NEW OPTIONS FOR THE LOWER COLORADO RIVER BASIN

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I. Introduction

1991 was a pivotal year in the Lower Colorado River Basin. In 1990, total consumptive uses of water from the Colorado River in the three "Lower Division" states — Arizona, California, and Nevada — appeared to exceed 7.5 million acre-feet for the first time.[2] Requests for deliveries in 1991 suggested that consumption in the Lower Basin would exceed this basic apportionment under the Colorado River Compact once again.[3] A long-awaited day of reckoning had come.

Nearly 70 years had passed since the states of the Colorado River Basin and the federal government initially divided the waters of the Colorado River, apportioning 7.5 million acre-feet of "beneficial consumptive use" to the three Lower Division states.[4] California was fully consuming its original 4.4 million acre-foot share by the 1950s.[5] By the

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1980s it was diverting and using up to its 5.2 million acre-foot contract entitlement established with the Bureau of Reclamation.[6] And, in 1990, faced with the third year of a drought in California resulting in reduced deliveries of water from the north of the state to the south, California diverted and used more than its 5.2 million acre-foot contract entitlement.[7]

California's ability to make use of Colorado River water beyond its 4.4 million acre-foot basic allocation derived in part from the fact that neither Arizona nor Nevada was using its full share of Colorado River water. By 1990, the end of this happy (from California's perspective) state of affairs was clearly in sight. Arizona at long last had the physical ability to utilize its 2.8 million acre-foot share of Colorado River water with the nearly completed Central Arizona Project (CAP). Begun in 1973 and declared completed for purposes of initiating the repayment requirement in 1993, this $4.7 billion project lifts water from Lake Havasu on the Colorado River over 800 feet and carries it through a 335-mile aqueduct to Phoenix and Tucson. Ultimately, it is expected to deliver about 1.4 million acre-feet per year of Colorado River water to users in Arizona, roughly half of Arizona's apportionment of 2.8 million acre-feet.[8] Along with completion of the CAP, however, comes the obligation to pay a portion of the substantial costs for construction of the project and for its ongoing operation and maintenance. The long-awaited CAP turns out to be an expensive source of water supply for users in Arizona.[9]

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million acre-feet of Colorado River water, together with one half of any "surplus" flows in the river.

[6]Reclamation entered contracts with users in California in the 1930s for deliveries of up to 5.062 million acre-feet. David E. Lindgren, "The Colorado River: Are New Approaches Possible Now That the Reality of Overallocation is Here?" 38 Rocky Mt. Min. L. Inst. 25-1, 25-20 (1992) [hereafter "Lindgren"]. Under authority of Article II(B)(6) of the Decree in Arizona v. California, 376 U.S. 340, 343 (1964), the Secretary of the Interior contracted for delivery of the additional water up to 5.2 million acre-feet.

[7]"1990 Arizona v. California Report," supra n. 2, at 15. California's use of apportioned but unutilized Colorado River water is authorized under the Decree in Arizona v. California, 376 U.S. 340, 343 (1964).

[8]Deliveries of water in 1993 jumped to over 1 million acre-feet through the CAP, substantially exceeding the previous high of about 780,000 acre-feet in 1990. "1990 Arizona v. California Report," supra n. 2, at 9; "Progress Report No. 16" supra n. 2, at 9.

[9]For a thorough and unblinking analysis of the CAP, see Robert Jerome Glennon, "Coattails of the Past: Using and Financing the Central Arizona Project," 27 Arizona St. L. J. 677 (1995) [hereafter "Coattails"].

Meanwhile, skyrocketing growth in southern Nevada, especially in Las Vegas, is driving steadily increasing uses of Nevada's Colorado River apportionment. In 1950, the population of Las Vegas was 24,624; in 1970, the population had increased to 125,787; in 1990, the population of Las Vegas exceeded 1/4 million people.[10] Nevada's consumptive use of Colorado River water increased from about 156,000 acre-feet in 1989 to about 204,000 acre-feet in 1993.[11] At this rate of growth, full consumptive use of Nevada's 300,000 acre-foot apportionment is not far off.

At least two other factors should be mentioned in this introductory section: endangered species and Indian tribes. In 1994, the Fish and Wildlife Service promulgated regulations under the Endangered Species Act designating "critical habitat" for four endangered species of fish residing in the Colorado River. Virtually the entire mainstem of the Colorado River, including most of that portion below Lee Ferry, is included as critical habitat for one or more of the species.[12] As a consequence, users in the Lower Division states are faced with addressing the consequences of their water use on endangered species.

And, for the first time, 10 of the 32 tribes residing in the Colorado River Basin organized themselves and demanded participation in Colorado River discussions on an equal basis with the states and the federal government. Calling themselves the Colorado River Tribal Partnership, in June 1992 the tribes submitted to the seven basin states a "Position Paper of the Ten Indian Tribes with Water Rights in the Colorado River Basin." This document announced the tribes' expectation that they would participate fully and equally with the states in any decisions made respecting uses of the Colorado River. Moreover, tribes in Arizona have actively asserted their interests in decisions respecting the management and use of the Central Arizona Project as they relate to the tribes.

There is a growing realization among many stakeholders in the Lower Colorado River Basin that existing arrangements do not adequately serve their current and foreseeable needs. Considerable progress has been made since 1991 in better defining the interests of many of

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[10]The World Almanac and Book of Facts 1995 (Robert Famighetti ed.) at 381.

[11]"1990 Arizona v. California Report" supra n. 2, at 19; "Progress Report No. 16" supra n. 2, at 18.

[12]See 50 C.F.R. § 17.95 (1994).

the key players. Several proposals that would address at least some of these interests have been floated since then, none that has yet come close to gaining acceptance. This Discussion Paper explores a number of the expressed interests of the states, the tribes, and the federal government respecting use of the Colorado River. It looks at various proposals offered to date, beginning with California's "Conceptual Approach" in 1991. Finally, it suggests some elements of a possible approach for putting in place a new generation of water management tools for the Lower Colorado River.

II. "Stakeholder" Interests: One View

The superstructure within which decisions respecting uses of the Colorado River are made is complex, contentious, and jealously guarded — reflecting the intense concern of the basin states for protecting their respective claims to this relatively modest supply.[13] Known collectively as "the Law of the River," this superstructure has reached almost mythic status. Any new proposal relating to use of Colorado River water first is tested for conformity with the existing Law of the River. To be judged not to conform has been the kiss of death.

Change in the Law of the River can occur only in three ways: through litigation, through act of Congress, or through negotiated agreement among the key interests.[14] In the past, Congressional action depended on the ability of the states to work out agreement among their own internal interests and among themselves. The carrot was federal money. In most cases, the common interest in developing the water of the Colorado River with substantial federal support brought the states more or less together and forced the states to settle differences among internal interests. In several instances, particularly involving Arizona's perceived interests, litigation appeared to be the only possible route.

Negotiated approaches without a strong federal inducement are particularly difficult. Any negotiated proposal that would alter the status quo in any significant way must be viewed

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[13]For a more complete discussion of this superstructure, see Lawrence J. MacDonnell & David H. Getches, "Colorado River Basin," in Waters and Water Rights, R. Beck ed., The Michie Co., 1995 [hereafter "Colorado River Basin"].

[14]A fourth possibility that probably would have to come out of a negotiated agreement is to seek changes in the U.S. Supreme Court Decree in Arizona v. California, 376 U.S. 340 (1964).

by all the decision makers in the basin as providing some desired benefits without imposing unacceptable costs. Given the considerable divergence of interests among the existing stakeholders (those presently benefiting from existing uses of Colorado River water or expecting to benefit in the future), there are relatively few proposals likely to meet this test.

This may be one of those times, however, in which the interests of the parties — in this case, primarily in the Lower Division states — match closely enough with available opportunities that negotiated agreement seems possible. Because these interests are key to shaping acceptable proposals, I begin this paper with a discussion of some of the apparent interests of the three Lower Division states and then turn to a discussion of tribal and U.S. interests. In part, this summary is drawn from public statements of individuals representing many of these interests. In addition, I have supplemented this public record with interviews with some of the principal stakeholders.

A. The Lower Division States

There is a long history of conflict and cooperation among the basin states.[15] Agreement on the Colorado River Compact in 1922 was followed almost immediately by years of bitter conflict between Arizona and California respecting their shares of the Lower Division apportionment — a dispute not settled until 1963.[16] Cooperation has emerged primarily when necessary to get Congressional funding for water development projects in the basin. While disputes about state apportionments still exist, they have become secondary to more pressing concerns about the mismatch between expected future uses and the basic individual state apportionments under the Law of the River.[17] The traditional common

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[15]For a good general discussion, see Norris Hundley, Jr., Water and the West: The Colorado River Compact and the Politics of Water in the American West (1975).

[16]The U.S. Supreme Court finally clarified the apportionments of the Lower Division states in Arizona v. California, 373 U.S. 546 (1963). In 1968, Congress made it clear that water taken through the Central Arizona Project was subordinate to California's 4.4 million acre-foot apportionment. 43 U.S.C. § 1521(b).

[17]California, and to a lesser degree Nevada, also are interested in what they see as a even more important mismatch between the Upper and Lower Division apportionments. This issue seems likely to await progress among the Lower Division states respecting future uses of their shared apportionment.

interest in getting federal funding no longer drives efforts at cooperation since such funding no longer appears to be available.

The Lower Division States of Arizona, California, and Nevada share one overriding common bond: their basic allocation of 7.5 million acre-feet per year of consumptive use of water from the Colorado River. They are now faced with the reality that in any given year they can exhaust this entire allocation. The fundamental issue facing these states is whether they can find a commonly acceptable basis on which to accommodate future uses within this constraint. At the same time, they also are interested in opportunities that might enlarge the quantity of Colorado River water available for their consumption.

The Colorado River Lower Basin Technical Committee, established in 1994 to develop proposals for meeting water needs within the Lower Basin, identified several points of basic agreement among the Lower Division states.[18] First, in keeping with prescribed ritual, they agreed that there should be no fundamental change in the Law of the River.[19] Thus, state (and basin) apportionments — whether used or unused — will be taken as fixed, at least for purposes of defining ultimate rights to the water, not necessarily actual uses of the water. As a concomitant, the states agree that any changes of water use under existing entitlements must be voluntary.

There were several other "principles" agreed to in the Lower Basin Technical Committee discussions. For example, "proposed solutions" are to achieve "maximum use of the Lower Basin water supply," a proposition likely to find strong support among the Upper Division states. "Appropriate mitigation" must be part of any solution. "Augmentation" of

[18]The genesis of this group and the proposals it produced are discussed at greater length in section IV of this paper. Its basic mandate is set out in Colorado River Lower Basin Technical Committee, Progress Report, Oct. 11, 1994.

[19]Lower Colorado River Basin Technical Committee, Progress Report No. 2, January 19. 1995 [hereafter "Progress Report No. 2"]. Perhaps a better way to understand this position is to say that, in a negotiated effort, there can be no proposed change in the Law of the River that is not agreed to by all of the states. Nevada, for example, repeatedly asserts the need to increase its apportionment of Colorado River water. clearly asserting the need for a change in the Law of the River.

Colorado River water remains an option of interest to these states though, in a nod to current realities, not in the near term.[20]

Acknowledged "needs" of the three states include:

1. a full Colorado River Aqueduct for Southern California;
2. an increased water supply for southern Nevada;
3. a means to compensate for "inadvertent overruns"; and
4. "drought protection," especially for Arizona.[21]

These needs will be discussed in more detail below in relation to the state to which they apply. The important thing to note here is that the three states all see potential benefits that could result from their collective efforts and that, at least in general form, the primary objectives of the states are explicitly regarded as acceptable by the other states. I turn now to a more detailed consideration of the states' interests.

Arizona

Arizona's interests relating to the Colorado River are less obvious in some respects than those of the other two Lower Division States. Unlike California and Nevada, water users in Arizona do not need more water from the Colorado River — at least, not in the foreseeable future. Indeed, after 50 years of dogged persistence finally produced a completed Central Arizona Project, the Central Arizona Water Conservation District (CAWCD) — the state entity created to operate the project — now is struggling to find users who can afford to pay for the water.[22] At the same time, many interests in the state — particularly the cities — are opposed to interstate transfers of any water from Arizona's Colorado River apportionment. Simultaneously, some existing water users in the state with Colorado River entitlements (e.g., the Cibolla Irrigation District) are interested in directly transferring their use rights to others, possibly in other states.

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[20] Id.

[21] Id.

[22] "Coattails," supra n. 9, at 683-88.

To muddy the situation further, there are 19 Indian reservations in Arizona with potential or quantified reserved water rights; tribes on these reservations are seeking to translate these legal claims into water they can control. Three of these reservations are located along the mainstem of the Colorado River. The Colorado River water entitlements for those three tribes were largely resolved by the U.S. Supreme Court in a series of decisions.[23] In addition, congressional legislation has clarified the reserved rights of other tribes in Arizona not located along the Colorado River.[24] CAP water is an important component for the settlement of these tribal claims. Still unresolved, however, are several potentially major tribal reserved right claims, including those of the Gila River Indian Community and the Navajo Nation.

It appears that the State of Arizona has three overriding concerns that it must balance in developing its Colorado River policy. The first is a deeply felt perception among state leaders that future growth and development of the state depend on maintaining an unencumbered ability to use the state's apportionment of Colorado River water.[25] In particular, this means keeping as much CAP and other Colorado River water available for use by Arizona users as possible. The cities in particular point to the state's groundwater law that requires evidence of an assured water supply for 100 years out into the future.[26] Faced with meeting this requirement, the cities and other development interests within the state believe they must maintain their CAP rights, even if just for future use.[27] Such a view reflects the traditional Arizona law that appropriations of water, once made, remain permanently affixed

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[23]See, e.g., Arizona v. California, 439 U.S. 419 (1979); Arizona v. California, 460 U.S. 605 (1983).

[24]"Colorado River Basin," supra n. 13, at 24.

[25]Rita P. Pearson, "Arizona's Proposed Water Bank: a Management Tool for the Future," 8 Water Strategist 2 (1995).

[26]See Ariz. Rev. Stat. Ann. § 45-576 (1994).

[27]One alternative would be to create a trust fund that would be dedicated to purchases of water and water rights as needed in the future.

to their place of use.[28] For a desert state that relates its future prosperity so directly to the availability of water from the Colorado River and that has shed so much political blood to assure that availability, this powerful attachment to its Colorado River apportionment is perhaps understandable. In a world in which water uses are likely to become increasingly fungible, however, it may not be entirely rational.

Second, and pressing in a somewhat contrary direction, is the significant financial burden attached to paying for the Central Arizona Project. Total construction costs are expected to reach about $4.7 billion.[29] Of this amount, more than half is regarded as "nonreimbursable" — that is, costs borne entirely by the U.S. While the final amount that must be paid by CAWCD remains unsettled, it is likely to be in the vicinity of $2 billion.[30] Under the proposed amortization schedule which spreads out over 50 years, CAWCD would be obligated to pay the U.S. fixed amounts each year, exceeding $80 million in some of the years. Already the costs of paying for CAP water and the associated infrastructure have pushed a few Arizona agricultural water suppliers to bankruptcy.[31] There is something admirable about this willingness to shoulder a major financial burden today to ensure water for tomorrow. The question is: is it necessary?

The third issue concerns resolution of tribal water rights claims. Interestingly, the U.S. — largely on behalf of Arizona tribes — is likely to end up with legal rights to nearly 50 percent of the yield of the CAP. In the context of negotiations between CAWCD and the U.S. to settle a variety of CAP financial issues, the U.S. agreed to pay fixed operation, maintenance, and replacement costs (O&M) until 2020 on the portion of the CAP water

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[28]See Lawrence J. MacDonnell, "Transferring Water Uses in the West," 43 Okla. L. Rev. 119, 126 (1990). The use of water, in fact, is becoming much more flexible and responsive to changing demands. Throughout the West, water is moving through voluntary agreements to new uses as demands shift and change. There is no reason to suppose that Arizona will be any different in this respect.

[29]"Coattails," supra n. 9, at 745.

[30]Negotiations between CAWCD and the U.S. over repayment issues broke down in 1995. CAWCD filed an action in bankruptcy court and the U.S. countered with an action in federal district court.

[31]"Coattails," supra n. 9, at 685-86, 744.

allocated to federal purposes, whether or not the water is used. Arizona wants assurance that the water will only be used within the state.

The tribes, at present, have little direct need for the water. Their interest in obtaining clear entitlements to CAP water is largely so they can have the option to lease this water to other users. The water rights settlements established with Arizona tribes involving CAP water all provide at least limited rights to lease this water for off-reservation use. The base cost of this water to be paid to the CAWCD is a matter of dispute among the tribes. the U.S., and CAWCD.[32]

Clearly, Arizona is counting on the U.S. to help the state settle tribal water rights claims, to ensure that CAWCD bears no obligation to pay for the portion of the facilities attributable to this share of water,[33] to pay also the O&M costs associated with this water, and then — by requiring that the water be used only in Arizona — to assure that it will be available at any time in the future it may be needed by Arizona users. The U.S. holds a fiduciary responsibility towards the tribes, generally requiring it to act in their interest.[34] Congress has enacted several settlement bills attempting to assure the availability of water to certain Arizona tribes as part of meeting their reserved rights claims.[35] The U.S. has diligently sought to assure that CAP water will be legally dedicated to the CAP tribes and that there will be enough water to meet most or all of the tribes' reserved rights claims in Arizona. This commitment to using the CAP to meet tribal water claims in Arizona probably had the

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[32]In October 1994, CAWCD set a price of $80 per acre-foot for CAP water for which the Ak Chin Community holds a contract right. There are few potential buyers of water in Arizona at this price.

[33]Even with more than half of the project costs borne by federal taxpayers there are questions about CAWCD's financial ability to pay the remaining share. Consider CAWCD's plight if the U.S. were to withdraw from its efforts to directly secure CAP water to satisfy the unresolved reserved water rights claims. It would need to find buyers for much of the CAP's annual yield at a price that considerably exceeds the cost of water from other sources. The tribes, of course, would be thrown back into the costly and uncertain Gila River Adjudication to satisfy its claims. On the other hand, the financial burden placed on CAWCD could be intolerable. Absent some sort of bailout directly by the state itself, it is not clear how CAWCD could remain viable. Thus, while as a legal matter CAWCD may not have an obligation to the CAP tribes, as a practical matter it stands to benefit greatly from keeping the tribes in the CAP settlement. This is especially true if the state can assure control over any out-of-state uses of this water.

[34]See generally F. Cohen, Handbook of Federal Indian Law (ed. 1982).

[35]"Colorado River Basin," supra n. 13, at 29-35.

effect of weakening the U.S. bargaining position in CAP negotiations with CAWCD regarding payment obligations.

At least one other option for CAP water is to lease some of it to users in other states. In fact, at one point in 1995 Arizona considered a long-term lease of 60,000 acre-feet to Nevada through its proposed state water bank. Given the present sense shared by Arizona leaders that it must maintain control of its Colorado River apportionment, it is clear that any CAP water made available for even temporary out-of-state use will be controlled by the state. Before long, however, the economic realities of paying for CAP water for which there are no present users may force reconsideration of this position. Such reconsideration would be greatly facilitated by the existence of some kind of Lower Basin banking mechanism of the kind proposed in section VI of this paper.

Still another Arizona concern is the junior priority accorded CAP water under the 1968 Colorado River Basin Project Act. To obtain California's support for Congressional funding needed to construct the CAP, Arizona agreed to subordinate delivery of CAP water to California's full 4.4 million acre-foot apportionment and any other prior perfected rights.[36] In theory it is possible that in a period of sustained drought CAP users might not be able to exercise their entitlements.[37] Since CAP water will become an increasingly important part of the urban water supply in Arizona, there is understandable concern about the reliability of this supply. Given the rather enormous storage capacity to meet the needs of Lower Basin users from the Colorado River, this concern, while real, probably is not particularly pressing.

In short, there are many competing interests in Arizona. For the most part they seem to agree on just two things: keeping control of as much of the state's Colorado River apportionment as possible, and getting the federal government to pay for as much of the CAP as possible. Non-Colorado River Indian tribes in Arizona turn out to be an effective ally in persuading the federal government to take over a major share of the costs of the CAP. So long as the water is restricted to in-state use, Arizona cities — the likely long-term users of

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[36]Colorado River Basin Project Act, Pub. L. 90-537, 82 Stat. 887, 43 U.S.C. § 1521(b) (1968).

[37]Benjamin L. Harding et al., "Impacts of a Severe Sustained Drought on Colorado River Water Resources" in Severe Sustained Drought: Managing the Colorado River System in Times of Water Shortage, 815, 819 (Powell Consortium issue no. 1, 1995).

the water — are more than happy to go along. The state, on behalf of the cities, wants to control water marketing of Arizona water carefully — for in-state and particularly for out-of-state uses. While some agricultural interests and some tribes want at least the option to market their water rights, Arizona has been able to effectively coordinate its various interests so that it has maintained a unified presence to this point. There are some underlying factors that may make this apparent unity harder to maintain in the future, particularly the question of how to pay for the CAP.

California

Historically, California's ever increasing demand for Colorado River water has driven issues in the basin. While that demand continues to increase within the urban sector, the once inviolate domain of agricultural water use finally has opened, and the enormous potential for shifting a portion of the vast quantities of water used in agriculture to urban use now is being tapped.[38]

Nevertheless, urban water needs in the southern part of the state remain an on-going concern. Expectations for supplying a major part of those needs from sources of water in the northern part of the state continue to be frustrated. While recent advances in resolution of water management issues of the Bay-Delta promise to help unlock the gridlock that has frozen the transfer of water out of the Central Valley to the south, security of water supply to cities in the south still depends on assuring a reliable, long-term supply of water from the Colorado River.

The Seven Party Agreement in 1931 divided California's basic apportionment of 4.4 million acre-feet of Colorado River water, giving several agricultural districts the first three priorities up to 3.85 million acre-feet and Metropolitan Water District of Southern California (MWD) the fourth priority to 550,000 acre-feet.[39] For Colorado River water beyond the

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[38]Lawrence J. MacDonnell & Teresa A. Rice, "Moving Agricultural Water to Cities: The Search for Smarter Approaches," 2 West Northwest 27 (1994) [hereafter "Smarter Approaches"].

[39]The Seven Party Agreement is reproduced in Ray Lyman Wilbur & Northcutt Ely, The Hoover Dam Documents (1948) at A479. It is worth noting that reserved rights to Colorado River water for California tribes are not included in this agreement. As decreed by the U.S. Supreme Court in Arizona v. California, California

basic 4.4 million acre-feet that may be available to California, MWD (together with San Diego) and the agricultural districts were given priority claims. As mentioned, Reclamation has entered into contracts with these California entities including MWD for delivery of up to 5.2 million acre-feet. MWD constructed an aqueduct taking water out of the Colorado River at Lake Havasu and carrying it across the state for use in southern California. The capacity of the aqueduct is about 1.3 million acre-feet of water per year.

Between 1989 and 1993, California users consumed an average of about 4.9 million acre-feet of Colorado River water each year, including over 5.2 million acre-feet in 1990. MWD in particular is dependent on taking Colorado River water beyond California's basic 4.4 million acre-foot per year apportionment. Thus, MWD has an overriding interest, on behalf of the millions of urban users residing in the southern part of the state that depend on water it supplies, to find a way to secure a full aqueduct, 1.3 million acre-feet, in the short run and, perhaps, to make it possible to enlarge its urban supply through a second aqueduct at some future time.

The agricultural interests presently dominating California's use of Colorado River water have mixed views about the potential effects of meeting urban demands with water from the Colorado River. Historically, these interests have been adamantly opposed to the transfer of any agricultural water to urban use. A major breakthrough occurred when the Imperial Irrigation District (IID) and MWD finally reached an agreement in 1989 by which water conserved through improvements in the water delivery and use systems of IID would be transferred to MWD. In significant part, IID agreed to this arrangement because it faced a very real threat by the State of California to reduce its water entitlement on the basis of waste.[40] Nevertheless, agreement was reached and, after working out the concerns of the

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tribes hold diversion rights of 156,000 acre-feet and consumptive use rights of approximately 90,000 acre-feet. 439 U.S. at 428-35. This priority comes ahead of MWD's 550,000 acre-foot allocation established in the Seven Party Agreement.

[40]Brian E. Gray, "Water Transfers in California: 1981 - 1989," in 2 The Water Transfer Process as a Management Option for Meeting Changing Water Demands, Natural Resources Law Center Research Report, ch. 2 at 38 (1990).

Coachella Water District, the first in-state reallocation of California's share of Colorado River water occurred.[41]

Since then, MWD worked out a short-term arrangement with the Palo Verde Irrigation District under which lands within the district were fallowed (taken out of irrigation) and the water that would have been consumptively used on those lands was transferred and banked for future use by MWD.[42] Other such arrangements seem almost certain to develop through time so that the potential for meeting a significant share of the increasing urban water demands in Southern California through reallocation of California's basic 4.4 million acre-foot apportionment is very good.

Unfortunately, it may not be enough. California users have become accustomed to using well over the state's basic apportionment. This dependency developed in a period when the Upper Division states were using far less than their apportionment of 7.5 million acre-feet per year and other Lower Division states were not using their full apportionments. So long as total Lower Division consumption remained below 7.5 million acre-feet, the Upper Division states uneasily acceded to California's use. In fact, California also has the opportunity under the Law of the River to use up to 50 percent of any Lower Division Colorado River water declared "surplus" by the Secretary of the Interior. To this point, however, the Secretary has never made a formal declaration of the availability of surplus water. Rather, Interior has authorized California's uses beyond 4.4 million acre-feet based on a provision of the Supreme Court decree in Arizona v. California authorizing the Secretary of the Interior to allow a state to use the "unused entitlement" of another state on a temporary basis.[43]

For obvious reasons California wants to get clarity respecting the circumstances under which it can permanently and reliably use water beyond its 4.4 million acre-foot apportionment. Since the availability of unused apportionment water in the Lower Division

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[41]Discussions are underway at present for a similar kind of arrangement by which water historically delivered to IID would be made available to the San Diego County Water Authority. Western States Water, issue no. 1116, October 6, 1995.

[42]"Smarter Approaches," supra n. 38, at 51-52.

[43]Arizona v. California, 376 U.S. 340, 343(1964).

will continue to decrease over time, California wants the U.S. to clarify the circumstances under which it would formally declare the availability of a "surplus".[44] California believes there is generally so much water available in the system that surplus declarations would be very common. If it succeeds in this objective, and if MWD can work out a shifting of priorities between MWD and agricultural users so that MWD's entitlements fall largely or entirely within the 4.4 million acre-foot portion, then MWD's interests in improving the security and reliability of its supply will be met. Agricultural users growing annual crops would then take some part of their deliveries based on surplus declarations, perhaps under an arrangement by which they would fallow lands during years in which surplus water was not available. Alternatively, if agreement could be reached on means by which unused apportionment water could be legally transferred on a multi-year basis, at least some of these agricultural water needs could be met through transfers of the kind described in section VI of this paper.

One of the thorniest issues for California will be working out arrangements with the state's agricultural community. The Colorado River water agricultural users in California are a diverse group. In general, the agriculture dependent on Colorado River water in California is profitable — in some cases, very profitable. Crops range from high-value fruit and nut production to vegetables to lower-value alfalfa. To be sure, there are marginal farm lands that will be permanently retired in the reallocation process, but, for the most part, this is an agricultural economy that will continue to be a productive and valuable source of crop production into the future.

Understandably, those dedicated to maintaining their agriculturally-based livelihoods are uneasy about actions that would permanently move water out of agriculture or that would make the supply of water less secure. Finding "smarter approaches" that will satisfy these concerns is a difficult but important challenge. Fortunately, considerable progress now is

[44]For a discussion of the meaning of the word "surplus" in the context of the Colorado River, see "Colorado River Basin," supra n.13, at 48-49.

being made in developing creative approaches that better address the long-term interests of agriculture while making water available for new uses.[45]

Nevada

Superficially, Nevada's interests seem the most straightforward: getting more water from the Colorado River. Starting several years ago, local and state officials launched a major effort to focus attention on the rapid growth in southern Nevada and the related need to increase the usable water supply in this part of the state. The initial foray of the Las Vegas Valley Water District, asserting large claims to groundwater in outlying rural areas, succeeded at least in getting everyone's attention. Before too long, there was general agreement that this approach was not a sensible way for Las Vegas to support its growth. Inevitably, attention focused largely (but by no means exclusively) on the Colorado River situated only a few miles from Las Vegas.

In 1922, when the Colorado River Compact was being negotiated, Las Vegas was hardly on the map. No one foresaw the growth that the gaming industry and the development of retirement communities would bring to southern Nevada. Apportionment of 300,000 acre-feet of consumptive use to Nevada from the Lower Division's allocation probably seemed adequate to all concerned in the 1920s.

In fact, Nevada already diverts in excess of 300,000 acre-feet of Colorado River water each year. However, because approximately one-third of its diversions presently return to the river after treatment, Nevada's beneficial consumptive use remains well below its allocated 300,000 acre-feet. Nevada's demand projections for Colorado River water indicate that, even with increased conservation, it will exceed its apportionment sometime around 2010. Given the considerable lead time necessary to develop firm water supplies, water interests in the southern part of the state express a sense of urgency about getting explicit assurances of where this additional water supply will come from.

Water and related interests in southern Nevada have made a number of important strides towards getting their own house in order so that Nevada can negotiate from a unified

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[45]Such approaches are discussed in "Smarter Approaches," supra n. 38.

position. Perhaps most importantly, the various urban water suppliers and waste water agencies came together to form a single agency, the Southern Nevada Water Authority (SNWA), with full management control over all raw water supplies. SNWA has responsibility to plan for and provide water to all new uses in the area. In addition, to make better use of existing supplies (and to meet a growing public relations problem) SNWA instituted an active program of water conservation and reuse. It created a shared shortage agreement among all water suppliers. SNWA also established a contract with the Secretary of the Interior for return flow credits.

The Colorado River Commission of Nevada (CRCN) and SNWA are following an interesting strategy of announcing to the world that southern Nevada is in the market to buy water and then sitting back to see who shows up. Following the adage that water flows towards money, there have been numerous proposals to CRCN and SNWA, ranging from water in "baggies" from Alaska, to an alleged underground river ("Wally Spencer's river"), to desalinization of water in Baja California.[46] In addition, not surprisingly, there have been several proposals involving water from the Colorado River. From the Upper Basin, oil shale interests in Colorado holding conditional water rights have put together a plan for developing the associated water at a site on Roan Creek and delivering that water to Nevada. More recently, Utah suggested it might be willing to enter into an agreement for "deferring" use of up to 200,000 acre-feet of its Colorado River apportionment in return for payment of $200 per acre-foot. Within the Lower Division, Arizona proposed that 60,000 acre-feet of its unused apportionment be placed on the table. And, tribes in both basins have expressed interest in possible transactions involving their water rights.

Thus, southern Nevada now finds itself in the position of being able to consider a number of possible water supply options, looking for the best deal it can find. As a hedge, the SNWA is moving ahead with its plans to develop Nevada's rights to water from the Virgin River. The Virgin River originates in Utah, winds its way through a corner of Arizona, and then heads into Nevada where it joins the Colorado River at Lake Mead. In 1994, the Nevada State Engineer approved applications by SNWA to appropriate 700 cubic

[46]Interview with Douglas Beatty, Colorado River Commission of Nevada, Nov. 9, 1994.

feet per second of water for storage in a 113,000 acre-foot reservoir for transport to Las Vegas. SNWA would prefer to store the water in Lake Mead and withdraw it through its existing and planned pumping facilities, but possible conflicts with the Law of the River block such an approach at present. Various entities have challenged Nevada's right to develop Virgin River water, and the issue is certain to go through protracted litigation unless it can be resolved through negotiations. Assuming Nevada is in fact entitled to develop water from the Virgin River, it can weigh offers of other water supplies in relation to the expected costs of obtaining as much as 190,000 acre-feet of water from the Virgin.

What are southern Nevada's foreseeable water needs? Certainly no two people are likely to have the same view. It is hard to believe that Las Vegas will continue to grow at the six percent per year rate experienced in recent years.[47] But it does seem likely to continue to grow. From all available evidence, the factor determining southern Nevada water demand likely will be price more than availability of water.

B. The Tribes

As mentioned, ten of the tribes with direct claims to mainstem or tributary Colorado River water have organized themselves into the Colorado River Basin Tribal Partnership. One result is that these tribes are now more effectively able to participate in the various discussions involving the Colorado River. Even so, they tend to get overlooked. For example, they were not invited to the discussions of the Lower Basin Technical Committee until after the process had begun.

While some of the tribes have formed a partnership, there are important differences between tribes in the Upper and Lower Basins, and even among tribes in each area. The five mainstem tribes in the Lower Basin hold reserved water rights quantified by the U.S. Supreme Court in the Arizona v. California litigation. In total, the five tribes hold rights to about

[47]Indeed, the Wall Street Journal reported that casino business in Las Vegas is slowing markedly in 1995. Such a slowdown in business may have an effect on the future growth in this area. Bruce Orwall, "Las Vegas Sees its Growth Bubble Burst," Wall Street Journal, September 26, 1995, A2, col 2.

912,000 acre-feet of water from the Colorado River.[48] Roughly two-thirds of this water is presently being diverted for use on their reservations.

The five Upper Basin tribes have all at least partially settled their reserved water rights claims and are interested in receiving the benefits associated with the water rights they now hold. The settlements with the Northern Ute Tribe in Utah, the Southern Ute Indian Tribe and the Ute Mountain Ute Indian Tribe in Colorado, and the Jicarilla Apache Tribe in New Mexico made off-reservation use of their water rights by users outside the states in which their reservations are located contingent on the ability of other state water right holders to do the same. At least for the foreseeable future, such out-of-state transfers appear unlikely. Only a portion of the Navajo Nation's reserved water rights has been quantified to date, and these rights are not expressly authorized for off-reservation use.[49]

At a minimum the tribes want to use water on-reservation to the extent there are economic opportunities to do so. At the moment such uses appear limited at best. In addition, at least some of the tribes would like the option to lease their rights for use off-reservation. There are a number of potential legal hurdles in the way of off-reservation leasing which the tribes would like to address through the negotiation process. One large issue concerns the acceptability of marketing water that has never been used — so-called unused entitlements. California in particular is opposed to allowing the marketing of these rights as "wet" water since, in effect, this is some of the water it has been using since 1953.

C. The United States

During most of this century, the United States has been deeply involved in developing and managing the water resources of the Colorado River. It has made major investments throughout the basin in the construction of large-scale water storage and delivery facilities, often coupled with hydroelectric power generation facilities. The Bureau of Reclamation

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[48]Colorado River Indian Tribes : 717,148 AF; Chemehevi Indian Tribe: 11,340 AF; Ft. Mohave Indian Tribe: 129,767 AF; Quechan Indian Tribe: 51,616 AF; and Cocopah Indian Tribe: 2,744 AF. Position Paper of the Ten Indian Tribes with Water Rights in the Colorado River Basin, June 1992 at 6-7 [hereafter "Ten Tribes Position Paper"].

[49]These settlements are discussed in "Colorado River Basin," supra n. 13, at 34-35.

operates this extensive network of dams and power plants along the river and on major tributaries. Because the water resources of the Colorado River are shared among seven different states as well as the Republic of Mexico, Congress and the U.S. Supreme Court have given the Secretary of the Interior an unusual degree of authority respecting water operations, and even water uses, in the basin — particularly in the Lower Division.

Initially, the role of the U.S. focused largely on providing the financial and technical wherewithal necessary to construct dams and related facilities on the mainstem of a large river that would, in turn, make it possible for irrigators in the basin states to more completely use the river's water. Over time the U.S. and the power users came to enjoy the financial benefits produced by the large hydroelectric power generation facilities at the mainstem dams and increasingly sought to operate these facilities in a manner that would maximize power revenues. In the 1944 Treaty with Mexico, the U.S. committed to deliver 1.5 million acre-feet of water per year at the international border. In 1973, the U.S. expressly agreed to deliver water of approximately the same quality, in terms of total dissolved solids (salts), as was diverted for use in the Imperial Valley at Imperial Dam. Thus, the U.S. holds both a water quantity and quality obligation to Mexico. More recently, the U.S. has become concerned with fulfilling the reserved water rights claims of the various Indian tribes in the basin. And, even more recently, the U.S. has become deeply involved in addressing endangered species problems caused or exacerbated by water development in the basin.

At present the U.S. appears to be pursuing several different objectives that relate to the above described interests. Reflecting its greater emphasis on water management, the Bureau of Reclamation is actively promoting more flexible use of the Lower Division apportionment to meet changing needs. Thus, it has offered potential mechanisms that would allow interstate water leasing under the supervision of the Secretary of the Interior. To this point, some interests within the states have resisted such an active role by the U.S. but, ultimately, the states and the tribes are going to need the active participation and support of the U.S. in any transactions involving Colorado River water.

In effect, the U.S. is the water master for the Lower Colorado River. All water deliveries from the river are based on contracts with the Bureau of Reclamation which the Bureau is obligated to administer and enforce. Changes in water deliveries must go through

the Bureau for approval. In this process the U.S. will likely be concerned with potential financial implications to the U.S. Treasury of any such change. It must consider implications for its obligations to Mexico. It will be concerned with any potential adverse effects on tribes. And it now must decide what its obligations are with respect to species protected under the Endangered Species Act.

Finally, the U.S. is attempting to get resolution of a long-time administration problem: what is the maximum entitlement of each of the five districts in California that hold an aggregate priority to 3.85 million acre-feet of water per year as part of California's 4.4 million acre-foot apportionment. Water entitlements for these districts are described in terms of number of irrigated acres, not as a maximum quantity of deliverable water. Reclamation has not been able to manage diversions by these districts that exceed, in aggregate, 3.85 million acre-feet in any given year. Moreover, as MWD continues to negotiate arrangements with these entities for the transfer of a portion of their Colorado River water entitlements, it becomes necessary to know what the remaining entitlement is. At present, because such a quantification has never been agreed to by the parties, their delivery rights, and thus their potential transfer rights, are uncertain.

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With this survey of the interests of the major players in the present efforts to develop new arrangements in the Lower Basin,[50] I turn now to a summary and discussion of the various proposals that have been offered since 1991 and attempt to point out why none has yet been able to capture a sufficient number of the interests and concerns outlined above to gain acceptance.

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[50]Conspicuous by their absence from the various efforts underway in the Lower Basin to address future water needs are the environmental interests. One explanation for the lack of any special representation by environmental interests is that they should be represented by the states, the federal government, and the tribes in the same manner that other special water interests are represented. Assistant Secretary Rieke pushed hard to get key members from the environmental community represented in the Technical Committee process, an effort that never bore fruit. Telephone Conversation with Elizabeth A. Rieke, Assistant Secretary for Water and Science, U.S. Dep't of the Interior (Feb. 1995). Presumably, environmental groups will be involved in the efforts underway to develop a plan for addressing the needs of endangered species in the Lower Basin.

III. Proposals Since 1991

This section of the paper addresses seven individual proposals concerning use of Colorado River water in the Lower Basin offered by the various parties in recent years. It begins with California's "conceptual approach" in 1991, moves to the Bureau of Reclamation's first attempted rulemaking in 1992, then discusses the Ten Tribes' Position Paper in 1992, moves to the Bureau's second set of proposed regulations in 1994, then the Nevada proposal, the Arizona proposal, and the Ten Tribes' proposal which followed later that year.

A. California's Conceptual Approach

As mentioned, 1991 was a pivotal year for the Lower Colorado River. The three Lower Division states had consumed more than 7.5 million acre-feet in 1990 and had requested a total delivery from the river in 1991 of 7.9 million acre-feet. In what has been described as a "precedent setting" arrangement,[51] the Secretary of the Interior authorized the delivery to California of an amount of water that allowed the Lower Division to exceed its basic apportionment.[52] Since the understanding was that such water would be paid back, the Secretary's authorization has been characterized as "the assertion of a power, impliedly granted by the BCPA [Boulder Canyon Project Act], to in effect 'loan' stored water to a contractor against subsequent 'repayment' of the borrowed water."[53]

Because of the extraordinary drought in California at the time, the other basin states went along with this arrangement. Governor Romer of Colorado, however, conditioned his agreement by requesting that California commit itself to a process by which it would "bring its consumption of water from the Colorado River down to the 4.4 million acre feet allocated

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[51]"Lindgren," supra n. 6, at 25-28.

[52]Letter from Secretary of the Interior Manuel Lujan, Jr. to Governor Garrey E. Carruthers, October 23, 1990.

[53]"Lindgren," supra n. 6, at 25-27 to 25-28.

to California under the Law of the River."[54] In response, California developed a conceptual paper outlining a proposed approach to reducing its diversions of Colorado River water.[55]

As summarized by Lindgren, the proposal contained four essential elements:

1. California would phase out its consumptive uses above 4.4 million acre-feet per year by 2011.
2. California would be allowed to continue its uses in excess of this amount until then, and operating criteria for system reservoirs would be developed that would guarantee MWD the right to take 1.3 million acre-feet of water annually through its aqueduct until 2010.
3. An interstate escrow account would be established, and MWD would make payments for any water it diverted that caused the aggregate consumption in the Lower Division to exceed 7.5 million acre-feet per year. Funds from the escrow account would be dispersed to all seven basin states according to a specified formula.
4. An interstate water bank would be established through which Colorado River water historically consumptively used could be transferred to users in other states. Each state would handle water coming from uses in that state, purchasing the water at a uniform price established by the seven states. The bank would then make the water available for sale to users in the seven states according to a formula allocating that water according to the state's share of the basic Colorado River apportionment.

This pathbreaking proposal launched the discussions that are continuing at this time.

B. The First Reclamation Proposal

The Bureau of Reclamation came out shortly thereafter with a "Discussion Paper" intended to offer an alternative mechanism for addressing California's water demands.[56] It proposed a scheme by which California could continue to take unused Lower Division apportionments up to the 7.5 million acre-foot cap. If, in any year, California did not require

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[54]Letter from Governor Roy Romer to Governor Pete Wilson, February 21, 1991.

[55]Colorado River Board of California, "Conceptual Approach for Reaching Basin States Agreement on Interim Operation of the Colorado River System Reservoirs, California's Use of Colorado River Water Above Its Basic Apportionment, and Implementation of an Interstate Water Bank" (Aug. 28, 1991) [hereafter "California's Conceptual Approach"].

[56]U.S. Bureau of Reclamation, "Discussion Paper: Lower Colorado River Basin: Water Banking Concept for Colorado River Water," draft dated Oct. 4, 1991, cited in "Lindgren," supra n. 6, at 25-32.

the full amount, the balance would be banked for the credit of the three states in proportion to their share of the Lower Basin apportionment. For discussion purposes, the paper suggested a maximum bank limit of 4.5 million acre-feet, with the water divided roughly equally into two categories: "bottom" water not subject to spills or flood control releases and "top" water that would be the first to spill. Banked water could be transferred among the states. Any uses within a state causing the total Lower Division uses to exceed 7.5 million acre-feet would be automatically deducted from that state's banked water.

Again, while the proposal did not attract widespread consideration, it did make clear the Bureau of Reclamation's intention to play an active role in developing ways to help the states utilize their basic apportionments to meet their changing needs.

C. Ten Tribes' Position Paper

The tribes' paper, issued in June 1992,[57] is significant primarily for its effect in putting the basin states on notice that the tribes expected to participate fully in any decisions made respecting use of the Colorado River. In particular, the paper noted the total omission of any reference to tribal interests in the California Conceptual Approach despite the significant entitlements to use of Colorado River Basin water held by tribes. One direct consequence of the creation of the Colorado River Tribal Partnership is that the ten tribes were invited to participate in meetings of the seven basin states (thereafter referred to as the "7/10" meetings).

In the position paper, the tribes assert that their long-run interest is to utilize their water rights on-reservation. At the same time, at least some members of the partnership expressed a willingness to lease water available under tribal water rights for use off-reservation. Only the most skeletal aspects of a proposal are presented in the paper. Each tribe ("with the assistance and cooperation of the States") would engage in an assessment of water that would be available for off-reservation use. Leases would be negotiated directly between "[t]he affected parties." Leases would have to be approved by the seven states, the

[57]"Ten Tribes Position Paper," supra n. 48.

tribal partnership, and the Secretary of the Interior — "principally" to assure protection of water right allocations.[58]

Two dominant concerns emerge clearly from a reading of the paper. One is a determination to obtain economic benefits associated with the tribes' existing and future legal control of the use of Colorado River water. A second, related concern is to protect the tribes' unused entitlement and to assure that the water potentially available under this entitlement is not regarded as freely available to solve California's water needs or the instream flow needs of endangered fishes.

D. Bureau of Reclamation Proposed Regulations

The next proposal came from the Bureau of Reclamation in May 1994.[59] It came in the form of "informational copies" of proposed regulations, nearly 90 pages long plus a 25 page appendix — a substantial trial balloon. The proposed regulations covered a number of significant issues, including an assertion by the U.S. of its right to review existing uses of Colorado River water under contracts with the Bureau of Reclamation to assure "reasonable" beneficial use and a requirement that all entitlement holders prepare a water conservation plan; a policy for regulating well pumping along the Lower Colorado River; procedures allowing transfers of Colorado River water used under contract with the Bureau; the creation of a federally-operated water bank utilizing storage in Lake Mead; and off-reservation leasing of tribal water rights. I focus here on the water marketing-related provisions.

The proposed regulations outlined procedures by which holders of entitlements to use Lower Colorado River water could transfer, exchange, or lease those entitlements to another.[60] *Transfers* refer to *permanent* changes in the entitlement and are restricted in use to the state in which the entitlement presently exists.[61] The quantity of water is limited to

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[58]Id.

[59]U.S. Bureau of Reclamation, "Draft Regulations for Administering Entitlements to Colorado River Water in the Lower Colorado River Basin," May 6, 1994 [hereafter "Draft Regulations"].

[60]Id. §§ 415.7, -.8.

[61]Id. § 415.7(c)(1).

the "historical consumptive use" during the preceding five years. Mitigation or compensation is required for "third-party impacts" as determined by the Regional Director of the Bureau of Reclamation. For transfers that would remove water from agricultural lands, contractual commitments for "permanent management" of the lands are required. A new water delivery contract likely will be required. The procedures for *exchanges*, which can be either temporary or permanent, are essentially the same and are also restricted to the entitlement state.[62]

Leases for all or part of an entitlement would be permitted outside the existing authorized place of use — potentially even interstate — for a limited time.[63] Water available for leasing could come either from reductions in historical uses (during the preceding 5 years) made available through "conservation practices" or from temporary land fallowing.[64] The transferable quantity of water would be determined by the Regional Director, and would be preceded by an analysis by a "Verification Committee."[65] The lease could be for a term up to 50 years, with the possibility of a renewal. The original entitlement holder would be required to maintain ownership of the lands on which the water had been used during the term of the lease and to guarantee their "permanent management."[66] The parties to the lease must commit to mitigate or compensate for third-party impacts. For purposes of accounting for the use of the water under the Law of the River, the proposed regulations stated that the lease itself would be regarded as a beneficial consumptive use and charged to the state in which the original entitlement is held.

The proposed *water bank* would utilize the storage capacity of Lake Mead to hold banked water.[67] Water potentially available for banking is limited to that "conserved by

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[62]Id. § 415.7(d).

[63]Id. § 415.8.

[64]Id. § 415.8(c).

[65]Id.

[66]Id. § 415.8(d).

[67]Id. § 415.23.

extraordinary conservation measures or made available through land fallowing."[68] Conserved water is carefully defined to be "water within the limit of an entitlement which has been put to historical beneficial use and saved as a result of specific conservation measures which are identifiable, quantifiable, and verifiable."[69] Moreover, it is water that would have been consumptively used or otherwise lost from availability for beneficial consumptive use. The quantity of conserved water must be confirmed by a verification committee, but the amount of bankable water is "subject to the discretion of the Regional Director."[70] Banking transactions involving water obtained from land fallowing are limited to a term of no more than 50 years.[71] Management of idled lands for weed control and dust suppression is required.[72]

Water banked in Lake Mead would be subject to a first-to-spill status.[73] An evaporation charge would be assessed against banked water. Banked water held in Lake Mead would not be considered in making surplus or shortage determinations or in meeting the equalization objective between Lake Powell and Lake Mead.[74] Reclamation would handle the accounting for managing the banked water.

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[68]Id. § 415.23(d)(2).

[69]Id.

[70]Id. §§ 415.23(d)(1), -(d)(2)(iii).

[71]Id. § 415.23(d)(3).

[72]Id. § 415.23(d)(4).

[73]Id. § 415.23(e).

[74]The Colorado River Basin Project Act of 1968 directed the Secretary of the Interior to develop long range operating criteria for Hoover and Glen Canyon Dams, as well as for the other facilities authorized by the act. 43 U.S.C. § 1552, 82 Stat. 900, Pub. L. 90-537, Section 602 (a). In general, water is to be released from Lake Powell to meet treaty obligations to Mexico and to provide 7.5 million acre-feet per year of water to the Lower Division. In addition, water is be released "to maintain, as nearly as practicable, active storage in Lake Mead equal to the active storage in Lake Powell...." One effect of this "equalization" provision is to move more water down to the Lower Division than would occur under a system meeting strictly the minimum Upper to Lower Division obligations. For a more complete discussion, see Lawrence J. MacDonnell, David H. Getches, and William C Hugenberg, "The Law of the Colorado River: Coping with Severe Sustained Drought," 31 Water Resources Bulletin 825, 831 (1995).

The buying and selling of banked water would be handled directly by the holders of Colorado River water use entitlements and those wishing to use the water.[75] Purchasers of banked water may include entities not presently holding Colorado River entitlements. Intrastate transactions would need only to comply with guidelines; interstate transactions require approval of the Regional Director.

As with leases, the banking of water would be regarded as a beneficial consumptive use for purposes of the Law of the River and would be charged against the entitlement holder's use. Subsequent use would "no longer be subject to any Lower Basin priority system or the Decree apportionment of any State."[76]

In a lengthy "supplementary information" comment preceding the proposed regulations, the Department of the Interior asserts that Indian tribes holding decreed Federal reserved water rights in the Colorado River are "entitled" to participate in the leasing and water banking programs involving temporary uses both on and off the reservation.[77] It finds Congressional authority for off-reservation leasing of tribal water in the Lower Colorado River in general statutory provisions authorizing tribes to lease their lands with the approval of the Secretary of the Interior and providing the Secretary with substantial discretion in supervision of Indian affairs, and in the broad discretion granted the Secretary to manage the waters of the Lower Colorado River articulated by the U.S. Supreme Court in the 1963 Arizona v. California decision. A suggested mechanism for handling leases of tribal water rights is a "deferral agreement" whereby the tribe (or any other entitlement holder) would agree to defer the exercise of its right to use some specific quantity of water so that the water could instead be used by another entity. The question of whether such a deferral agreement would be considered a beneficial consumptive use, chargeable against the apportionment of the state in which the reservation is located, is left to later consideration.

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[75]"Draft Regulations," supra n. 59, § 415.23(f).

[76]Id. § 415.23(h).

[77]Id. at 8-19.

Reclamation agreed to hold off publication of the proposed regulations in the Federal Register pending the outcome of the Lower Basin discussions.[78] Without doubt, this very substantial proposal motivated Nevada and Arizona to come up with their own proposals which, in turn, precipitated the Technical Committee discussion process. The Department of the Interior, it was clear, was prepared to assert leadership to facilitate interstate marketing of Colorado River water in the Lower Division, leadership that would give the Bureau of Reclamation a major role in managing the transactions. Faced with this assertion of readiness to act, the Lower Division states responded quickly.

E. The Nevada Proposal

Nevada's initial proposal actually preceded the release of the Bureau's proposed regulations but likely was precipitated by their imminent arrival. The central feature of the Nevada proposal was a water bank that would be run by a commission composed of representatives of the three Lower Division states.[79] Each state would have equal voting power, and the costs of the commission and the bank would be borne equally by the three states (supplemented by charges on transactions). The bank would be the "exclusive instrument" through which Colorado River water would be acquired and made available to interested users in other states.[80] Pricing of water would be managed administratively. Mitigation issues associated with bank transfers would be handled through payments out of accounts funded by charges imposed on bank transactions. The Bureau of Reclamation would, under a cooperative operating agreement, manage its facilities as necessary to implement banking activities. And the tribes are welcomed as potential transactors in the bank.[81]

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[78]Memorandum from Lawrence F. Hancock, Regional Director, U.S. Dep't of the Interior, Bureau of Reclamation, to Colorado River Water Users, et al. (Nov. 1, 1994).

[79]"Nevada's Approach to a Lower Division Regional Solution," April 29, 1994.

[80]Id.

[81]Id. at 4.

In an "amplification" of its proposal offered in July 1994, Nevada sought to condition sales of bank water by requiring that potential purchasers show "demonstrable need" for the water.[82] In addition, the "state of origin" could challenge a proposed interstate transfer by demonstrating that it has a need for the water. Some "mechanism" might be appropriate to address a case in which such a need became apparent after the transfer occurred. And, there should be "safeguards against hoarding and speculation."[83]

The bank would be empowered to purchase water supplies from any source, even outside the basin. Unused entitlements, including quantified but unused tribal rights, are explicitly identified as one potential source of water.[84] Three separate types of water supply arrangements from the bank are outlined: short-term, long-term, and emergency. Short-term agreements might extend up to 10 years. Long-term agreements, probably largely for municipal needs, might be for 100-year-periods and would be supported by pooling together different sources of bank water.[85]

Considerable attention is given to the matter of funding the bank.[86] In addition to assessments upon the three states, the amplified proposal suggests the possibility of assessments against purchasers. The amplified proposal also allows for the possibility of some form of differential assessments rather than just the uniform assessment suggested in its initial proposal. A second source of revenues would be net revenues to the bank from transactions. Third, the proposal suggests the issuance of bonds. Revenues from transactions are expected to be the primary funding source. The proposal suggests an up-front transaction fee and an annual operating fee. Other possibilities are discussed as well. With respect to mitigation responsibilities, the proposal notes that "the interstate bank's obligation for

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[82]"Amplification of Nevada's Approach to a Lower Division/Basin Regional Solution," July 8, 1994, at 3.

[83]Id. at 4.

[84]It is suggested that the priority of these rights may have to be changed (made more junior) if they are acquired by the bank. Id. at 5.

[85]Id. at 6.

[86]Id. at 7-10.

mitigation must be carefully defined, so that the effects being mitigated are truly those associated with an interstate bank transaction."[87]

F. The Arizona Proposal

On July 14, 1994, Arizona came out with its own water bank proposal.[88] Distinguishing the Arizona proposal was its focus on creating an Arizona state bank which would have exclusive authority to make water subject to Arizona state water rights and its Colorado River apportionment available for use in either California or Nevada. The bank would be run by the Director of the Arizona Department of Water Resources under statutory authority granted by the state legislature. In addition to empowering the bank to obtain water supplies and to enter agreements necessary to make contracts with the Secretary of the Interior and agencies in California and Nevada for the use of this water in those states, the legislature would need to explicitly authorize the director to agree to "forbear" from diverting that portion of Arizona's Colorado River apportionment.[89] Such water could then be delivered for use in the other states as unused apportionment under Article II(B)(6) of the Decree in Arizona v. California.[90]

There is some uncertainty respecting the sources of water that could be placed into the Arizona water bank. Initially, the proposal seems to suggest that the bank will obtain only Colorado River water — available either as underground storage credits, by voluntary land fallowing, or as "excess CAP water for underground water storage."[91] Then it mentions water from Arizona Indian Tribes, from irrigation districts, or from individual farmers obtained through land fallowing programs with no suggestion that this water must be derived

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[87] Id. at 11.

[88] "Arizona Water Bank Proposal," July 14, 1994.

[89] Id. at § III.D.

[90] 376 U.S. 340, 343; "Colorado River Compact," supra n. 4, at 442.

[91] "Arizona Water Bank Proposal," supra n. 88, at § III.B.1.

from Colorado River entitlements.[92] No more than 20 percent of the irrigated acreage either within the boundaries of the district or held by the farmer can be fallowed in any one year. Water obtained from land fallowing will not be delivered to the interstate user in any year in which a shortage is declared on the Colorado River.

The Arizona proposal explicitly recognizes the unusual authority of the Secretary of the Interior respecting water management in the Lower Colorado River, concluding that [his] the Secretary's participation in developing an interstate arrangement is vital. Specifically, the proposal suggests that the Department of the Interior adopt rules supporting the Arizona bank approach, rules that recognize the ability to make temporary interstate transfers of water provided by a state bank as "unused entitlement" and that clarify any other conditions that might be imposed on such transfers. According to the Arizona proposal, the rules also should clarify that other unused entitlement water would potentially still be available for use by the Lower Division states.[93]

The Arizona proposal outlines in very general terms the contents of both the agreements necessary for interstate transfers of water.[94] Apparently, the particulars would be determined through either subsequent legislative requirements, water bank regulations, or negotiations among the parties, or some combination thereof. Agreements with water providers are to address mitigation of adverse local economic impacts and environmental impacts and procedures for monitoring land fallowing agreements.

The Arizona proposal states clearly that the full costs of operating the bank should be covered through charges levied on those purchasing water from the bank.[95] It recognizes the need for some legislative appropriation to get the bank started, however. It suggests some annual minimum payment from all bank "customers" whether or not they purchased water in that year. The proposal suggests that the charges for bank water could vary, based on such

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[92]Id. §§ III.D.2., -.3.

[93]Id. § V.F.

[94]Id. § VI.

[95]Id. § VII.A.

things as the cost of supplying the water and the value of the proposed use. As an example, it suggests that the rates for short-term contracts could be different from long-term contracts.[96]

The proposal suggests that no more than 200,000 acre-feet of Arizona's entitlement would be available for interstate leasing: 100,000 each for California and Nevada. Moreover, long-term contracts would be limited to a maximum of 50 years, with a conditional right of renewal for another 50 years.

G. The Tribes' Water Bank Proposal

The last in our group of proposals to be reviewed is the one offered by the Colorado River Basin Tribes Partnership in October 1994.[97] Two separate banks are proposed: one for the five Lower Basin tribes and one for the five Upper Basin tribes. This recognizes the additional, unresolved issues associated with interstate transfers of water from the Upper Basin and makes it possible for the Lower Basin tribes to participate directly in any Lower-Basin-only water marketing scheme. Each bank is free to decide whether it prefers to have the transfer transactions managed directly by the bank or whether the users may negotiate their own leases.[98]

Banked water would come from unused tribal entitlements, from conserved water, and from water available because of land fallowing or changes in cropping patterns. The proposal specifically rejects the Nevada concept that the priority of unused tribal entitlements might be lowered as part of a banking transaction; it urges elimination of the distinction in marketing discussions between used and unused entitlements.[99]

The maximum term of a water lease would be 99 years. The tribes expressed a willingness to develop procedures with the states for determining any adverse effects

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[96]Id. § VII.D.

[97]The Colorado River Basin Tribes Partnership, "Proposed Fundamental Components of Colorado River Water Marketing/Banking," October 11, 1994 [hereafter "Fundamental Components"].

[98]Id. at ¶ 2.

[99]Id. at ¶ 6.

associated with a proposed lease and for developing appropriate mitigation. The tribal proposal states that leased water should be charged against the apportionment of the state and basin within which the reservation is located.[100]

With this proposal the tribes are keeping pace with developments in the Lower Basin. They are asserting their interests, and with a flexibility that matches reasonably well with other proposals currently on the table. Without question, they have earned a seat at the negotiating table.

IV. The Lower Colorado River Basin Technical Committee

With the proposed Reclamation regulations specific to the Lower Division and the Nevada and Arizona proposals, the basin states agreed there needed to be a special process that would focus specifically on Lower Division issues. Thus, in July 1994 the Lower Division States and the federal government established a Technical Committee, composed of representatives of these states and their Colorado River water user communities as well as the Bureau of Reclamation and, as of November 1994, the Colorado River tribes.

During its tenure, which ended in June 1995, the Technical Committee issued four "progress reports." The Committee's "Progress Report No. 4," issued June 1, 1995, summarizes the group's discussions to that point respecting water transfers, reservoir management, overrun accounting, and water banking. Interstate water transfers would be non-permanent arrangements, involving water "with a recent history of use." Water could be made available through land fallowing or "extraordinary conservation measures." Legally, interstate transfers could be managed as the forbearance of the use of Colorado River water within one state and the delivery of that water as unused apportionment to another state under Article II(B)(6) of the Decree in Arizona v. California[101]. Particular attention is given to interstate transfers of tribal water, including a proposal to phase in off-reservation leasing over

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[100] Id. at ¶ 7.

[101] 376 U.S. at 343.

some time period. Efforts to reach an understanding respecting the leasing of up to 60,000 acre-feet of Arizona's Colorado River apportionment to Nevada were not successful.[102]

The matter of establishing criteria for the declaration of "surplus" and "shortage" conditions was addressed under the topic of reservoir management. The Committee agreed that surpluses should be limited to the amount of water necessary to meet total Lower Division demand, but only if there is "no significant increase" in risk of shortage to existing entitlement holders.[103] Surpluses would be allocated according to the formula in Arizona v. California under which California would get 50 percent, Arizona 46 percent, and Nevada 4 percent.[104] Unutilized surplus could then be reallocated as an unused apportionment.[105] The Committee also developed a method for allocating unused apportionment.[106]

Inadvertent excess use of a Colorado River water entitlement would be managed through the maintenance of overrun accounts, with the understanding that indemnification would be required under certain circumstances. Cumulative overruns for different categories of entitlement holders would be capped at some amount. Reservoir spills for flood control or other reasons would eliminate accumulated balances.[107]

The Technical Committee discussed water banking in Lake Mead as well as off-mainstem. For Lake Mead, discussions centered on "top-water" and "middle-water" banking.[108] Top water would be stored on a "first in, last out" basis. It would be the first water released in the event of a spill. There would be no limitation on the quantity of water

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[102]Lower Colorado River Basin Technical Committee, "Progress Report No. 4," June 1, 1995, at 4.

[103]Id. at ¶ 4.

[104]376 U.S. at 342.

[105]"Fundamental Components," supra n. 97, at ¶ 6.

[106]Id. at ¶ 5.

[107]Id. at ¶¶ 5-6.

[108]Id. at ¶¶ 6-8.

banked in this space, but evaporation charges would be made. Such water, which must come from reductions in existing use by entitlement holders, would be transferable interstate.[109]

The concept of middle-water banking creates a more secure form of storage. Middle-banked water would not be spilled as part of a flood control release. There would, however, be a "payback" requirement in the event of harm (defined as the declaration of a shortage or limitation of a surplus). Total middle-bank storage is limited to the maximum amount of the overrun account.[110]

Off-mainstem water banking would be managed primarily by the state in which the bank existed. Such banks, utilizing either surface or underground storage, could manage "excess system water" or water made available through land fallowing or water conservation. This water would potentially be available either for intra- or inter-state transactions.

The Technical Committee made progress in further defining the issues and developing alternative ways to resolve some of the issues dividing the stakeholders. It stopped short, however, of developing something approaching a comprehensive regional solution. Given its technical focus, the Committee was perhaps most valuable addressing matters such as defining conditions under which a surplus declaration might be made and developing procedures for dealing with overuse of water. The dominant issues, however, are policy in nature, not technical. If such a Lower Division solution is to have any hope of success, the process must be taken up in a much more direct way by those with policy and decision-making authority in the basin. In the next section I offer an approach intended to address the major policy issues.

V. Matching Policy with Reality

There is something strange and wonderful about western water issues. Almost always somewhere within any issue is the assertion that there is "not enough water." To many, the Colorado River is perhaps the ultimate example of this apparent problem. After all, the annual consumptive use of at least 16.5 million acre-feet of water apparently has been allocated from a river that has produced during the last three centuries, an estimated annual

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[109] Id. at ¶ 7.

[110] Id.

average of only 13.5 million acre-feet.[111] Moreover, consumptive uses of Colorado River water in the Lower Division now essentially equal that division's basic allocation while demands continue to increase.

Imagine a Lower Division in which water users could be assured that at least 7.5 million acre-feet of Colorado River water would be available for beneficial use each year. All existing users would hold a delivery commitment in individual acre-foot units to that amount of Colorado River water permanently removed from the system each year (permanent units). These permanent units would be freely transferable on a voluntary basis. Each year, existing users could decide whether to continue their use of some or all of this water or to lease or sell this water to another for their use. There would be no "shortage" of water because its availability would be allocated by price, like all other goods and services in the economy. The base cost of the water would still largely reflect the direct costs of maintaining and operating the facilities that make that water available, but users also would be aware of an opportunity cost of not transferring this water to another use.

Indeed, 7.5 million acre-feet of Colorado River water are available for use in the Lower Division each year. Uses of the water are determined, however, not through some kind of market process but by a government-supervised administrative allocation process. First, fixed shares are apportioned to each of the states. The uses of this water are restricted to consumptive uses. The states and their users can benefit from Colorado River water only by making consumptive use of the water. The users hold essentially permanent rights but only to use water in the manner and at the location originally agreed to. The result is a generally inflexible system in which most of the attention focuses on protecting what one already has for present or future consumption.

A fundamental need for the Lower Division is to develop a mutually agreeable structure within which the uses of Colorado River water can adapt on a flexible basis. The basis for such an agreement is now coming into view. It rests upon an explicit acknowledgement that the Lower Division states control the use of 7.5 million acre-feet of

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[111]This figure is cited in David H. Getches, "Competing Demands for the Colorado River," 56 U.Colo. L. Rev. 413, 419 (1985). It is based on tree ring studies that are used to provide estimates of water flows prior to the availability of gauges in the river.

water annually in the Colorado River mainstem. It depends upon a further acknowledgement that Arizona, California, and Nevada each control the use of their apportioned shares. It would be facilitated by an agreement that this water potentially is available for any beneficial use, not just consumptive uses. It depends upon agreement that there is no additional water in the Colorado River Basin available for development by the Lower Division states. It further depends upon agreement that water for Mexico, for protection of endangered fish, and for water quality maintenance would come only from the 7.5 million acre-foot apportionment on a voluntary basis. I turn next to a discussion of these points.

1. *The Lower Division states should be acknowledged to control the use of 7.5 million acre-feet of Colorado River water annually.*

Of course, the 1922 Colorado River Compact apportioned this amount of water to the three Lower Division states but western water law does not acknowledge actual control of water without direct "beneficial use." Thus, until users within a state are diverting and using that state's full apportionment the undiverted water is not regarded as legally controlled by the state but is available to others who are presently able to divert and use the water. Under the existing approach, the Secretary of the Interior is authorized to allocate this unused apportionment water on an annual basis.

In practice, the Secretary long ago committed to users in California more than 800,000 acre-feet of water above California's 4.4 million acre-foot apportionment. The precise source of this water has never been identified, but it is generally assumed that it comes from the unused portion of the Lower Division's apportionment. As the amount of unused apportionment water available in the Lower Division decreases, new approaches are necessary.

Attention has focused on obtaining water out of the Upper Division's apportionment, either through transactions that would legally transfer the right to use water from the Upper Division to the Lower Division or through an extension of the existing administrative process under which the Secretary would declare the availability of "surplus" water that he could then allocate to those now able to divert and use the water. A variety of proposals have been made by owners of water rights in the Upper Division states to sell or lease these rights to

would-be users in the Lower Division.[112] Such proposals have been uniformly opposed by the basin states. Legal authority for the Secretary to allocate unused Upper Division water for consumptive use in the Lower Division is found both in Article III(e) of the 1922 Compact[113] and in Section 602 of the Colorado River Basin Project Act.[114] The Upper Division states have resisted the formalization of this process.

An alternative to this traditional "expand the pie" approach is to explicitly acknowledge that there is a known, maximum amount of Colorado River water available to the Lower Division states and to clarify that the states themselves control the disposition of this water. It acknowledges the fully appropriated reality of the Colorado River Basin and calls on the efficiency of market processes to allow water to meet current and future demands. It begins by making explicit the interest in each of the basin states in capturing the value of controlling the use of the water that has been allocated to it.

As a practical matter, the most straightforward way to move toward this understanding is for the states to begin to directly negotiate the use of unused apportionment water. The Secretary of the Interior has suggested he would be willing to use his authority to carry out

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[112]For a discussion of the issues raised by these proposals, see "Colorado River Basin," supra n. 13, at 42-44. In addition, the State of Utah has expressed a willingness to "defer" the development and use of a portion of its apportioned water for a specific period of time in return for annual payments.

[113]This is the provision prohibiting the states of the Upper Division from withholding water not used for agricultural and domestic purposes if there is such demand in the Lower Division. "Colorado River Compact," supra n. 4, Article III(e), at 443.

[114]In subsection (a), this provision indirectly recognizes the possibility of releases of water from Lake Powell beyond that amount necessary to meet the annual delivery obligation to Mexico and the ten year rolling average delivery obligation to the Lower Division so long as the Secretary determines that such releases of water can be made "without impairment of annual consumptive uses in the upper basin pursuant to the Colorado River Compact." 43 U.S.C. § 1552(a).

such agreements as a way to facilitate consensus among the basin states.[115] Unused tribal water rights would need to be protected in this process.

2. *Colorado River water should be available for any beneficial use.*

The apportionment of Colorado River Basin water among the seven states is based on consumptive use of the water. At the time the compact was negotiated, the value of water in the western states was largely equated with its use for growing crops or as a drinking water supply. Navigation as a use was explicitly made subservient to these consumptive uses[116] as was the use of water for hydropower.[117] Recreation and other instream values were not considered.

This exclusive emphasis on consumptive water uses no longer makes sense. The value of hydropower, even sold at below market rates, has increased over the years. To this point, revenues from the sale of this electricity have been regarded as a kind of bonus to the U.S. Treasury, intended to repay the substantial federal investment in the water storage and delivery facilities constructed in the basin to make consumptive water uses possible. It seems possible that in the future the use of Colorado River Basin water to generate electricity will be seen as valuable in its own right and given the ability to compete with other water uses in allocation processes. For this to work, the states will need to be able to directly benefit from hydroelectric generation. It is not enough for these revenues to be viewed either as paying for the facilities already constructed or as going into some "fund" from which future water development projects are to be built.

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[115]See Bruce Babbitt, "Keynote Address," Colorado River Water Users Association Annual Convention, Las Vegas, Nevada, December 8, 1995. He stated:

> When states with an interest in unused apportionment can agree on how to divide that apportionment, I will defer to that agreement, and use my apportionment authority accordingly, unless there is some compelling reason to the contrary. While I can only allocate unused apportionment on a yearly basis, I shall indulge a presumption in favor of whatever agreement is made by the parties, including an agreement binding among themselves to agree to provide unused apportionment for allocation to another state over a specified period of years.

[116]"Colorado River Compact" supra n. 4, Article IV(a), at 443-44.

[117]Id. Article IV(b), at 443-44.

Recreational activities in the Colorado River Basin have grown in importance over the years. These uses include flatwater boating, fishing and swimming at reservoirs, and river boating and fishing. These uses depend on the incidental availability of water. For example, Reclamation attempts to retain as much water in storage as possible during the summer recreation season and coordinates the operation of its dams with this purpose in mind. In most years there is enough water in the system to maintain adequate reservoir levels for recreation. In drought periods, however, when carryover storage is drawn down, recreation uses have little or no legal protection in the system.

Those holding water rights and their states should have the option of considering the full range of valuable uses that can be made of water in the Colorado River Basin. Uses of water for hydropower or for recreation may be more valuable than for some existing consumptive uses. It should be legally possible to direct water to such uses.

3. *Colorado River Basin water should be freely transferable under state-determined rules and procedures.*

Assuming it is agreed that states and their legal water users hold rights to up to their full basic apportionments and that this water may be applied to any beneficial use, it should then be agreed that the uses of water can change freely within general rules established by the states. As a baseline for all Lower Division states, water that has been permanently taken out of the River should be freely transferable to other uses within the same state. By definition, there can be no injury to other users on the Colorado River since this water has been consumed or otherwise removed from the river.

Interstate transfers of this water should be subject to state rules since, it has been agreed, the states control the use of fixed apportionments of water for the benefit of the citizens of the state. Thus, states should be able to determine the conditions, if any, on which they would agree that the use of this water in another state makes sense. Presumably, such decisions would be based largely on an evaluation of the economic costs and benefits of using the water within the state compared to the benefits of leasing or selling the water for use in another state.

There may be good reasons at this point to restrict the interstate transferability of Colorado River water to transactions within each of the divisions or even to just the Lower

Division. This analysis is focused on the Lower Division, and it concentrates on issues in this part of the basin. Under the approach proposed here, the Lower Division states would have known apportionments of water that can be regarded for practical purposes as 100 percent available each year. There remain a number of unsettled matters concerning the actual amount of water physically and legal available to the Upper Division states.

4. *Separate provision should be made to address the questions of water for Mexico, for water quality, and for fish.*

There is little trouble in most years in meeting the treaty obligation of providing at least 1.5 million acre-feet of Colorado River water to Mexico. Over the objection of the Upper Division states, the Lake Powell operating criteria for releases include 750,000 acre-feet of water for delivery to Mexico. In turn, Reclamation manages releases from storage facilities in the Lower Division as necessary to meet consumptive use demands in the U.S. with enough water in the river at the border to meet the Mexico delivery obligation.

The 1922 compact suggested that water for Mexico would come from "surplus" flows over the basic 15 million acre-feet apportioned to the two divisions plus the additional one million acre-feet of water allocated to the Lower Basin.[118] In fact, as mentioned, on a long-term basis there is probably less than an annual average of 15 million acre-feet. In short, there is no surplus. Nor is there a reliable supply from the Colorado mainstem of the additional one million acre-feet.

This proposal suggests recognizing this hydrologic reality by capping the committed annual apportionment of water to the Lower Division states at 7.5 million acre-feet. In return for the security of this supply that would be managed more directly by them, the Lower Division states also should agree not to develop any additional waters tributary to the river in a manner that would increase the net consumptive use of the basin's waters. The consumptive use allocation of an additional one million acre-feet would be regarded either as Gila River water for Arizona as suggested by Hundley[119] or as simply not available.

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[118]See "Colorado River Compact," supra n. 4, Article III(c), at 443.

[119]One prominent historian has concluded that this was the original intention of the drafters of the Colorado River Compact. See Norris Hundley, Jr., Water and the West: The Colorado River Compact and the Politics of Water in the American West, 313 (1975).

In turn the Lower Division states would be assured that water for Mexico would not come directly out of their 7.5 million acre-foot apportionment. Nor would any dilution flows that may be necessary to meet water quality obligations in the delivery of this water. Finally the Lower Division states would receive assurances that future determinations of water needs, if any, for fish and other ecological values would not be expected to come out of this basic apportionment except through voluntary agreement. A modest annual charge, say $0.50 per acre-foot, might be assessed on all water users to help pay the costs of restoring and maintaining ecologic values in the Lower Basin.

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In addition to agreement among the parties that the basic concepts outlined above should be put in place there will be a need for implementing mechanisms. One attractive option is the use of water banking, discussed in the next section.

VI. Water Banking

Water banking is more than just a mechanism for trading water. It can be understood to be "an institutionalized process specifically designed to facilitate the transfer of developed water to new uses."[120] Water banking is a state of mind as much as a particular process. It acknowledges the essential need for voluntary reallocation of water and defines the rules by which that reallocation is to occur. There is no fixed formula — no single mechanism. Rather it represents an active agreement on the part of interested parties concerning the best way to facilitate valuable reallocation of water.

All three of the Lower Division states have made proposals to establish some kind of bank, as have Reclamation and the Lower Colorado River mainstem tribes. These proposals vary considerably in the particular approach they would take. The important thing is that all of the major interests see the potential value of using some kind of water banking process to meet future water needs.

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[120]Lawrence J. MacDonnell, "Water Banks: Untangling the Gordian Knot of Western Water," 41 Rocky Mtn. Min. L. Inst. 22-1, 22-6 (1995) [hereafter "Untangling the Gordian Knot"].

There are some basic issues that should be addressed in designing a water bank.[121] A list of considerations is provided in Table 1. A shorthand summary of the choices reflected in three of the Lower Division bank proposals also is provided.

The bank should have an agreed-to geographic scope so that interested parties understand the area within which transactions may occur and to ensure that the necessary decision makers within this area are involved. Given our focus on the Lower Division of the Colorado River, it seems clear the scope of the bank should encompass this area. It may make sense at the outset to limit bank operations to Colorado River mainstem water, perhaps under contract with the Bureau of Reclamation and within the state apportionments. Potentially, the bank could handle any water that could be delivered, either directly or by exchange, using Colorado River water. It could be expanded to include the Upper Division as well.

Initially, the policy governing the implementation of the bank would need to be developed through negotiations including state, federal, and tribal representatives, as well as water user representatives and representatives of other key interests. Once the initial policy decisions are made, there should be a governing board of some kind with representatives of these interests and perhaps others such as environmental interests. The governing board should be formally empowered to make all subsequent policy decisions.

Administration of the bank could be managed by a staff to the board, or it could be handled by the Bureau of Reclamation. Reclamation already operates the reservoirs and manages the contracts for delivery of water. Its staff are in place. The federal government could provide the services of these personnel in support of bank operation. Alternatively, the bank could create its own staff.

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[121]For a more complete discussion, see Lawrence J. MacDonnell et al., Water Banks in the West, Natural Resources Law Center Research Report (1994) [hereafter "Water Banks in the West"] and "Untangling the Gordian Knot," supra n. 120.

Table 1. Issues in Designing a Colorado River Water Bank

BANK FEATURES	PROPOSING ENTITY		
	BUREAU OF RECLAMATION	NEVADA	ARIZONA
Geographic scope	Colorado River mainstem	Lower Basin	Lower Basin State-based
Who makes policy?	Sec. of the Interior, BOR Regional Director, and States	Lower Basin Commission	States
Who administers?	BOR	Lower Basin Commission	States and BOR
What water?	Colorado River water - conserved - from fallowing - tribal	All types	Unclear but may extend to any water
Who can buy?	Anyone	Anyone	State to state
Price	Not specified	Set by bank	Not specified
Other conditions	Verification committee	Not specified	50 yr. lease
Injury to water rights	BOR review	Not specified	States review
Third party protection	Permanent management of idled lands	Not specified	Limit on % of lands that may be fallowed
Funding for bank operation	Not specified	States, charges, and bonds	Charges
Other	Off reservation lease; beneficial consumptive use		Unused entitlement

A fundamental policy choice concerns the legal nature of the water that can be transacted through the bank. I have suggested above that historically consumptively used water should be available to the user for any purpose, including continuation of historical uses, modification of these uses, lease, or sale. If the user decides to forego the use of some or all of the Colorado River water historically available to him, either on a temporary or a permanent basis, his consumptive use share should be leasable or saleable through the bank. Perhaps the major legal impediment to such transactions on an interstate basis is language in the 1964 Arizona v. California Decree apparently restricting consumptive use of Colorado River water to the state to which the water is apportioned.[122] Such a restriction would effectively remove the incentive for most interstate transfers which are driven largely by the needs of California and Nevada to obtain rights to consumptively use Colorado River water beyond their basic apportionments. It may be necessary to obtain a change in the decree to assure that interstate transfers would be legally secure. Alternatively, Congress might enact an amendment to the Boulder Canyon Project Act specifically authorizing interstate transfers.

In addition, for water that is permanently diverted from the Colorado River, it should be possible for the entity diverting the water to sell or lease the carriage water associated with the consumptive use water through the bank. By definition there can be no return flow dependencies for such water downstream on the Colorado River.[123] This water is in the nature of imported or developed water as opposed to native water. It is water that would not

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[122]See Memorandum from Karen L. Tachiki, Gary D. Weatherford and William H. Swan to Technical Committee, "Legal Framework for Interstate Transfers Within the Lower Basin," September 7, 1995. The Boulder Canyon Project Act apportions the Lower Division's 7.5 million acre-feet of consumptive use among Arizona, California, and Nevada. Consumptive use is defined in the 1964 Decree as diversions from the stream less such return flow as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation. 376 U.S. at 340; "Colorado River Compact," supra n. 4, Article I(A)(1), at 442. Article II(B)(4) provides that "[a]ny mainstream water consumptively used within a State shall be charged to its apportionment, regardless of the purpose for which it was released." 376 U.S. at 343; "Colorado River Compact," supra n. 4, at 442. And Article III(D) explicitly enjoins the Lower Division states and water users from consuming water in excess of the quantities apportioned in the Boulder Canyon Project Act and confirmed in Article II of the Decree. 376 U.S. at 347.

[123]Obviously this situation does not apply in the case of Colorado River water users whose return flows go back to the Colorado River. Examples are the treated effluent from Southern Nevada users and the return flows of the tribes and other irrigators with lands along the Colorado River.

otherwise have been available at the place of use. A user cannot be required to continue importing the water. Nor can others claim harm if this water no longer is available.

In most cases, the water is diverted by a water district which then provides water to the consumptive user. Under this approach, the district could choose to retain the carriage water in its system, or it could sell it or lease it to another party. Such an approach fairly reflects the nature of the relationship between districts and users and gives both some incentive to consider transfers as an option for water that they presently divert and use.

Water to which a party holds rights but is not yet placing to use raises more difficult issues. Unlike consumptive use water there has not yet been that absolute commitment of the resources that effectively privatizes it. Moreover, others have been satisfying their consumptive needs with this water.

As suggested above, the Secretary of the Interior should begin assessing a charge against the deliveries of unused apportionment water.[124] The funds from such a charge could be used to help support operation of the water bank or for other purposes. The primary purpose of the charge would be to induce those using the water to consider alternative sources of meeting this demand. At present, the ready availability (though admittedly with less and less security) of this free water provides a strong incentive to use it and to use political or other means to continue using it. Pricing this water reflects its obvious value and prompts the user to weigh this cost in making continued decisions respecting its use.

Moreover, those holding entitlements to unused apportionment water and those wanting to use it could consider an arrangement transferring the "contemplated consumption" that would be associated with an entitlement holder's intended use. This proposed approach borrows from the approach that Colorado follows in evaluating issues of injury in the case of a proposed change of use of a conditional water right.[125] It acknowledges the legal option

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[124]There is some question about the Secretary's existing authority to impose such a charge. Water deliveries of unused apportionment water to California users are governed by contracts, and any additional charges imposed would have to be permissible under those contracts. See Duane Mecham and Benjamin M. Simon, "Forging a New Federal Reclamation Water Pricing Policy: Legal and Policy Considerations," 27 Ariz. St. L.J. 507 (1995).

[125]See Lawrence J. MacDonnell, "Changing Uses of Water in Colorado: Law and Policy," 31 Ariz. L. Rev. 783, 803-04 (1989). Under Colorado law a conditional water right protects the priority of the appropriation while the holder of the right is "diligently" moving toward actual use of the water. Colorado courts have

available to the entitlement holder to make consumptive use of the unused apportionment water, but provides that party with an alternative which is to lease or sell the "contemplated" consumption to another. Clearly there are a number of practical problems potentially associated with this approach. They do not seem insurmountable, however, and may well be worth the associated transaction costs because it would provide a means for the holder of the unused apportionment right to effectively put this water to use while giving the user greater security in their legal right to use the water. As suggested, the surcharge would not apply to unused apportionment water subject to such an agreement.

A closely related consideration concerns who is eligible to purchase water through the bank. There are a number of possible choices here including restricting transactions to the states, limiting purchasers to those already holding water use entitlements from the Colorado River, and limiting purchasers to users in the same state as the existing entitlement holder. For the bank to be able to most effectively serve the objective of creating a flexible system for water allocation there should be as few restrictions as possible on who can purchase or lease water through the bank. Given concerns about speculation in water, it may be desirable to require that purchasers be water users or representatives of water users.

Still another fundamental consideration is the means by which prices are established. Both the California state bank and the Idaho district rental pools set prices administratively.[126] The effect, however, is to forego one of the fundamental values of a bank — its ability to let supply and demand determine the value of water. Price adjustments then work to equilibrate supply and demand without the need for any administrative intervention.

A Colorado River bank is well suited for the operation of a market because of the fungibility of the water supply. Water stored in Lake Mead or in any of the upstream reservoirs can be delivered to any user in the Lower Division with access now to Colorado River water, subject to the availability of storage and delivery space in the various facilities.

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allowed the change of use of a conditional water right, based on a no injury analysis using the amount of water that would have been consumed under the originally intended use (the contemplated consumption).

[126]Both of these banks are described in detail in "Water Banks in the West," supra n. 122, at 2-1 to 2-52.

The uniformity of the product would allow the bank to operate periodic auctions that could aggregate a sufficiently large number of buyers and sellers to create a real market.[127]

Concerns about injury to other water rights should be minimized because transferable water would be limited to the consumptive use portion. Determination of consumptive use can itself be a costly and contentious process. If possible, this should be avoided in favor of adoption of agreed-upon consumptive use quantities, developed by crop type and by general location. The transferor would need only to bring evidence of the crops grown in some recent historical time period and of the land area irrigated. At this point there would be a presumption that the transfer of the calculated quantity of water would not injure other water rights. Those believing they will nevertheless be harmed can come forward with evidence of the harm, but the burden of proof would be on them.

Third party effects of water transfers present a challenging set of issues. Permanent removal of water from an area inevitably weakens the water-based part of the local community. In some cases, such as rural areas heavily dependent on irrigated agriculture, there may be few other options for maintaining an economy. Moreover the historical availability of that water may have resulted in the development of valuable wildlife habitat or other environmental benefits.

In my view the need for some degree of reallocation of water demands that we find acceptable ways to address these legitimate concerns. The challenge is not to erect unnecessary obstacles to transfers but to encourage transfers that fairly respond to these third party effects.[128] One great attraction of a bank is its ability to facilitate temporary transfers of water so that the entitlement holder maintains ownership of the right and the ability to use the right again in the future. It facilitates the efforts of districts and irrigators to devise creative water pooling arrangements and other means for making a portion of their water supply available for other uses while still maintaining their agricultural base.

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[127]The use of auctions and other mechanisms for trading water are discussed in "Water Banks in the West," supra n. 122, at 4-18 to 4-28.

[128]This argument is made at length in "Smarter Approaches," supra n. 38.

Consideration should be given to assessing a charge against bank transactions, with the funds used to support activities in the local areas from which water is transferred to improve water use systems, support local infrastructure, develop alternative economic opportunities, and enhance environmental values.[129] Such an approach would avoid the need for costly site-specific analyses of possible impacts associated with each transfer and would focus instead on identifying high priority projects regarded as generally beneficial and then providing a source of funding to implement such projects.

The costs of operating the bank are still another important consideration. Given the importance of keeping these costs low, bank operations should be kept as simple as possible. Within this general objective, I believe the bank should be financially self-sustaining. That is, the full costs of its operations should be supported by charges against bank transactions. These charges should be known in advance to bank participants so that they can weigh this cost in their decision to utilize the bank.

A fundamental design question that has arisen already in discussions to date is whether there should be a single Lower Division bank or whether each of the states should operate their own banks. There are good reasons to have active state involvement in a Colorado River bank. For each of the three Lower Division states, Colorado River water represents an important part of the state's water supply. Moreover, in theory at least each state is limited to consumptive use of a maximum quantity of this water — a responsibility that individual users will not necessarily be concerned with. As presently understood, states see benefits from Colorado River water almost exclusively in terms of consumptive use of this water within their state. And, of course, the states are concerned with effects on other water rights holders and third party interests in the event of a change of water use. To ensure state involvement one model would be for each state to operate its own bank.

The Arizona proposal for a state water bank takes this approach. The proposed Arizona bank suggests the possibilities of a more integrated approach to interstate marketing of water in which the bank could develop pools of water from different, and changing, sources over time in a manner that would enable it to ensure the availability of a committed

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[129]This approach is developed at greater length in "Untangling the Gordian Knot," supra, at n. 120, at 22-55.

supply.[130] While marketing to Nevada and California water available to Arizona users under Arizona's Colorado River apportionment, the state bank also could operate within Arizona to help users better match present demands with supplies from all sources.

A California bank could help facilitate the changes needed in the priorities among intrastate users to that state's Colorado River apportionment and, possibly, help to market "first use" arrangements to Nevada of California entitlements. Again it could serve as the forum through which the mix of interests in that state work out their needs in relation to Colorado River water.

A Nevada bank could be operated by the Southern Nevada Water Authority since this entity appears to represent water purveyors in the relevant portion of that part of the state. At present, it would seem that the function of the Nevada bank would be to obtain additional reliable water supplies at the lowest cost possible. Historically, water suppliers have focused on obtaining control of enough water to meet the highest growth needs as projected out on some planning horizon. Perhaps if the banking model took root in the Lower Division there would be more confidence that water would be obtainable in the quantity needed at the time needed, and there would be less pressure to secure this maximum guaranteed supply in advance of its actual use.

A Lower Basin tribal bank could be helpful in addressing the significant, and probably somewhat different, internal issues among the tribes respecting off-reservation and interstate marketing of tribal water. Purchasers could then come to a single entity to lease water and know that the water was fully available for their use. If unused entitlement water was to be leased for off-reservation use the bank could manage these transactions as well. One question is whether such a bank should include just the mainstem Colorado River tribes or should involve the Arizona CAP tribes as well.

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[130]The bank itself would not be the owner of water rights. Rather it would act as the coordinating mechanism through which those holding the rights and those wanting to use the rights could be brought together. The Arizona proposal would make the state bank the only legal means by which Arizona water rights could be leased for use in another state. While some have criticized this proposal as unnecessarily interfering with market transactions, it has the merit of making state leaders more confident that transactions will produce net benefits to the state as well as to the holder of the water right. Moreover, the state bank could actually streamline the process by clarifying the rules and procedures for such transactions.

Under such an approach, Reclamation could then manage utilization of federal storage facilities for water banking, develop and implement regulations respecting protection of federal interests in such transactions, and put together the contracts needed to allow the storage and delivery of banked water. The states and the tribes would have responsibility for addressing issues such as the physical quantity of water that is bankable, protection of other water rights, and protection of local economic and environmental concerns. Federal responsibility would be to protect its financial interests, to meet its delivery obligations under the Law of the River, and to meet its legal obligations under federal environmental laws for protection of endangered species and water quality.

There is something potentially cumbersome about such a balkanized approach to water banking. The advantage of the bank proposed by the Bureau of Reclamation was the centralization of decision processes with the Regional Director, allowing the states and the tribes to create their own internal rules guiding the circumstances under which Colorado River entitlements could be banked and transferred interstate. With a single bank dedicated to transactions involving Lower Division Colorado River entitlements, uniform procedures could be established to evaluate the availability of water through land fallowing or conservation. There could be a single forum for working out agreement respecting the management of unused apportionment water. There could be a single forum for resolving issues respecting use of surplus water and addressing issues of shortages. There could be a single forum for addressing approaches to meeting protection needs for endangered species in the river.

Nevada's proposal suggested a single bank operated by a commission composed of representatives of the three states. Perhaps an alternative would be a single bank with a board or commission that also included a tribal representative and a federal representative. Bank operations could be managed by the Bureau of Reclamation under direction from the board. Any buyer or seller in the Lower Division could participate in the bank, subject to whatever requirements might be created by the individual states or the tribes. In a sense the discussions of the Technical Committee were organized along this model.

There is no one way to do any of these things — no single approach to water banking or interstate transfers that is the "right" way. But it is important to think through both short-term and long-term objectives and what must be addressed to get there. At present it seems

to me that the interests are only part of the way to meeting this condition. They are faced with the reality that the Lower Division's basic allocation now is effectively fully utilized. These uses do not match state apportionments. Users in California consume more than the 4.4 million acre-feet of water allocated for consumptive use in that state. The cushion that made this additional use possible is disappearing. In addition, entitlements held by in-state users are increasingly out of alignment with contemporary water needs within the states themselves — particularly in California. Developing a regional framework within which uses of Colorado River water available to the Lower Division can keep pace with the needs of Lower Division users makes sense in this context.

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What I suggest here in broad outline is an approach that could help the Lower Division move in this direction. It is an approach predicated on the belief that there is in fact enough water in the Lower Division to meet the foreseeable needs of the users in this area. What is needed is to develop arrangements that permit the use of water to adjust to demands within the general framework of the Law of the River. It seems to me that perhaps the most promising approach is that offered by the creation either of state banks or of a Lower Colorado River Water Bank that could serve both as the policy making forum and the primary implementing agency for carrying out that policy.

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