discount rate when deciding whether to seek and support appropriations for a project. Thus, whatever "official" benefit-cost ratio may have been reported to Congress, the President has nearly always, if not always, refused to request funding to

¹⁶⁸ H. INGRAM, *supra* note 3, at 14.

¹⁶⁹ This is because project benefits, which extend far out into the future, are more heavily discounted when expressed in present value terms than are project costs, the bulk of which are incurred over just a few years (during the construction of a project) early in the period of time over which discounting is computed.

start construction of a project if its benefit-cost ratio was not equal to or greater than 1:1 as computed using the then current discount rate.

When increasingly higher discount rates were coupled with project costs which escalated faster than benefits, and with the application of the new evaluation procedures developed in the 1960s and 70s, the resulting reductions in benefit-cost ratios were dramatic.¹⁷⁰ As noted above, nearly all of the upper basin projects which have not been built were determined, under the evolving federal "rules of the game," to be economically unjustified. This determination, when coupled with budget constraints and environmental issues, spelled the death knell of many a project, even though it was not binding on Congress.

6. Incomplete Project Planning

As noted above, projects were invariably authorized based only on plans completed at a feasibility level of detail, or less. Consequently, more detailed planning always had to be undertaken for a project after it had been authorized. As planning progressed, it was not unusual to encounter engineering problems that had not been anticipated (e.g., foundation problems for a dam, instability on a slope where a canal was to be constructed, drainage problems for lands to be brought under irrigation, etc.). In extreme cases, these problems might be so severe as to render a project technically infeasible. Even if an engineering solution could be had, it might add so greatly to project costs as to make a project economically unjustified.

While previously unidentified technical problems were to be expected to some extent even when complete feasibility level planning had been accomplished, the pressures of the political process also played a role when hurried deals did not allow time for proper planning to be accomplished. For example, neither the Corps nor Reclamation had done extensive planning on all of the projects which were hurriedly combined in 1944 to create the Pick-Sloan Plan.

This manifested itself when significant irrigation drainage problems were subsequently encountered on a large number of the acres which were to be brought under cultivation. While it is probably the most extreme example, the situation at the Oahe Unit, Pick-Sloan Plan, is instructive. The drainage problem in the nearly 500,000 acre Oahe Unit proved to be so difficult that

¹⁷⁰ The updated economic analyses for the Animas-La Plata Project offer a very good example in this regard. See, ANIMAS-LA PLATA PROJECT, *supra* note 167.

Reclamation convened a consulting board of outside experts to advise it.¹⁷¹ Of the three general types of soil conditions found in the project area, the consultants concluded that two simply were not susceptible of drainage by practicable means. With respect to the third soil type, they found that it could be drained if an appropriate system of subsurface tile, and the associated collecting, drains were to be installed. However, the tile drains would have had to be placed relatively close together (spacing of from 225 to 330 feet on every farm). Such spacing proved, in the end, to be prohibitively expensive.

In the Colorado River Basin, an example of political pressures on the planning process would seemingly be the Five Fingers projects in Colorado. Although the planning reports supporting each of these projects as they moved through the legislative authorization process in 1965-1968 were denominated "feasibility studies," they were, in fact, little more than the reconnaissance level plans that had been completed earlier. They were rushed to completion as supposed feasibility studies by Reclamation to satisfy the demands of Congressman Aspinall of Colorado, who was refusing to hold hearings on the legislation to authorize the CAP until Colorado's interests were addressed.¹⁷²

Unforeseen engineering problems could, of course, arise for the projects authorized either for the upper or lower basins. Being charitable, one might simply note that the upper basins' projects, for whatever reasons, seem to have encountered more difficulties in this regard than those of the lower basins. From those who have a more jaundiced view of the political deals in the Colorado and Missouri River Basins, one might hear the argument that Reclamation, in the rush to appease its constituency, proposed projects which never did have any hope of going forward.

7. Environmental Concerns

To state the obvious, concern about the environmental consequences of the construction and operation of water resources development projects, and the attendant consumption of water and reduction in stream flows, has become a major public issue over the past 25-30 years. Instream flow requirements for fisheries and recreation, loss of riverine habitat, water quality conditions, endangered species concerns, modification of naturally occurring stream

¹⁷¹ S. Harding, J. Lakisch, C. Jacob, Report on the Drainability of Lands in the Oahe Unit of the Missouri River Basin Project (Dec., 1954) (unpublished report available in the author's personal files and presumably in the files of the U.S. Bureau of Reclamation).

¹⁷² See H. INGRAM, *supra* note 3, at 71-78.

temperature and turbidity conditions below reservoirs, and numerous other environmental considerations that once would have been brushed aside came to the forefront in the 1970s, symbolized by the signing into law on January 1, 1970, by President Nixon of the National Environmental Policy Act of 1969 (NEPA).¹⁷³ Re-evaluation pursuant to NEPA of authorized but yet to be initiated projects, and even of some already under construction, coupled with the new evaluation standards for water projects noted above, combined to highlight the significant and, in the eyes of many, unacceptable environmental impacts which water projects can have.

The strength of the environmental movement also impacted the political process that was required to sustain support for water projects as they moved through the lengthy process required for final planning and initiation of construction.

The growing power of the environmental movement at the national level introduced untenable conflict into the process of obtaining political approval of projects. Opposition by environmental groups cut into the unified support prerequisite to a successful bid for project authorization. Congressional sponsors of proposed projects were forced to spend more time mediating conflict about the potentially environmentally damaging aspects of plans. Even when sponsors won congressional battles, it was not altogether certain that applause for bringing home the bacon would come from constituents. Detractors who could not be placated continued to maintain that water projects were environmental insults.

Further, legislators could no longer depend upon the mutual noninterference rules that once governed congressional water politics. Instead of respecting fellow legislators as the legitimate spokespersons of their districts' welfare, environmentally oriented and fiscally concerned members of Congress challenged whether water projects were anywhere in the public interest. ...¹⁷⁴

While environmental opposition to upper basin projects came principally from national or regional organizations, it also came with increasing frequency over time from citizens of the very states which would be benefitted, and damaged, by a project. Furthermore, when there was opposition to projects from the local farming community, as there was in some instances, environmental interests were sometimes able to combine

¹⁷³ National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified at 42 U.S.C. §§ 4321-61 (1994 & Supp. 1996)).

¹⁷⁴ H. INGRAM, *supra* note 3, at 14-15.

forces with these non-traditional allies to make the politics of supporting a project even more complicated for elected officials.¹⁷⁵

In short, it was a different political ballgame for upper basin operatives in the 1970s, 80s, and 90s than it had been in the 40s, 50s, and 60s.

The Realities of Political Agreements

The history of the political agreements reached in the Colorado and Missouri River Basins, and the foregoing survey of factors which brought about the demise of the projects hoped for by upper basin water development interests, reveal several realities about "deals" forged in the political arena:

1. A political agreement can be memorialized in a statute, but that statute is not binding on future Congresses, which are free to amend, repeal, or indirectly supplant the previous statute (*i.e.*, the previous agreement). Examples of this would be project de-authorizations (*e.g.*, the 1964 de-authorization of the Pick-Sloan Plan's irrigation units not then under construction and of other projects), the passage of NEPA and numerous other environmental laws which have indirectly impacted project authorizations, and new requirements for non-federal, up-front cost sharing imposed on projects after their initial authorization.
2. Authorizing legislation must be followed by the requisite appropriations. However, future Congresses are not bound to make any appropriations and can simply ignore the agreement (*i.e.*, the authorizing legislation). Witness in this regard the numerous projects in the upper basins which never received appropriations and were, therefore, never constructed, even in the face of statutory language supposedly directing that Colorado's Five Fingers CRSP participating projects were to be constructed, "as nearly as practicable," concurrently with the construction of the CAP.
3. As a consequence of the two preceding realities, political agreements are, at best, only as good as the handshakes of the legislators who make

¹⁷⁵ Examples in this regard would be the Narrows Project on the South Platte River in Colorado and the Garrison Diversion Unit in North Dakota. In both instances, the initial opposition to these projects was locally based. In the case of the Narrows Project, local farmers whose lands would have been inundated for a reservoir opposed the project. In North Dakota, opposition to the McClusky Canal, the main conveyance facility for the Garrison Diversion Unit, came from many of the farmers (and the local chapters of the national farm organizations to which they belonged) whose lands would be taken for and divided by the canal. National environmental organizations arrived on the scene later and combined forces with these local opponents to eventually kill both projects.

them and they last, therefore, only as long as those actors remain on the scene and in power. The political "staying power" required to move a project through the annual appropriations process over many years is the quintessential example of this reality.

4. The circumstances which prevailed at the time a political agreement is reached will almost inevitably change over time for reasons that are beyond the control of all involved in the agreement. There are many examples in this regard: changing societal values and concerns, failing project economics, changing federal budgetary circumstances, new environmental concerns and laws addressing those concerns, and vastly increased public interest in outdoor recreation opportunities at Corps and Reclamation reservoirs.

5. In turn, changed circumstances will almost always prompt reevaluation and reconsideration of previous public policy decisions by those who were not party to, or did not agree with, the original decision. In the Congressional arena, one can quite often keep an issue alive and get a second bite at the apple if they were not satisfied with the first bite.

Put another way, a political agreement, even though "enacted into law," is something vastly different than a legally binding and enforceable contract. It can hardly be said that an agreement existed which the federal government was legally beholden to observe. From this perspective, the bargains made in the past cannot be said to have been broken by Congress -- it had no obligation to "keep the deals" in the first place. Rather, the deals which upper basin water interests made were necessarily subject to the vagaries of the political process.

Furthermore, upper basin states were not misled when they entered into the "deals" described in this paper. They knew and understood the realities of political agreements.¹⁷⁶ Upper basin states bargained valiantly with whatever power of facts, persuasion, committee chairmanships in Congress, and votes were at their disposal at the time. They held out as long as they could for as much as they could. It was their only hope, and they knew it.

In summary, political deals, even though "enacted into law" by Congress, are always subject to one constant -- they can be changed. They are not legally binding and they can never be guaranteed. This always has been, and always will be, the upper basins' political conundrum -- a deal is really not a deal.

¹⁷⁶ This statement is certainly true of federal, state, and local elected officials, state water agency officials, and the astute leadership of local water districts, as they were day-to-day participants in the political process. It is doubtful, however, that the average aspiring irrigator really grasped the hollowness of the "promises" being made to him.

Conclusions and Recommendations to the Commission

Introduction

The upper basins clearly did not receive, for the reasons explained above, that for which they had bargained, while the lower basins generally did. This section will explore whether the Western Water Policy Review Advisory Commission should endeavor to address this situation in the course of its deliberations.

A Clash of Perspectives

From the perspective of many upper basin water development interests, the political agreements described in Sections 3 and 4 of this paper constituted "deals" between the upper and lower basins that the federal government and the lower basin states were at least duty bound, if not legally bound, to honor. In the eyes of those who are advocates of further upper basin water resources development, the fact that the projects "promised" to them by the political agreements of the past did not materialize is often described, with heartfelt frustration, as being "unfair" or "inequitable."

They argue that upper basin states have been "short changed" because many of their authorized federal water projects did not go forward, while nearly all of the projects in, or to the benefit of, the lower basins did get constructed -- sometimes at the expense of the upper basins' lands and riverine resources being inundated to build reservoirs for the lower basins' benefit. The lower basins having gotten "theirs," upper basin interests believe that the completion of the upper basins' bargained for federal water projects -- or, federally financed contemporary substitutes therefore or receipt of a "fair share" of the benefits which can now be derived from the projects which have in fact been developed (*e.g.*, recreational benefits on the Missouri River mainstem reservoirs) -- is now "owed" to the upper basin states.¹⁷⁷

In the context of the Colorado River Basin, one commentator captured the typical perspective of traditional upper basin water development interests' with the following observations:

¹⁷⁷ Others, of course, both within and outside of the upper basins, do not share this view, particularly with respect to the call for federal financing and construction of more authorized projects or substitutes therefore.

The development of the Colorado River Basin has been enormously uneven. Upper Basin states have lagged behind the Lower Basin, and within the Lower Basin ... Los Angeles and the Imperial Valley [and one could now add the Central Arizona Project] have consumed vast quantities of water. This growth was made possible in part through the consent of upstream users who believed that they would eventually have a turn in line for federally funded water development. The case of the state of Colorado in the Upper Basin ... [has been] systematically laid out:

"Colorado's position consists of several elements: (1) that over a span of more than 60 years this State has cooperated generously with other states and with the Federal Government in fabricating a "Law of the River"; (2) that through this carefully, although not flawlessly, crafted system of compacts and Federal statutes Colorado is entitled to make beneficial use of more than 3 million acre-feet of water from the river system; (3) that Congress registered its unequivocal intent in every major act concerning the Colorado River to develop completely -- that is to treat the entire basin as an integrated hydro-climatic system ...; (4) that as part of this overall plan, the Federal Government had explicitly committed itself to construct and operate dams and reclamation projects in Colorado (by the terms of various acts); (5) that realistically Colorado's full compact share of the river system could only be made available to the people of the State if and when the Federal Government completed the promised projects at Federal expense; [i.e., the people of Colorado were owed a federal subsidy, and] (6) consequently the Federal Government and the other compact States have not only a statutory commitment but a moral/historic obligation to support Federal development of water projects."

... It is patently unfair for the claimants who have yet to develop to carry their [sic] entire burden for previous decisions overestimating the amount of water in the river and underestimating claims of Indians and Mexicans and the possible adverse environmental consequences of overbuilding on the river. The obligation for satisfying all legitimate claims that exist on the river belong especially to the Lower Basin users whose interests have been for so long so well served.¹⁷⁸

¹⁷⁸ Ingram, Scaff, and Silko, *Replacing Confusion with Equity: Alternatives for Water Policy in the Colorado River Basin*, in *NEW COURSES FOR THE COLORADO RIVER -- MAJOR ISSUES FOR THE NEXT CENTURY* 177 (G. Weatherford and F. Brown ed.s 1983), quoting from McBride, "Colorado Water Resources Development Politics" (paper presented at the annual convention of the Western Political Science Association, Seattle, March 24-26, 1983). Footnote omitted.

In the context of the Missouri River Basin, another commentator offers this view:

The Pick-Sloan Plan has not worn well with the passage of time. In the years following its authorization, not all of the terms of the historic agreement have been carried out. To be sure, six great dams have been constructed on the Missouri main stem, flooding has been avoided, and navigation on the lower reaches of the river has greatly improved. Very little, however, of the upper basin's irrigated agriculture potential has been realized. Moreover, the hydropower that was to benefit rural agricultural communities now finds its way to such out-of-basin places as Minneapolis-St. Paul.

The basin's Indian tribes, especially those that had reservations on the main stem, have benefited little if at all. ...

The virtues of the Pick-Sloan Plan have also been undermined by dramatic trends since its implementation. The systemic problems of agriculture, owing to international competition, U.S. monetary policy, and changeable farm policies, have been powerful barriers to the development of agriculture in the upper basin states. Furthermore, a nation plagued by continuing federal fiscal imbalance has less tolerance for funding water development projects -- especially those with potential adverse environmental impacts. ...

... [T]he Pick-Sloan Plan, rather than achieving the anticipated co-operation and economic development among basin residents, has results in an inequitable distribution of benefits favoring the lower basin. This continuing inequity undermines efforts at cooperation and produces new tensions. ... The failed Pick-Sloan Plan has poisoned relationships among basin states and tribes, creating a burden that is now shared by the entire basin.¹⁷⁹

To be sure, there are those who, with equal conviction, will argue that upper basin interests have themselves to thank to some extent for their problems (e.g., local opposition to their own projects and hastily planned projects that proved to be infeasible) or that the upper basins benefitted handsomely and are therefore due nothing more in the name of being made "whole" relative to some past political deal. From the debate about the loss of lands in South Dakota due to the construction of the mainstem reservoirs, the following 1981 commentary from an Iowa newspaper is illustrative:

¹⁷⁹ J. THORSON, *supra* note 100, at 94-5.

*It strikes us that South Dakota has received as many flood control benefits as its downstream neighbors, so that "sacrifice" talk is specious. In addition, South Dakota and its citizens received the financial benefits of millions of dollars of federal monies spent in the state during the score of years it took to build the entire ... impoundment system ... [on the mainstem]. ... [F]urther ..., these impoundments have given South Dakota a recreational potential that is the wonder and envy of the nation. What kind of "sacrifice" is this? No, South Dakota has been paid off for the Missouri impoundments*¹⁸⁰

Or, rather than engaging in a public debate as to where the equities lie, a more measured and guarded lower basin reaction (Colorado or Missouri River Basins) might simply be a knowing shrug and unspoken truth: "Time passed the upper basins by -- those are the breaks."

Not unexpectedly, perspectives clash as to whether the upper basins have been, and are now being, fairly treated.

What Should the Commission Do?

Were the Commission to address itself to the circumstance that lower basin interests have generally received the projects promised them from federal water development programs, while the upper basins have not, it would, among other things, have to decide what benefits have or have not been received by whom and have to assess where the equities in the historical treatment of the basins lay. For the reasons explained below, this author is of the opinion that this would not be a fruitful area of inquiry for the Commission.

This is not to say that equitable treatment of the upper and lower portions of a basin as regards the distribution of benefits (and costs) from federal water resources projects and programs is not important. Quite to the contrary. Public policy decisions should always be, in this author's opinion, informed by considerations of distributive justice, social equity, and fairness.¹⁸¹

Rather, this conclusion derives solely from the judgment that "redressing" the "unfair" treatment which upper basin water development interests

¹⁸⁰ *Sioux City Journal*, Oct. 3, 1981, quoted in J. THORSON, *supra* note 100, at 237 (in footnote 58).

¹⁸¹ For an enlightening, albeit somewhat philosophical, dissertation in this regard, as applied specifically to the issue of equities in the Colorado River Basin, see Ingram, Scaff, and Silko, *supra* note 178, at 177-199.

believe has befallen them is a task which is uniquely the province of elected and appointed officials working in the political process, whatever the Commission might think of the arguments on either side of the equity issue. Generating a "Pick-Sloan Plan II" or "Son of CRSP" is not a task which the Commission can effectively undertake. There are several reasons for this conclusion.

First, political deals such as were reached in the Colorado and Missouri River Basins are primarily creatures of political compromise and the legislative process, not of national policy considerations, although such considerations certainly provided the context in which the agreements were set (e.g., the federal social and economic policy of settling the then agrarian West in part undergirded the deals in the Colorado River Basin, while having employment available for soldiers returning from World War II and repopulating the Great Plains were policies which framed the development of a plan for the "comprehensive development" of the Missouri River Basin). Given the realities of political agreements as summarized in the preceding section of this paper, and given the nature of the Commission as a study and recommending body, refashioning such agreements would not lend itself to the kind of policy deliberations for which the Commission is best equipped.

Second, and as a corollary to the first point, considerations of equity in the distribution of federal dollars and the benefits to be derived from a given federal program can only be addressed in the Congressional process of making individual project authorization and appropriation decisions. Such decisions, especially as they pertain to funding levels, are not matters to which the Commission can usefully address itself.

Third, refashioning past agreements necessarily requires that new political agreements be enacted by Congress in the form of amendatory or new authorizing legislation. Needless to say, any new agreements for water project development, or substitutes therefore, in the upper basins would be subject to the vicissitudes of the political process to the same extent as the original agreements. Contemporary proof of this may be found in three salient examples.

The Animas-La Plata Project is a cornerstone of the Colorado Ute Indian Water Rights Settlement Act of 1988. The water marketing provision of the act¹⁸² was strongly opposed by the three Lower Division States, and even to some extent by Utah and Wyoming. Compromises were eventually reached and the legislation moved through Congress after two years of arduous

¹⁸² Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, § 5(b), 102 Stat. 2974.

negotiations. The very next year, an endangered native fish species was found in the San Juan River. Then, lawsuits were brought by environmental interests alleging that Reclamation had not completed the necessary environmental compliance for the project. Thirty years after it was authorized, and nine years after it was reaffirmed in a new deal with the Lower Basin, construction of the project has yet to be initiated.

The reformulation of the Garrison Diversion Unit is equally instructive. The multi-party negotiations which led to the passage of the Garrison Diversion Unit Reformulation Act¹⁸³ were as complex and intense as any associated with the historical agreements of the 40s, 50s, and 60s. This time, national environmental interests were at the table. Yet, only four years later, the Bush Administration, an actor not party to the mid-1980s negotiations, declined to proceed with the non-Indian irrigation portions of the reformulated project.¹⁸⁴ The deal, in the form of the act, is still on the books, but appropriations with which to proceed have not been forthcoming. It has an all too familiar ring to the upper basin.

As a final example, the recent authorizations and appropriations which Congress has made for the rural domestic water supply systems in the Dakotas are instructive. These are not decisions which flowed from broad policy deliberations such as the Commission can engage in, but rather from the give and take of the political process.

Put another way, the Commission is not in a position to broker new deals. These are matters that must necessarily be left by the Commission to the states and to the Executive Branch and Congress.

Fourth, it can no longer be automatically said that each and every upper basin state, acting through its state officials, wholeheartedly expects, or desires, the near-term development of such water resources as may yet be available to it for beneficial consumptive uses. To the contrary, the nearly uniform position of upper basin states in support of water project development in the past has given way to a broad range of official state policies and positions in recent years. Different states have adopted different strategies for dealing with the protection and development of their remaining entitlements to the waters of interstate streams, reservations of instream flows, non-federal water project financing, operation of reservoirs to achieve contemporary recreational benefits, and even the interstate marketing of

¹⁸³ Garrison Diversion Unit Reformulation Act of 1986, Pub. L. No. 99-294, 100 Stat. 418.

¹⁸⁴ U.S. DEPARTMENT OF THE INTERIOR, GARRISON DIVERSION UNIT TASK GROUP REPORT (October, 1990).

water. It would not be prudent for the Commission to presume that there is uniform support within the upper basin states to complete the development contemplated in past political agreements. These are matters best left to the states.

Finally, to the extent that broad policy considerations undergird individual project authorizations, "righting" the "wrongs" of the past should not be premised upon extending into the next century social and economic policies that, whatever their validity earlier in this century may have been, no longer fit the circumstances at hand. The West has now been settled, incremental increases in irrigated agriculture would contribute very little to sustaining its overall economy, and the boys who returned from World War II have long since found employment. Merely fulfilling past political agreements, simply because they were made, is not a sufficient reason, in and of itself, for the Commission to engage in a search for additional water development projects for the benefit of the upper basins.

While it is not recommended that the Commission engage in an attempt to fashion new basin plans for the distribution of federal water project benefits as between upper and lower basins, the author does believe that the Commission's deliberations should be informed by an awareness of, and sensitivity to, the perception, if not the reality, of the inequities which the upper basins have (or believe they have) experienced. Attitudes and approaches to the resolution of many current water resources management issues are inevitably colored by perceptions of past treatment.

Furthermore, the author would invite the Commission to consider making certain observations to Congress and the federal water resources agencies about any efforts to address whatever inequities may have arisen between upper and lower basins because past political agreements were not fulfilled:

1. The equitable "re-distribution" of the benefits which can now be derived from existing projects is one way to redress failed past promises. Indeed, such management issues are now far more likely to be the focus of discussions between the upper and lower basins than are debates about who gets which new federal water project. A salient example in this regard is the issue of how to operate the mainstem reservoirs on the Missouri River now that a valuable recreational economy has unexpectedly developed in the upper basin, while navigation has been declining on the lower mainstem.¹⁸⁵

¹⁸⁵ It is also to be acknowledged that the debate over the "best" operation of the mainstem reservoirs, besides having an upstream-downstream component to it, also has a consumptive versus non-consumptive use component to it, as is typical of water management issues throughout the West in this day and age.

2. In the face of contemporary circumstances, past deals simply will not be fulfilled in the manner originally envisioned. Thus, if inequities have resulted which merit being redressed, old deals will have to be re-opened and re-negotiated. The parameters within which the federal government is prepared to come to the table, if at all, need to be established.

3. Finally, it is readily apparent that political agreements among the basins, and among the states and the federal government, must always deal with one constant -- and that is ever changing circumstances. Thus, preserving and maintaining flexibility, while still achieving a reasonable degree of security and certainty for all concerned, will be the hallmarks of successful agreements in the future.

A Postscript

The question to which this paper has been addressed was narrowly drawn -- *i.e.*, whether the "inequities" experienced by the upper basins because federal water project development did not proceed in accordance with historical political agreements is a situation to which the Commission should address itself. Accordingly, this paper has necessarily examined only one element in the argument made by upper basin interests that they have been and are being treated "inequitably" -- namely, that more federally financed water projects, or more benefits from existing federal projects, should be directed their way in order to fulfill past promises.

There is, however, a second element to the upper basins' argument that they are being treated "inequitably." Besides being concerned that federal water projects have been developed for the lower basins largely as promised, but not for the upper basins, upper basin states are also concerned that today's federal environmental laws, regulations, policies, programs, and agency decisions are adversely impacting their ability to manage -- as they see fit and in accordance with their state laws and the applicable interstate compacts and decrees -- water supplies which have already been developed (privately or federally) in their states. They also fear that even if they and their water users choose to provide non-federal sources of financing for the development of such additional water development projects as they believe to be in the state's interest, they still will not be able to construct such projects. Upper basin water development interests see these circumstances as being "unfair" and "inequitable" when viewed against the backdrop of the lower basins having been able to fully consume or otherwise develop the waters allocated to them, in large part due to federally financed construction of water projects.

The increasingly fractious interface between the vast array of federal environmental authorities and policies on the one hand, and the exercise of vested water rights under state law and the utilization of waters allocated by compact and decree on the other hand, is a pressing problem. It involves broad issues of national policy that are deserving of and amenable to deliberation by the Commission, including consideration of the equities that flow, intended or unintended, from the implementation of these environmental authorities and policies -- not only as between upper and lower basins, but also as between the beneficiaries of traditional consumptive uses of water and of non-consumptive recreational and environmental uses.

The issues involved are recounted in the six basin studies for which the Commission has contracted and therefore will not be enumerated here. For the purposes of this paper, it will merely be observed that these issues are, in this author's opinion, being played out in three related, but importantly different (from a legal perspective), contexts:

- (1) changing the uses and management of the water supplies available from existing federal water resources projects (the water supplies from which are subject to a project's authorized purposes and are subject to contracts between the United States and the water users), which changes stem both from regulatory requirements and discretionary policy choices by federal agencies,
- (2) federal regulatory impacts and constraints on the use and management of existing non-federal projects, and
- (3) federal regulatory impacts and constraints on the further development, with non-federal financing, of a state's water resources.

The six basin studies, at least in their draft form, generally did not given attention to the matter of equities as between upper and lower basins. Yet, considerations of the equitable treatment of the basins pervades, implicitly if not explicitly, many of the contemporary water management issues and debates to which the Commission's attention is being invited. This aspect of the upper basins' argument, unlike the one upon which this paper has focused, does merit attention.

Appendix A

Proposed Projects	State	Acres to be Irrigated: Full ¹	Acres to be Irrigated: Partial ²	Capacity (kW)	Power Investment	Reservoir Storage Investment	Benefit/ Cost Ratio
FUTURE UNITS							
North Republican Unit	CO/NE	2,400	2,700	0	\$0	\$0	0.18
Wilson Unit	KS	25,000	0	0	\$0	\$0	0.10
Alzada Unit	MT	9,000	0	0	\$0	\$0	0.10
Battlefield Unit	MT	1,200	0	94	\$64,741	\$2,603,800	0.05
Benteen Flat Unit	MT	1,600	0	0	\$0	\$3,473,300	0.07
Bonanza Unit	MT	800	0	58	\$39,946	\$72,056	0.33
Brush Unit	MT	1,000	0	70	\$48,211	\$90,070	0.46
Cameron Bench Unit	MT	4,000	3,100	0	\$0	\$0	0.07
Chestnut Valley Unit	MT	4,600	0	0	\$0	\$0	0.05
Clarkston Unit	MT	1,000	0	134	\$92,290	\$0	0.09
Cracker Box Unit	MT	1,600	0	106	\$73,005	\$0	0.07
Crow Unit	MT	1,200	0	69	\$47,522	\$2,603,800	0.05
Diamond Ranch Unit	MT	900	0	0	\$0	\$81,063	0.39
Dunmore Unit	MT	11,400	0	0	\$0	\$24,740,800	0.10
Elm Coulee Unit	MT	2,000	0	445	\$306,485	\$0	0.18
Farmer Creek Unit	MT	1,600	0	187	\$128,793	\$144,112	0.39
Gallatin Unit	MT	0	59,100	3,064	\$2,110,269	\$0	0.79
Glasgow Bench Unit	MT	59,400	0	15,300	\$10,537,569	\$5,350,158	0.37
Haley Unit	MT	2,400	0	703	\$484,177	\$0	0.19
Hardin Unit	MT	42,600	1,000	13,300	\$9,160,109	\$0	0.06
Hardscrabble Unit	MT	2,200	0	273	\$188,023	\$198,154	0.41
Hobson Unit	MT	0	6,000	0	\$0	\$0	0.02
Huntley Extension Unit	MT	1,800	0	52	\$35,814	\$0	0.03
Jefferson Unit	MT	47,400	15,200	0	\$0	\$0	0.06
Lewistown Unit	MT	4,000	0	0	\$0	\$0	0.07
Madison Unit	MT	12,600	13,600	0	\$0	\$0	0.08
Marsh Unit	MT	2,800	0	716	\$493,131	\$0	0.03
Medicine Lake North	MT	14,700	0	7,440	\$5,124,151	\$1,324,029	0.13
Medicine Lake South	MT	24,700	0	10,130	\$6,976,835	\$2,224,729	0.15
Missouri Diversion Unit	MT	92,800	0	28,720	\$19,780,326	\$8,358,496	0.17
N-Bar-N Unit	MT	7,200	0	739	\$508,971	\$648,504	0.22
Newlan Unit	MT	3,900	0	0	\$0	\$0	0.03
Nickwall Unit	MT	2,800	0	245	\$168,739	\$252,196	0.29
Nohle Unit	MT	1,700	0	242	\$166,673	\$153,119	0.34
Rock Creek Unit	MT	1,000	200	0	\$0	\$0	0.06
Ross Fork Unit	MT	3,000	0	0	\$0	\$0	0.08
Saco Divide Unit	MT	9,400	0	1,800	\$1,239,714	\$0	0.10
Seven Mile-Sitting Bull Unit	MT	6,500	0	941	\$648,095	\$0	0.08
Seven Sisters Unit	MT	3,200	0	1,462	\$1,006,923	\$0	0.13

The Upper Basins' Political Conundrum: A Deal is Not a Deal

Proposed Projects	State	Acres to be Irrigated: Full ¹	Acres to be Irrigated: Partial ²	Capacity (kW)	Power Investment	Reservoir Storage Investment	Benefit/ Cost Ratio
FUTURE UNITS							
Shoestring Unit	MT	1,200	0	109	\$75,072	\$108,084	0.27
Shotgun (privately developed)	MT	0	0	0	\$0	\$0	NA
Sidney Unit	MT	1,000	0	266	\$183,202	\$0	0.12
Stipek Unit	MT	2,900	0	1,211	\$834,052	\$0	0.12
Sun-Teton Division	MT	53,200	3,700	1,422	\$979,374	\$0	0.01
Whitehall Unit	MT	6,700	3,900	0	\$0	\$0	0.12
West Bench Unit	MT	0	6,700	0	\$0	\$0	0.07
Wyola Unit	MT	3,600	0	0	\$0	\$7,816,100	0.09
Yellow Bluff Unit	MT	1,300	0	118	\$81,270	\$117,091	0.35
Bismarck Unit	ND	8,500	0	514	\$354,007	\$765,595	0.11
Broncho Unit	ND	15,400	0	0	\$0	\$0	0.08
Burnt Creek Unit	ND	1,300	0	64	\$44,079	\$117,091	0.12
Hancock Flats Unit	ND	5,400	0	1,202	\$827,853	\$486,378	0.12
Horsehead Flats Unit	ND	6,500	0	1,494	\$1,028,963	\$585,455	0.07
Manley Unit	ND	1,200	0	47	\$32,370	\$108,084	0.21
Nesson Unit	ND	7,400	0	591	\$407,039	\$666,518	0.38
Oliver-Sanger Unit	ND	8,300	0	2,109	\$1,452,532	\$747,581	0.14
Painted Woods Unit	ND	2,800	0	601	\$413,927	\$252,196	0.11
Square Butte Unit	ND	1,900	0	94	\$64,741	\$171,133	0.09
Williston Unit	ND	8,500	0	1,689	\$1,163,265	\$765,595	0.33
Winona Unit	ND	4,500	0	686	\$472,469	\$405,315	0.08
Wogansport Unit	ND	1,600	0	172	\$118,462	\$144,112	0.09
Albion Division	NE	16,900	1,900	364	\$250,698	\$0	0.05
Cedar Rapids Division	NE	29,800	0	97	\$66,807	\$0	0.05
Little Blue Unit	NE	20,000	0	0	\$0	\$0	0.03
Mirage Flats Extension	NE	5,900	0	0	\$0	\$0	0.04
Belle Fourche Units	SD	5,000	0	290	\$199,732	\$0	0.06
Crazy Horse Unit	SD	500	0	32	\$22,039	\$45,035	0.11
Culdesac Unit	SD	5,400	0	1,848	\$1,272,773	\$486,378	0.08
Fort Thompson Unit	SD	7,500	0	1,841	\$1,267,952	\$675,525	0.19
Grass Rope Unit	SD	4,300	0	1,366	\$940,805	\$387,301	0.09
Greenwood Unit	SD	4,900	0	472	\$325,081	\$441,343	0.18
Iron Nation Unit	SD	1,700	0	503	\$346,431	\$153,119	0.06
Joe Creek Unit	SD	4,400	0	1,649	\$1,135,716	\$396,308	0.08
LaRoche Unit	SD	1,800	0	551	\$379,490	\$162,126	0.03
Pine Ridge Unit	SD	12,700	0	1,695	\$1,167,397	\$0	0.02
Rousseau Unit	SD	2,200	0	566	\$389,821	\$198,154	0.06
Tower Unit	SD	2,000	0	100	\$68,873	\$180,140	0.29
Yankton Unit	SD	1,100	0	58	\$39,946	\$99,077	0.05

Conclusions and Recommendations to the Commission

Proposed Projects	State	Acres to be Irrigated: Full ¹	Acres to be Irrigated: Partial ²	Capacity (kW)	Power Investment	Reservoir Storage Investment	Benefit/ Cost Ratio
FUTURE UNITS							
Edgemont Unit	SD/WY	4,700	0	0	\$0	\$0	0.02
Bighorn Unit	WY	1,700	0	426	\$293,399	\$374,054	0.15
Boysen Unit	WY	0	0	0	\$0	\$0	0.00
Buffalo	WY	3,000	7,100	0	\$0	\$0	0.09
Crazy Woman Unit	WY	5,700	6,400	280	\$192,844	\$0	0.10
French Creek Unit	WY	800	2,500	0	\$0	\$0	0.07
Greybull Flat Unit	WY	1,000	0	343	\$236,234	\$211,281	0.17
Hudson Bench Unit	WY	5,700	0	0	\$0	\$513,399	0.16
Kaycee Unit	WY	23,100	5,600	2,529	\$1,741,798	\$0	0.08
Lower Powder Units	WY	58,500	0	4,290	\$2,954,652	\$0	0.23
Piney Unit	WY	4,000	16,000	56	\$38,569	\$0	0.21
Sheridan Unit	WY	0	38,100	0	\$0	\$0	0.20
Shoshoni Unit	WY	16,600	0	2,210	\$1,522,093	\$3,578,846	0.31
Tongue Pumping Units	WY	26,100	0	1,800	\$1,239,714	\$0	0.12
Ucross Unit	WY	2,800	7,100	224	\$154,276	\$0	0.04
REAUTHORIZED							
Pollock-Herried Unit ³	SD	15,000	0	6,060	\$4,173,704	\$1,351,050	1.7—1968
Garrison Diversion ⁴	ND	115,740	0	72,298	\$50,753,288	\$20,357,702	0.70—1992
Lake Andes-Wagner ⁵	SD	45,000	0	23,900	\$16,460,647	\$4,053,150	0.56 & 1.02—1986
Shoshone Extension ⁶	WY	36,600	37,300	522	\$0	\$200,660	2.08—1967
Narrows Unit ⁷	CO	0	225,800	0	\$0	\$0	1.62—1967
Nebraska-Mid State Div. ⁸	NE	140,000	0	16,800	\$11,570,664	\$0	1.4—1960
O'Neill Unit ⁹	NE	77,000	0	4,515	\$3,109,616	\$0	1.53—1971
Oahe Unit ¹⁰	SD	495,000	0	157,236	\$108,293,150	\$44,584,650	1.7—1965

Abbreviations

CO	Colorado
KS	Kansas
MT	Montana
ND	North Dakota
NE	Nebraska
SD	South Dakota
WY	Wyoming

Source: Personal communication, George St. George, Great Plains Region, U.S. Bureau of Reclamation, February 28, 1997.

1. Full acres are irrigated acres using Federal irrigation water only.
2. Partial acres are irrigated acres using Federal water as a supplement to other sources of irrigation water.
3. The appropriation was deauthorized by P.L. 100-516, which also authorized the Mni-Wiconi Rural Water Supply Project. No studies were done to determine project feasibility but rather local interests suggested deauthorization of the irrigation development as a trade-off for development of a rural domestic water supply and distribution system to serve the needs of the Indian and non-Indian populations in the area. The power allocation for the unit was made available for the municipal and industrial system and funding for irrigation and development was deauthorized. The irrigation unit remains a future unit of Pick-Sloan as provided in the legislation.
4. The acreage for the Garrison Diversion Unit was reduced from 1,000,007 acres to 130,940 acres by P.L. 99-294, and further reduced to 115,740 acres by P.L. 102-575. It was recognized at the time of reformulation (1986) that the reduced scope of the project would result in economic infeasibility because of the loss of economies-of-scale and other factors. The reformulation took place as a compromise solution. Subsequent to reallocation of project costs, it was determined that the project was also financially infeasible because the irrigation annual operation and maintenance costs exceeded the irrigator's computed ability to pay. A team appointed by the Secretary recommended that further irrigation development on the project be halted. The State of North Dakota and the Garrison Conservancy District are developing a proposal for the future of the project.
5. The unit was authorized by the Lake-Andes/Marty II Unit Act of 1992 (P.L. 102-575). The benefit/cost ratio for this unit was based on post-1979 methodologies. Reclamation employed "customized procedures" in calculating the ratio that allowed the consideration of a specialty crop (potatoes) as a benefit. The Planning Report/Draft EIS (1985) exhibited a benefit cost ratio under strict P&G standards of .56. Under the customized procedures which included specialty crops (potatoes), livestock intensification, and alternative price normalization, the B/C was 1.02. This was the basis under which Congress authorized the project. Development of the full 45,000 acres is dependent on a finding of irrigation suitability of the soils.
6. The Polecat Bench Area was first studied for development in 1919. Investigations and study of this area has continued for many years. In 1966 a feasibility report for Polecat Bench was published and in March 1970 a reevaluation statement was prepared which updated the economic and financial analyses. These two reports were published as House Document No. 92-340, 92nd Congress, 2nd session. Congressional hearings on Polecat Bench were held in 1972 in Powell, Wyoming, and in Washington, D.C. On March 11, 1976, the Polecat Bench area, Shoshone Extensions Unit was re-authorized for construction as a Pick-Sloan project under P.L. 94-228, 94 Congress. The Polecat Bench Area was intended to receive its share of stored water from Buffalo Bill Reservoir as it would also share in the cost of the dam and reservoir when the area was developed. Development has not been pursued due to lack of local interest.

7. The Narrows Unit was authorized in March 1970 by P.L. 91-389 as a multi-purpose water resource development project. The Final Environmental Statement was issued in 1976. A general review of water projects by the Carter administration delayed funding of the project when Interior deleted funding for the project from its fiscal 1978 budget request and funding was again denied in the Continuing Appropriations Act, 1979. In 1981, Congress directed Reclamation to use available funds to begin appraisal and final design work. A Final Supplement to the Final Environmental Statement was issued March 4, 1985. During this entire period, environmental concerns continued to plague the project. In 1987, Reclamation issued a Draft Biological Opinion on Narrows which raised the issue of impacts to threatened and endangered species in the Platte River System from the project. These issues have prevented further development on the project.

8. The Nebraska Mid-State Division was authorized on November 14, 1967 under P.L. 90-136. From the onset, environmental concerns and slow signups of potential irrigators delayed progress on the project. Continued reevaluation of the project to address environmental issues on the Platte River led to significant changes in the project and declining local support. A substitute project known as the Prairie Bend Project was investigated in the same general area and found to be infeasible under P&G standards (but feasible using "customized procedures").

9. The O'Neil Unit was authorized in 1972 under P. L. 92-514 with appropriations authorized in 1976 when construction commenced. However, lawsuits over the adequacy of National Environmental Policy Act compliance halted construction. Reevaluation and reformulation studies continued but no further action has been taken. The Niobrara Scenic River Designation Act of 1991 provided a 5-year moratorium on the stretch of river containing the diversion site for the project pending funding for construction. On May 24, 1996, this stretch of river became part of the scenic river designation because construction had not commenced.

10. The initial stage of the Oahe Unit, South Dakota was authorized on August 3, 1968 by P.L. 90-453. The primary purpose of the Oahe Unit, as authorized, provided for irrigation of 190,000 acres, fish and wildlife conservation and enhancement, recreation, municipal water supplies, flood control and other project purposes. In 1960 voters within a 15½-county area in Northeastern South Dakota approved the creation of the Oahe Conservancy Sub-District (OCSD). Construction began in 1974. Organized opposition to the Oahe Unit surfaced in 1973 with the formation of an organization known as United Family Farmers (UFF). UFF opposed development on several grounds including environmental and economic and succeed in electing members to the OCSD board. Meanwhile the project was made part of President Carter's Federal water project review. The wildlife plan by the U.S. Fish and Wildlife Service was expanded at the same time and required substantially more land to be acquired for that purpose. The OCSD Board subsequently passed a resolution on May 21, 1977, indicating that the Oahe Unit was not acceptable, not worthy of further funding, and not in the best interest of the people of OSCD. Oahe Unit construction was subsequently halted on September 30, 1977. Alternative uses of the existing project facilities have been the subject of several planning studies but none has proven feasible for authorization to date.