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The American River Decision: Balancing Instream Protection with Other Competing Beneficial Uses

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ABSTRACT: Litigation on the American River in California has focused upon the conflict between instream resources and other consumptive beneficial uses. In that litigation the court has fashioned a "physical solution" intended to accommodate the competing uses rather than deciding between them. The success of the physical solution will depend, in large part, on the cooperation of entities not parties to the litigation and on the parties' own willingness to be bound by the limitations imposed by the court. There are indications, in this regard, that most involved in the effort are moving forward carefully but in a manner consistent with the court's determination.

KEY WORDS: "Best-available source," cumulative impact, "physical solution," public trust doctrine.

INTRODUCTION

Balancing consumptive uses with instream protections is one of the major environmental challenges of the 1990's. In California most streams have been appropriated with little, if any, consideration of the potential instream consequences of the appropriation. With the development of a strong environmental movement, in the late 1960's, came a greater degree of sensitivity to the environmental consequences of water diversions. This sensitivity has led to consideration of instream needs in the current appropriation process.

Resolution of conflicts between consumptive and instream needs, however, is not always easy or possible. The increased need for domestic water supplies in California's growing population centers, coupled with stringent regulation of drinking water quality, has compounded the complexity of these conflicts. Simple allocation solutions, to the extent that they ever existed, no longer solve the problems posed because the quantity of water taken from

the stream is no longer the sole question that needs to be answered. In addition to quantity is the question "from what location shall the water be taken?"

Entities with a responsibility to supply public drinking water argue that water must be diverted from the "best available source," a public health concept that is based upon the physical reality that the higher up in a watershed one goes to divert a water supply, the fewer contaminants or pollutants there are to be dealt with through the treatment process. The consequences of applying this theory on a broad scale are obvious. Increased upstream diversions not only affect areas of great environmental sensitivity, but also reduce or eliminate flows throughout a stream system.

Resolution of this conflict was the focus of litigation, in California, that pitted the protection of instream values on the American River against the water quality needs of a major San Francisco area water agency.



the East Bay Municipal Utility District (EBMUD). In that litigation, the court fashioned a "physical solution" that may pro-

vide a means of dealing with conflicts of this nature.

FACTUAL BACKGROUND

The American River rises in the Sierra Nevada and flows westward to its confluence with the Sacramento River. It was on the American River that John Marshall, in 1848, discovered gold, and it was between the American and Sacramento rivers where the capitol of California was established and now prospers. The American River has been the focal point of significant California and American history and has been the subject of landmark judicial decisions. For example, in *People v. Goldrun* (66 Cal. 155, 4 P. 1150 [1884]), the California Supreme Court determined that mining sediment associated with placer mining in the motherlode was a nuisance that impeded the utilization of water for the State's infant agricultural industry. As a consequence, the

court enjoined the upstream mining practices, to the extent they interfered with the use of water for agriculture, thereby aiding agriculture's rise as California's number one industry. *People v. Goldrun* was also cited and accepted by the California Supreme Court as an early assertion of California's public trust doctrine in the Mono Lake case (*National Audubon Society v. Superior Court*, 33 Cal.3d 419 [1983]).

In recent years, the American River has been the focus of intense water development activities. Figure 1 is a schematic map of portions of the American River, showing the relative location of water development facilities and proposed diversion points as well as areas of environmental concern.

WATER DEVELOPMENT

Folsom Dam was authorized in 1949 as a United States Bureau of Reclamation (USBR) multiple purpose reclamation project (Pub. L. No. 81-356). As part of this legislation, Congress also directed the USBR to determine if further water development on the American River was possible. As a result of the USBR's continued work, the Auburn-Folsom South Unit was authorized by Congress in 1965 (Pub. L. No. 89-161). The main features of this project were Auburn Dam and Reservoir (upstream from Folsom Dam) and the Folsom-South Canal, a conveyance facility located downstream of Folsom Dam.

By 1956, Folsom Dam was completed and in operation. Construction of the Folsom-South Canal commenced in 1968, and 27

miles of the canal were completed. However, in 1972, further construction was enjoined until the USBR completed an adequate Environmental Impact Statement (EIS) (See *NRDC v. Stamm*, 6 ERC 1525, 4 Env'l. L. Rep. 20, 463 [E.D. Cal. 1974]). To date, the Department of the Interior has not completed this EIS. Construction of the Auburn Dam started in 1967. Concern over the seismic safety of the dam, however, brought the project to a standstill. The dam has never been completed and the present estimated cost to complete construction is far in excess of the authorized cost ceiling. Finishing Auburn Dam will require additional authorization and appropriations by Congress before further construction can proceed.

AMERICAN RIVER AND AMERICAN RIVER PARKWAY

The 23 miles of the American River below Folsom Dam (the lower American River) is the major focus of environmental

concern. The City of Sacramento and the Sacramento County, from as early as 1915, planned for development of recreational



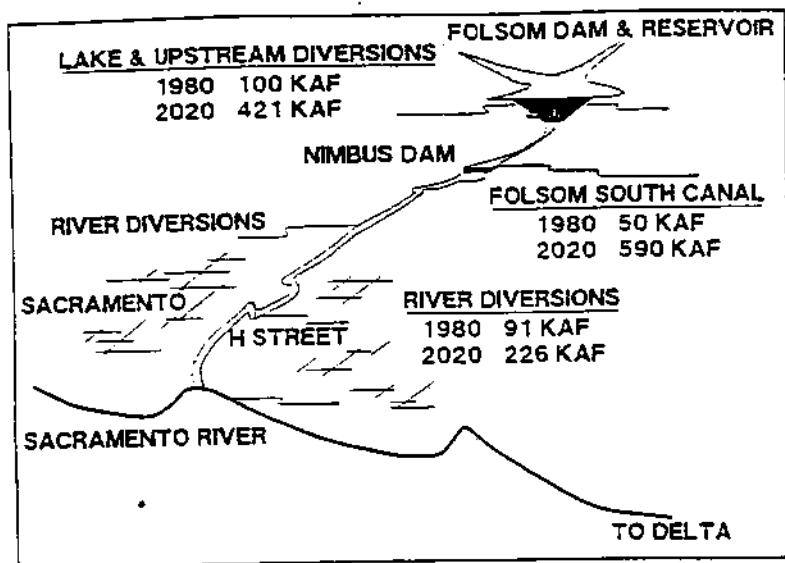


FIGURE 1. American River water demands: existing and potential.

sites along the American River. After the closure of Folsom Dam, pressure for urban development adjacent to the river spurred efforts to preserve open space along the river. In 1959, Sacramento County established a Department of Parks and Recreation to develop a detailed park plan along the American River. A systematic land acquisition program followed, and by 1986 Sacramento County had acquired over 4,000 acres of parkway land.

Today the American River Parkway consists of a series of 14 connected parks comprising a complete riparian corridor along both sides of the American River from Folsom Dam to the confluence of the American with the Sacramento River. The lower 23 miles, from Nimbus Dam to the river's mouth, are administered by Sacramento County. In 1981 the Secretary of the Interior also designated the lower 23 miles of the American River below Nimbus Dam as a recreational river under the National Wild and Scenic Rivers Act (16 U.S.C. § 1271 et seq.). In 1972, the California Legislature included the same segment in the State Wild and Scenic system (Cal. Pub. Res. Code §§ 5093.50, 5093.54(e)). The lower American River was statutorily designated as a "recreational" river in the state system in 1982 (Cal. Pub. Res. Code § 5093.545).

Recreation

The American River Parkway runs through the center of the Sacramento metropolitan area. The parkway is managed to balance the dual goals of preserving natural or open space and protecting environmental quality within the urban environment, at the same time contributing to recreational opportunities in the Sacramento area, including rafting, canoeing, kayaking, swimming, wading, and fishing, as well as biking, hiking, picnicking, and sight-seeing. The parkway contains both developed parks and areas set aside in their natural condition. The Jedediah Smith Bicycle Trail permits users to bicycle the entire length of the parkway.

Riparian Vegetation and Wildlife

The riparian vegetation acts as a buffer between the lower American River and the surrounding urban development. This vegetation and the river itself are the most prominent features of the Parkway and contribute greatly to recreational experiences. Many species of wildlife use the riparian vegetation for sources of food, cover, nesting sites, roosting areas, and migratory corridors.

The parkway supports a wide variety of

birds and wildlife. More than 220 bird species have been recorded. Sacramento County estimates that 30 mammal species, 13 reptile species, and 6 amphibian species also inhabit the parkway. The riparian habitat is important not only as breeding grounds for resident animals, but also as wintering grounds and migratory corridors for nonresident species. The parkway includes a number of off-channel ponds that have high wildlife value.

Fisheries

The lower American River has 41 reported species of fish. Of these species, nine are anadromous (they live mainly in salt water but ascend freshwater rivers to spawn). The most abundant anadromous game fish that use the river are chinook salmon, American shad, and steelhead trout.

The lower American River chinook salmon run is one of the state's most valuable fisheries, supporting significant commercial and sport fisheries in the Pacific

Ocean and in the lower American River. Although some adult salmon may be found in the river year around, the population is mainly the fall-run species. The fall-run adult salmon begin to enter the river in September. Spawning occurs through January, and incubation and rearing of juvenile salmon extends through mid-July.

American shad support a popular sport fishery in the lower American River. The shad fishery draws anglers from throughout Northern California. Adult American shad enter the lower American River in May and June to spawn. Water temperature is a key factor affecting spawning and egg development of American shad.

Steelhead trout support a popular sport fishery in the lower American River. The main run of adult steelhead enter the river in the winter and early spring to spawn. The juvenile steelhead rears in freshwater for at least a year before emigrating to the ocean. The steelhead trout, like the chinook salmon, is a coldwater fish whose various life stages are affected by water temperature.

EFFORTS TO PROTECT INSTREAM RESOURCES

The instream values associated with the lower American River have, of course, been recognized for a long time. Also obvious, for some time, was the intention to divert water from the lower American River for consumptive purposes. Table 1 quantifies the amount of water either under contract or for which entities have requested contracts from Folsom Reservoir. Also shown is the amount of water that is held by entities other than the USBR. Most, if not all, of this water was intended for diversion above the mouth of the American River.

Concerns were expressed about the potential adverse effects of these diversions on the lower American River from the beginning of the USBR's development efforts. In 1958, the California State Water Resources Control Board (SWRCB) issued Decision 893 (D-893), granting permits to the USBR for storage of water at Folsom. The USBR's permits were subject to minimum flows for fisheries resources, as provided for in a memorandum between the USBR and the California Department of

Fish and Game (250 cfs from 1 January through 14 September, and 500 cfs from 15 September through 31 December).

In 1970, the SWRCB issued Decision 1356 (D-1356), granting the USBR water rights permits for Auburn Dam. The board also reserved jurisdiction for the purpose of formulating terms and conditions relative to flows to be maintained in the lower American River for recreational purposes and for the protection and enhancement of fish and wildlife. These flows were actually established in 1972 by Decision 1400 (D-1400).

In D-1400 flows for fisheries were established at 1250 cfs from 15 October through 14 July and at 800 cfs from 15 July through 14 October. Minimum recreation flows were set at 1,500 cfs. Recreation flows could be eliminated and fishery flows reduced during dry years, assuming the USBR also reduced deliveries to its water supply customers. The flows in D-1400 were based on the assumption that Auburn Dam would be built and apply only to the USBR's Au-

burn permits. Because Auburn Dam has not been constructed, the D-1400 flows are not legally binding upon the USBR, and the lower D-893 flows currently control releases to the river.

In 1972, the USBR entered into a water supply contract with EBMUD. EBMUD's contract calls for the delivery of 150,000 acre-feet of American River water from the

Folsom-South Canal. The only other long-term contract on the Folsom-South Canal is held by the Sacramento Municipal Utility District for its Rancho Seco Nuclear Power Plant. That contract provides for 75,000 acre-feet annually (afa), although only a small fraction of that water has ever been taken. The EBMUD contract resulted in extensive litigation.

PROCEDURAL HISTORY OF THE LITIGATION

Like many water cases, this litigation has a long judicial history. Filed in 1972 (*Environmental Defense Fund, Inc., et al. v. East Bay Municipal Utility District, et al.* [Super. Ct. Alameda County, No. 425955]), the case has been before the California Supreme Court on two occasions, and before the United States Supreme Court once, all on pleadings issues. The actual trial of this matter commenced in 1984, but the case was then referred to the SWRCB, as referee. The Reference proceedings, before the SWRCB, required 3½ years and resulted in a five-volume report, to which all parties took exceptions.

The original Complaint was filed by numerous environmental groups, including the Environmental Defense Fund (EDF) and Save the American River Association (SARA), and it focused on allegations that EBMUD's decision to seek a supplemental supply of water from the American River violated Article X, section 2 of the California Constitution, as well as various provisions of the California Water Code, because of the location of the point of diversion at the Folsom-South Canal, upstream from the lower American River. Shortly after the environmentalists' complaint had been filed, Sacramento County intervened on behalf of the plaintiffs, adding allegations to those already at issue, focusing on the 23 miles of the lower American River that were used by the public for scenic and recreational purposes, including boating, swimming, and fishing. The County also alleged that it had acquired land and expended funds for a parkway along the lower American River; that the 150,000 acre-feet contracted for by EBMUD, if taken from the Folsom-South Canal, would not be available for flows in

the lower American River; and that D-1400 flows were less than those necessary for optimum conditions for fish and recreation.

In its first decision in this case, the California Supreme Court affirmed judgment in favor of EBMUD (*Environmental Defense Fund, Inc. v. East Bay Municipal Utility District* [1977] 20 Cal.3d 327 [EDF I]). The Supreme Court held that the water diversion issues were preempted by federal law. In 1978, the United States Supreme Court vacated the judgment in *EDF I* and remanded the case to the California Supreme Court for further consideration in light of the United States Supreme Court's decision in *California v. United States* ([1978] 438 U.S. 645) (*Environmental Defense Fund, Inc. v. East Bay Municipal Utility District* [1978] 439 U.S. 811).

On remand, the California Supreme Court reversed its earlier decision (*Environmental Defense Fund, Inc. v. East Bay Municipal Utility District* [1980] 26 Cal.3d 183 [EDF II]). The Supreme Court ruled that to the extent the complaints "challenge the location of the diversion point as being violative of California law, there is no federal preemption" (*EDF II* at 193).

Following the decision in *EDF II*, plaintiffs filed amended complaints. These complaints alleged that seeking a supplemental supply of water from the American River to be diverted in a manner that would not allow the water to flow down the lower American River constituted an abuse of discretion and was an unreasonable diversion and use of water. The amended complaint was based on the argument that the proposed decision would reduce flows in the lower American River, causing harm to instream values.

TABLE 1
USBR projected 2020 American River service area needs (1,000 acre-feet annually).

Agency	Contractual and water rights entitlements	Additional need*	Total need
Placer County CVP Water	117.0	—	117.0
Placer County Water Rights	120.0	—	120.0
Natomas Ditch Diversion	32.0 ^a	—	32.0
North Fork Ditch (San Juan)	33.0	—	33.0
Folsom Prison	4.0	—	4.0
El Dorado County CVP	7.5	—	7.5
El Dorado Water Rights	47.5	—	47.5
City of Roseville	32.0	—	32.0
Subtotal	393.0	0.0	393.0
City of Folsom	0.0 ^a	20.9	20.9
Mather Air Force Base	0.0	0.4	0.4
Multi-district area			
San Juan Suburban Water District	11.2	26.1	37.3
Citizens Utility Company	0.0	21.6	21.6
Northridge Water District	0.0	13.2	13.2
McClellan Air Force Base	0.0	2.5	2.5
Rio Linda County Water District	0.0	6.8	6.8
Subtotal (from Folsom Lake)	11.2	91.5	102.7
Sacramento County Water Agency			
FSC-Sacramento County Irrigation	0.0	—	0.0
Area 1	0.0	29.0	29.0
Area 3	0.0	46.0	46.0
Omochumne-Hartnell Water District	0.0	12.0	12.0
Galt Irrigation District	0.0	31.0	31.0
Clay Water District	0.0	2.7	2.7
City of Galt	0.0	9.9	9.9
Laguna/Elk Grove	0.0	77.7	77.7
Sunrise East Area	0.0	17.2	17.2
Subtotal (Agriculture)	0.0	120.7	120.7
Subtotal (Municipal & Industrial)	0.0	104.8	104.8
Subtotal (Sacramento County Water Agency)	—	225.5	225.5
FSC—EBMUD	150.0	—	150.0
FSC—SMUD	75.0 ^a	—	75.0
FSC—Losses	20.0	—	20.0
City of Sacramento	230.0	—	230.0
Carmichael Water District	10.8 ^a	4.2	15.0
Riparian	41.0	—	41.0
Subtotal	526.8	4.2	531.0
San Joaquin County			
North San Joaquin Water Conservation District	0.0	57.0	57.0
Woodbridge area	0.0	13.0	13.0
Stockton East Water District	0.0	49.0	49.0
Central San Joaquin Water Conservation District	0.0	22.0	22.0
San Joaquin County Flood and Water Conservation District	0.0	31.0	31.0
Subtotal	0.0	172.0	172.0
Stockton East Water District	0.0	49.0	49.0
Subtotal (San Joaquin County)	0.0	221.0	221.0

TABLE 1
Continued.

Agency	Contractual and water rights entitlements	Additional need ^a	Total need
Total Agriculture		292.7	
Total M&I		249.5	
Total—American River	931.0	542.2	1,471.2

- ^a Based on U.S. Bureau of Reclamation (1988) (except for Carmichael Water District).
- ^b City of Folsom Water Right (22,000), Southern California Water Co. (10,000).
- ^c Included in Natomas Ditch Diversion.
- ^d Includes 15,000 acre-feet water right (city of Sacramento).
- ^e Reported by Carmichael Water District.

In 1984, based upon the County of Sacramento's motion for an Order Referring Issues to the State Water Resources Control Board, pursuant to Water Code section 2000 et seq., the matter was referred to the SWRCB. Twenty-one specific issues, in-

cluding both factual and legal matters, were referred to the State Board as referee.¹ After the SWRCB rendered its report, a trial de novo began in the Alameda County Superior Court on exceptions to the report filed by the parties.

THE SUPERIOR COURT'S DECISION

In January 1990 the Superior Court issued its Statement of Decision, in which certain limitations were placed upon EBMUD's ability to divert water upstream from the mouth of the American River. In reaching his decision, the Superior Court Judge, Richard A. Hodge, attempted to achieve a balance by protecting instream interests while accommodating the uncertainties associated with the water quality issues raised by EBMUD. In so doing, Judge Hodge addressed the relative positions of the parties.

3. Any legitimate water quality concerns that EBMUD may have can be dealt with through treatment or through blending with high quality water EBMUD has from other sources.

EBMUD's Position

EBMUD asserted the following positions:

1. EBMUD's exercise of its contractual right to divert water from the Folsom-South Canal will not cause incremental harm to instream resources.
2. Any cumulative impact of diversions on the lower American River

Sacramento County's Position

Sacramento County and the other plaintiffs and intervenors asserted the following positions:

1. EBMUD's diversion along and together with other existing and projected diversions will harm instream values in the lower American River.
2. EBMUD has reasonable, feasible alternative points of diversion, downstream from the mouth of the American River, from the Sacramento River and the Delta.

¹ In November 1985 the Superior Court granted leave to the California Department of Fish and Game to intervene for the limited purpose of addressing issues related to the protection and enhancement of the State's fish, wildlife resources, and associated recreational activities in the lower American River. On 16 June 1986 the California State Lands Commission was also granted leave to intervene on a limited basis related to riparian issues.

can only be addressed if all existing and future diverters, including the USBR, are involved.

3. There are no reasonable, feasible al-

ternatives to the Folsom-South Canal Diversion, if one considers costs and the concept of "best available source."

THE COURT'S ANALYSIS

In attempting to frame the issues before him, in light of the parties' asserted positions, Judge Hodge stated, "[p]robably no party would disagree with Sacramento County that the focus of this case is on the public trust impacts and constitutional 'reasonableness' of EBMUD's proposal to take water through the Folsom-South Canal" (Statement of Decision at 23).

In California, the public trust doctrine protects ecological, recreational, commercial, navigational, and fishery values in the navigable waters of the state (*National Audubon Society v. Superior Court*, 33 Cal.3d 419 [1983]). Judge Hodge had to coordinate the public trust doctrine with the "reasonable use" doctrine found in Article X, section 2 of the California Constitution, which requires that (1) waste or unreasonable use or unreasonable method of use of water be prevented, (2) the consumption of water be exercised with a view to the reasonable and beneficial use, and (3) water resources be put to beneficial use to the fullest extent of which they are capable (Statement of Decision at 27-28).

The court, following *Audubon*, concluded that the first goal of any court in applying these doctrines is to attempt to accommodate the competing interests rather than deciding between them. In adopting this view, Judge Hodge, in essence, accepted the first part of the proposition offered by Sacramento County and other plaintiffs, that the court postulated in its entirety as follows:

1. *Audubon* requires that in the allocation of water resources, the state has a duty to protect public trust uses whenever feasible, and to attempt, so far as feasible, to avoid or minimize any harm to those interests;

2. EBMUD has feasible alternative diversion sites;

3. Therefore, EBMUD may not divert at the Folsom-South Canal (Statement of Decision at 28).

The court, however, rejected the second and third aspects of the syllogism, that the only way to achieve protection for the lower American River was to make EBMUD divert its water below the confluence of the American and Sacramento rivers. Judge Hodge stated:

[I]f protection of public trust values can be accomplished consistently with the diversion at Folsom-South Canal, then plaintiffs and intervenors can have no sustainable complaint. In the absence of an unnecessary diminution of public trust values, plaintiff's demand for a different diversion site has no supportable legal foundation. In the absence of harm, plaintiff is not entitled simply to achieve a different diversion site as a question of policy or preference (Statement of Decision at 28).

The goal, therefore, was to find a solution that would avoid adverse effects on the instream values of the lower American River without forcing EBMUD to an alternative location. Assuming this could be accomplished, the court would then not have to face or resolve problems with respect to water quality and costs alleged to be associated with alternative points of diversion.

Judge Hodge chose to reach this goal through adaptation of the doctrine of "physical solution." The traditional application of this doctrine was developed to further the mandate of Article X, section 2 of avoiding the waste of water. The doctrine requires a court to determine, in any water rights litigation, means to avoid waste while at the same time not unreasonably and adversely affecting the vested property rights of the paramount right holder. Judge Hodge adopted this doctrine and applied it to protect instream uses while still allowing EBMUD the option to divert water from the Folsom-South Canal. The court indicated that the physical solution was mandated by Article X, section

2 of the California Constitution, in conjunction with the public trust doctrine and represented "an absolute condition of diversion by EBMUD" (Statement of Decision at 108). The physical solution adopted by the court, in relevant part, is as follows:

PHYSICAL SOLUTION

Physical Solution shall be accomplished as follows:

1. EBMUD may divert not to exceed 150,000 acre-feet annually (AFA) from the Folsom-South Canal pursuant to its contract of December 22nd, 1970, with the U.S. Bureau of Reclamation.
2. The following instream flow requirements must be met throughout the lower American River as a condition of diversion:
 - A. October 15th through February, 2000 CFS;
 - B. March through June, 3000 CFS;
 - C. July through October 15th, 1750 CFS;
3. An additional 60,000 AFA will be maintained in reserve at the reservoir from mid-October through June for release upon the recommendation of the Department of Fish and Game in response to specific fishery requirements.
4. EBMUD shall use its best efforts to divert as much water as possible during those times when instream flows are least required for the protection of environmental interests and public trust values.
5. The instream flow conditions set forth above are not intended to constitute operational flows that are to be met in every month of every year without regard to the hydrologic conditions that might prevail at any given time. The court anticipates that operational criteria will need to be established, based upon the various hydrologic year types (critically dry, dry, below normal, above normal, etc.) to ensure that Folsom Reservoir is not emptied and that there are flows available in the river whenever possible. However, the court intends that the instream flow requirements set forth above remain the standard that should be maintained to the fullest possible extent. Moreover, the court intends that the instream flow requirements be an absolute limit on EBMUD's ability to divert water from the Folsom-South Canal. When the instream flow requirements cannot be met, EBMUD may not divert any part of its appropriation.
6. Defendants shall not divert water except to meet the demands for customers within the EBMUD utility district.
7. EBMUD shall not market nor sell any part of its water diverted hereunder to any third party.
8. All parties hereto shall cooperate in the development and implementation of scientific studies pertaining to the fish, wildlife and habitat issues which have been identified in this litigation. These studies shall be under the supervision of the special master. EBMUD shall contribute its fair share of the cost of programs to maintain a viable fishery and riparian habitat in the lower American River. EBMUD's "fair share" shall be determined by a comparison with contributions by other users and agencies and upon the recommendation of the special master with regard to individual projects.
9. The court retains jurisdiction for the purpose of implementing the Physical Solution and providing for its modification in light of the scientific studies required in paragraph 8, and in light of the studies and information which may be developed by various of the interested governmental agencies as well as the parties.
10. The Court is mindful that the strict adherence to the flow regimen could, in some circumstances, affect carryover storage in Folsom Reservoir and reduce the availability of water for instream public trust uses in subsequent months. It is the intention of the Court, however, to maintain the indicated flow regimen in the absence of convincing evidence, presented through the Special Master, that diversions accomplished during any particular month will adversely affect the ability to meet the Court's mandated flow levels in subsequent months.
11. Notwithstanding any other provisions of this Physical Solution, it is anticipated that during certain "dry year" periods, modification of the flow regimens herein may be permitted in limited circumstances to accommodate EBMUD. At such times of crises, and with the guidance of the special master, the court may temporarily modify the flow regimen if such modification can be effected without substantial harm to the fishery, habitat and other public trust values identified herein. Any such modification will be temporary and only in response to a showing of significant, specific, and immediate health risks to EBMUD. In evaluating circumstances in which a modification may be indicated, recreational in-



terests identified herein may be accorded a lower priority than they would otherwise obtain.

12. The court appoints [a] special master to aid and advise this court in the implementation of the Physical Solution. His duties shall include the development, coordination and monitoring of scientific research to determine optimum flows, releases, and storage patterns designed to protect the public trust values; the coordination of said studies with those of other agencies; advising the court as to developments affecting the rights of the parties hereto; evaluating dry-year flows and release patterns, and advising the court as to necessary modifications; and such other duties as the parties may request and the court require, consistent with the Physical Solution.

13. Each party may nominate an individ-

ual whose responsibility will be to communicate with the Special Master in the implementation of the Physical Solution. Said individuals will communicate regularly with the Special Master and will advance the recommendations of the parties with respect to any matters pertaining to the Physical Solution. Nothing contained in this Physical Solution, however, shall limit the right of the parties to file motions directly with the Court pursuant to its continuing jurisdiction.

The foregoing flow regimen is not merely interim in nature. It is intended as a permanent constitutionally mandated prerequisite to diversion, modifiable only upon the presentation of convincing evidence which demonstrates the need for such modification in accordance with the foregoing provisions of the Physical Solution (Statement of Decision at 108-111).

FUTURE CONCERNS

Judgment in the case was not entered until May 1990. Since January 1990, when the Statement of Decision was issued, the Special Master has been very active in initiating the studies called for within the physical solution. Moreover, Sacramento County and EBMUD have, for an interim period, agreed to evenly split all of the Special Master's costs.

In fashioning such a physical solution, Judge Hodge has in essence challenged all of the parties to work constructively toward a long-term solution to the problems presented. A major issue dealt with in the opinion, but not directly resolved in the physical solution, is the problems associated with cumulative impacts. Cumulative impacts are impacts to instream resources caused by the total diversions within a system as opposed to the incremental impact of any one diversion. Cumulative impacts on the lower American River would include all of the diversions noted in Table 1. In this regard, the court noted:

Finally the evidence is overwhelming that the cumulative impact of EBMUD's diversion along with those consumptive demands projected over the next few decades would cause irreparable damage to the American River, its fisheries and its riparian habitat. Consequently, both Ar-

ticle X, section 2 and [the] public trust doctrine require that this court's physical solution be considered a base line against which any future diversion or appropriation is to be measured. Cumulative impact inconsistent with the physical solution may compel a cessation of EBMUD's diversion. (Statement of Decision at 2-3).

Although the decision itself binds only EBMUD, it is clear that any ultimate solution of the problem will need to address cumulative demands on the river. Such a solution is possible. For example, certain instream flows could be mandated for the lower American River (such as apply to EBMUD) as a prerequisite to additional upstream diversions. This solution alone, however, may not adequately address the entire question at issue.

Other concerns are raised by the physical solution. For example, paragraph 3 of the physical solution reserves 60,000 acre-feet for future fishery releases. The physical solution is not clear about the source of water. Sacramento County has asserted that the water, when required, must come from EBMUD's entitlement of 150,000 afa. This appears to be the only logical reading of the provision, because the court can only control the actions of EBMUD. It cannot order the USBR, which is not a party, to

reserve or release even one drop of water. How the provision would, in fact, take effect is also not clear. EBMUD could be required to hold 60,000 acre-feet in storage from October to June or it could be precluded from diverting water unless the USBR maintains the 60,000 acre-feet in reserve.

Ambiguity over the operation of paragraph 3 may have been intended by the court. A number of provisions within the physical solution appear to read as if the

court were establishing instream criteria that must be met regardless of whether EBMUD actually chooses to divert water from the river. In this regard, it appears clear that Judge Hodge intended his opinion and the flow criteria established within the physical solution to be applied as broadly as possible. It also appears that his opinion, although binding only EBMUD, was intended to set a precedent in determining whether, or to what extent, additional diversions would be allowed.

POSSIBLE LONG-TERM SOLUTIONS

Adequately protecting instream values on the lower American River requires relatively high flow rates. Establishing flows at lower rates, without knowing more about the long-term impact of low flows on instream values, runs the risk of destroying those values. High flow requirements reduce the amount of time that water will be available for upstream diversions.

Establishing low flows for interim periods with the ability to increase flows if there are adverse impacts to the instream resource, even if acceptable instream protections are provided, creates great uncertainty for upstream diversions. It may be impossible to justify the cost of an upstream diversion facility without knowing the amount of water that will be available for diversion.

The only real certainty that can be injected into the process is mandating or encouraging entities to locate diversion points as far downstream as possible. This would require analysis of all of the existing and potential cumulative demands on the lower American River (Table 1). A determination would then have to be made as to which diverters could not reasonably and feasibly divert water downstream, as would be the case with most Placer County and El Dorado County demands and some demands within the eastern portions of Sacramento County. Water for these areas would be allowed to be diverted upstream. All other diversions would need to be located downstream. Although these downstream diversions would not ensure adequate flows within the lower American

River for instream protection, they could not, of themselves, contribute to instream injury within the lower American River.

In order to facilitate downstream diversions, legitimate concerns with respect to water quality would need to be addressed. A major element of this program would be watershed protection within the greater Sacramento River Basin. This could be accomplished through strict control of both point and nonpoint sources of pollution. Although this appears to be a major undertaking, existing law requires such protection. When this legal mandate is coupled with the fact that more than one-half of the population of California depends on surface water that either originates or is blended with Sacramento River water, the goal of watershed protection neither is nor should be dismissed as unrealistic.

The physical solution established by Judge Hodge has acted as a catalyst for a great deal of activity on the lower American River. The court's Special Master, in conjunction with the liaison group established by the physical solution, has had many meetings to design a workplan for the development and implementation of studies targeting instream flow needs on the lower American River. This group is also considering options to reduce the diversion pressure on the lower American River.

The SWRCB, on its own initiative, and also in response to the Hodge decision, has called all potentially affected parties together in informal meetings and intends to initiate hearings to establish new gen-

eral flow requirements for the lower American River. As part of these hearings, the SWRCB also intends to look at the question of appropriate points of diversion. Currently, there appears to be substantial cooperation between the Special Master, liaison groups, and the SWRCB.

EBMUD has initiated extensive environmental review of its water supply options, pursuant to the California Environmental Quality Act, including a review of all reasonable, feasible diversion and storage options for its American River water supply. This review has the potential of causing EBMUD to abandon its Folsom-South Canal point of diversion in favor of downstream diversion options that may not carry the severe limitations or diversions that exist within the physical solution.

Sacramento County, potentially a very large diverter of American River water, is in the process of developing a water use program that would (1) consolidate and better utilize existing surface water entitlements within Sacramento County, (2) implement conservation measures that would reduce the quantity of surface water needed within the county, (3) identify areas that can reasonably and feasibly be served from points of diversion at or near the mouth of the American River, and (4) develop a conjunctive surface and groundwater program that would allow Sacramento County to reduce or eliminate surface water diversions during dry and critically dry years.

The county's action has, in addition to the positive activities noted above, also created some counterproductive actions by potential upstream diverters. San Joaquin County, asserting that it is not bound by Judge Hodge's decision, has filed water rights applications for up to 322,000 afa

from points of diversion on the American River upstream from the protected lower river. These applications have been filed in spite of the potential impact that they might have on the instream values of the river and the fact that the county has reasonable, feasible diversion options from the Sacramento River.

In addition to these actions, the intention of the USBR is unclear at this time. Although the USBR has cooperated with the Special Master and the SWRCB, it has not taken a particularly active role in the process. This is somewhat surprising given the fact that it is the USBR that controls the flows on the lower American River.

These last points are of great significance. As noted above, the court's decision binds only EBMUD. As a matter of law, it does not bind nonparties to the litigation, including the SWRCB and the USBR. However, the court did look at the broader issues that exist on the river, and Judge Hodge stated that, in his view, the flow regime imposed on EBMUD was a "constitutionally-mandated prerequisite to diversion." Although any single future upstream diversion by entities other than EBMUD will need to be evaluated based upon reasonable and feasible diversion alternatives, the court has established an extremely strong precedent that cannot be ignored. Indeed, it may be that the precedent established by the decision is so strong that as a practical matter it will in effect bind others not parties to the litigation. That may at least in part be the driving motivation behind the court's establishment of a strong, active Special Master. There is simply no way that the court's decision will be allowed to sit dormant or be ignored by those who have or would like to have a presence on the river.

CONCLUSION

The conflict between water supply needs and instream protection has been addressed on the lower American River. A physical solution has resolved immediate concerns while acting as a powerful aid in addressing broader, long-term problems. The time-consuming and costly litigation that spawned the current activities will have been worthwhile if the parties in-

involved use what was learned through that litigation to assist in solving the remaining problems. There is a very real potential, however, that the time and effort invested in the litigation will be wasted if parties ignore the history of the conflict with EBMUD and attempt to proceed without regard to instream concerns. In most respects, the litigation may ultimately be

viewed as the easy part of the effort to preserve instream values. The cooperative effort to achieve a long-term balance that protects instream values and also addresses adequate consumptive needs will be both challenging and rewarding. One can hope

that the court's decision and analysis will serve as a constant reminder that when balance cannot be achieved, the only option left is harm to one of the competing demands.

REFERENCE

U.S. Bureau of Reclamation, Mid Pacific Region. December 1988. Draft. Environmental Impact Statement. American River Service Area Water Contracting Program.

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