

DEVELOPMENTS IN CALIFORNIA WATER MANAGEMENT

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INTRODUCTION

When media tycoon Ted Turner was asked where he would invest if he were trying to match his success in the cable television industry, his answer was surprisingly simple: water. Turner explained to his audience, a 1992 seminar at Harvard Business School, that the water business in many ways resembled the cable industry two decades before. Like cable, the water industry has a fragmented structure, steady demand, and fairly manageable regulatory requirements. (Byrne, 1996). Other capital managers are less attracted to the water business. Communities in the West have been fighting over water since the settlement days, and opportunities for conflict persist with rampant population growth and increasing attention to environmental issues associated with development. These investors would prefer to keep their capital in less unpredictable and politically volatile ventures.

California is on the cusp of major changes in water management policy. In the San Francisco Bay-Delta and Central Valley watershed, federal and state policy-makers are developing perhaps the most comprehensive environmental restoration and water management plan in American history. On the Colorado River, some of the most important negotiations in recent memory are occurring regarding the relationships between California, Arizona, and Nevada and the allocation of supplies within California. Water transfers have been recognized as perhaps the most effective way to balance water supply and demands, and policy makers have been struggling to resolve conflicts that have to this point limited implementation. Indeed, resolution of these key issues over the next three to five years largely will define the future of California water management for the next twenty-five to fifty years.

This article will discuss two policy themes that must be addressed to resolve these issues successfully. First, institutional reforms of water management are necessary to effectively incorporate environmental values into the economics of water allocation. Second, policy-makers and academics must realize that the public and communitarian values of water mean that (1) local rural support for water transfer agreements, which is very difficult to obtain, is nonetheless absolutely necessary; and (2) the issue of excess profits in water transfers must be handled appropriately in order to promote market-based water allocations.

INCORPORATING ENVIRONMENTAL VALUES INTO WATER ALLOCATION

Before the modern era of environmentalism, our society gave almost no value to water resources left instream. In Cadillac Desert, Marc Reisner tells the story of William Mulholland, the father of Southern California water development, telling Yosemite National Park's superintendent of his desire to "go in there and build a dam from one side of that valley to the other and stop the goddamned waste!" (Reisner, 1986). It is no secret that in the development of California's major water infrastructure, environmental protection was almost completely ignored. For the past two decades, we have been paying the price for this indifference.

The Owens Valley

In the 1970's, environmentalists challenged the legality of decades-old diversions of water by the Los Angeles Department of Water & Power in the Owens Valley. These diversions cut off freshwater inflow to Mono Lake, causing the lake's surface area to drop by one-third and one of the two principal islands to become a peninsula.

The lake contains no fish but supports a large population of brine shrimp that feed vast numbers of nesting and migratory birds. The reduced level exposed islands that housed the California Gull rookery to coyotes and other predators, resulting in the gulls' abandoning the exposed island. (Littleworth & Garner, 1995).

Ensuing litigation led to the landmark decision by the California Supreme Court in National Audubon Society v. Superior Court, where the court decided that the public trust doctrine applied to inland waters such as Mono Lake. The court ruled that by failing to consider environmental protection in licensing and permitting Mono Lake diversions, state administrative processes had failed to meet their duty to consider public trust values. (National Audubon Society, 1983). In the process of re-evaluating Mono Lake diversions to incorporate public trust factors, the Department agreed to a new diversion regime that provides a lesser amount of net water supplies from the lake's tributaries.

Endangered Species Protections in the Bay-Delta

The loss of water supplies in the Owens Valley put additional pressures on the Bay-Delta system, which provides imported water supplies through the federal Central Valley Project (CVP) and State Water Project (SWP, Figure 1, page 100). However, the extended drought of the late 1980's and early 1990's contributed to a precipitous decline of salmon that migrate through the Bay-Delta into the tributaries of the Sacramento River. In 1990, the winter-run Chinook salmon was listed as threatened under the federal Endangered Species Act (ESA) and as endangered under the California Endangered Species Act. The biological opinions enforcing the ESA with respect to CVP and SWP operations caused unpredictable shut-downs of Delta export operations during critical spring months when both consumptive and fisheries needs for fresh water are at their peak.

Water users were faced with unprecedented disruptions in water supplies, and negotiations began in earnest to reach a settlement on the amount of environmental water required to protect Bay-Delta water quality for endangered species and overall ecosystem health. (Wodraska and von Haam, 1996). These discussions led to the landmark 1994 Bay-Delta Accord, in which agricultural, urban, and environmental stakeholders agreed with federal and state resource agencies on new water quality standards in the Bay-Delta. The agreement included progressive assurances regarding Endangered Species Act implementation. The federal government

agreed that implementation of the Accord's more stringent environmental water quality standards would meet the water requirements for federally listed species, and if any new supplies were necessary, the federal government would acquire them through voluntary purchases. (Principles for Agreement, 1994). The Accord also set into motion the CALFED Bay-Delta Program, a joint state-federal planning entity charged with developing a long-term, comprehensive plan for the Bay-Delta and Central Valley watershed to improve water supply reliability, water quality, ecological health, and natural disaster avoidance. (CALFED Bay-Delta Program, 1998).

CALFED and the Notion of Environmental Water Transfers

The CALFED process has considered numerous alternatives for meeting both consumptive and environmental water needs. Alternatives combine new surface storage dedicated to agricultural, urban, and environmental uses, additional reliance on groundwater storage and conjunctive use, and significant government institutional changes for securing environmental water through the marketplace.

Historically, involuntary reallocation has been the primary governmental method for transferring water from consumptive to environmental uses. Court decisions on the public trust doctrine, water rights decisions by the State Water Resources Control Board, and implementation of the Endangered Species Act are examples of regulatory, uncompensated reallocations. The CALFED process creates an opportunity for more progressive and effective ways of transferring water to the environment. For example, some interests have proposed creation of an "environmental water agency." Essentially, one entity would be solely responsible for acquiring and managing water for fisheries protection. Its supply would be a combination of (1) dedicated capacity in new and existing storage and conveyance facilities; and (2) supplies purchased through the water transfer market. This entity would make all decisions regarding volume and timing of environmental releases of flows, assuming the responsibilities currently divided among the U.S. Fish & Wildlife Service, National Marine Fisheries Service, Bureau of Reclamation, California Department of Fish & Game, and California Department of Water Resources. The entity would work with an adequate, quantified water budget. Such an arrangement might yield several benefits. Current regulatory decision-making processes do little to encourage the regulator to account for the economic impacts of mandatory reallocations, because the cost to the regulator for acquiring that water essentially is zero; the person who

gives up the water bears the entire cost of the reallocation. By contrast, in a system where the regulator acquires environmental water on the market, that water has a definite cost. Because the price reflects the value both of what the transferor is giving up and what the regulator is gaining, a more economically rational transaction takes place. For example, if given the choice, the regulator will seek the lowest-priced water first. This water typically will have less social utility than other higher-priced sources. Therefore, transferring that water to environmental use induces less economic impacts but is just as useful to the environment as other, more costly sources of water.

Consolidating environmental water management functions would enhance organizational efficiency, as well. Today a myriad of federal and state resource agencies have responsibilities for environmental water management, and coordination and integration problems occur from time to time. For example, the state Departments of Fish & Game and Water Resources have sometimes overlapping roles, and staff of the U.S. Fish & Wildlife Service often disagree with the Bureau of Reclamation's recommendations on a particular issue affecting instream flow requirements. Resolution of these inter-agency differences often does not occur in a timely manner. Combining the expertise of these environmental managers into a single entity where a unified decision must be made would facilitate more lasting and powerful environmental decisions. The success to date of the Accord and the CALFED Bay-Delta Program suggests the effectiveness of this sort of coordinated state-federal decision-making.

The question of funding is critical to any discussion of environmental water transfers. To make environmental water transfers work, funding must come from diversified sources, both public and private. Clearly, there is a role for public funding for enhanced environmental water purchases. Both the State of California and Congress have recognized this fact through a recent major state bond act and a new federal appropriations program for CALFED's environmental program. (Safe, Clean, Reliable Water Supply Act, 1996, and Energy and Water Development Appropriations Act, 1997). At the same time, water users should be prepared to pay a fair share of costs for restoring the environment. Federal water contractors already pay significant funds (\$35 million annually on average) into a water purchase account through fees on water use pursuant to the Central Valley Project Improvement Act. (Central Valley Project Improvement Act, 1992). Some level of water-user funding is under consideration through the CALFED process, and it is critical that stakeholders reach consensus on this issue.

WATER: A PUBLIC OR PRIVATE RESOURCE?

Clearly, an workable market for water transfers is necessary to meet future urban water needs. Much of the debate over water transfers has centered on the private and public values of water. This issues has arisen in two contexts: (1) the role of locally affected areas in approving a proposed transfer; and (2) the issue of "excess profits" from sale of a "public" resource.

The Importance of Local Support

In the early 1990's, sectors of the business community and urban water agencies relied on economic arguments to justify their support for "user-initiated" water transfers. A user-initiated transfer is one where the actual end-user of the resource (in most cases an agricultural landowner) contracts directly with a transferee (for example, an urban water agency) to transfer all or a portion of the supply it receives from its water district. This arrangement intentionally removes the water district's ability to block or place conditions on the agreement.

The rationale for this approach stressed the fact that by letting the farmer and city negotiate directly, the final price would reflect the true societal value of the water. (Bay Area Economic Forum, 1991). Farmers whose water generates lower rates of return through water-intensive, lower-value crops such as alfalfa, cotton, and irrigated pasture would receive attractive compensation from a buyer whose customers generate much higher revenue from that same amount of water. In the water-intensive sectors of the urban economy, such as silicone chip manufacturing, a unit of water can generate one hundred times more revenue than in lower-value agriculture. (Spectrum Economics, 1991). In this manner, the market would move water from lower-value uses to higher-value uses, increasing the overall benefit of the water resources to the economy as a whole.

This policy direction led to enactment of the water transfer provisions of the federal Central Valley Project Improvement Act (CVPIA) in 1992. For the first time, individual water users within the federal Central Valley Project could transfer water to buyers outside the CVP's service area. (Central Valley Project Improvement Act, 1992). Public policy experts and economists alike predicted near-term shifts of water resources from agricultural to urban use. As it has turned out, local opposition to user-initiated transfers has effectively blocked all proposed agreements under the CVPIA.

A limited approval role for local water districts is included in the water transfer provisions of the CVPIA,

though the legal extent of the local district's "veto" authority is debatable. Nevertheless, one cannot underestimate the power of strong, organized local opposition to a particular water transfer agreement. After passage of the CVPIA, Metropolitan tried unsuccessfully to consummate a water transfer with Areias Dairy Farms in the northern San Joaquin Valley. Local opposition was vociferous, and the local water district threatened litigation over the agreement. (Grossi, 1994). In response, the agreement was restructured consistent with local concerns. However, the dairy industry took a downturn, and due to these and other financial considerations negotiations were never completed.

One of the lessons learned was that in order to make a water transfer work, the affected community must support it. In addition, Metropolitan decided that it was preferable to deal directly with both the local water district and individual water users when appropriate. In many cases, purchasing water supplies directly from the district rather than individual users increases transactional efficiencies and better addresses broader community concerns.

This new approach bore fruit with recent water banking agreements between Metropolitan and agricultural water districts in the San Joaquin Valley. In 1994, Semitropic Water Storage District and Metropolitan agreed to an innovative water banking program. Metropolitan delivers a portion of its State Water Project supplies to Semitropic in certain years, and Semitropic uses this supply to recharge its aquifer through spreading basins or in lieu of pumping groundwater for irrigation. Upon request, Semitropic returns supplies to Metropolitan either by pumping the water from its groundwater basin through pumpback facilities into the State Water Project's California Aqueduct or by providing Metropolitan with an equivalent portion of Semitropic's SWP supplies in exchange. (Semitropic, 1994). This program has been embraced by agriculturists and urban interests alike. For southern California, the program increases the flexibility for optimizing State Water Project deliveries over varying hydrologic years. For Semitropic, the program has brought state-of-the-art groundwater management infrastructure to the area, increases flexibility for irrigation management, and improves water quality in the aquifer.

A similar agreement recently was signed between Metropolitan and the Arvin-Edison Water Storage District. As in the case of Areias Dairy Farms, many local interests were alarmed at the prospect of entering into a water management agreement with a southern California water agency. (Benson, 1996). Staff from both agencies worked feverishly on changes to the

program to allay these concerns, attending scores of public meetings and brainstorming additions and subtractions to the proposals to make it mutually beneficial from both water management and local political perspectives. All of this work, totaling hundreds of person-hours, finally paid off with a water storage agreement that ultimately was embraced by most of the local community. In exchange for storing a portion of State Water Project supplies in the Arvin-Edison service area, the region will see improvements to its water management infrastructure that will put the region in a better position for meeting its future water needs.

The moral of these stories is that successful water transfer and storage agreements must be "win-win" arrangements for both sides. Fully addressing the needs of local communities requires more creativity and more work than the simpler water transfers envisioned a decade ago, but it is the only way to make water transfer and storage agreements actually happen within the reality of California water politics.

"Excess Profits" and Privatization of a Public Resource

One key policy concern regarding water markets is whether individuals participating in market transactions may receive unfair windfalls. Throughout the western states, water resources are associated with strong community values, and in many cases water is available only by virtue of publicly subsidized water supply projects.

In the passage of the CVPIA, considerable debate emerged regarding the appropriateness of private interests selling subsidized CVP water for a profit. As a result, the Act includes a provision that the federal government must receive full cost for any water transferred to a non-CVP buyer. (Central Valley Project Improvement Act, 1992). In effect, the Congressional policy was that you could transfer the CVP water, but not the public subsidy.

Under some circumstances, greater reliance on the market may raise the concern that a lack of competition could result in excess (or monopoly) profits to individuals who choose to market water. Indeed, throughout the West, the potential for enormous profits has encouraged a variety of entrepreneurs and corporate interests to consider speculating in water market transactions. Like electricity, natural gas, and other infrastructure services, virtually every household and business relies on water to some extent. In these other utility industries, public policies have often emerged to protect consumers from the high prices that could result from the exercise of monopoly power. In the water market, as elsewhere,

when there are numerous potential sellers and buyers, noncompetitive prices and excess profits may not be a serious concern. However, under circumstances where the market may be dominated by a relatively small number of sellers or buyers, policy makers may seek to develop regulatory or other approaches to help assure that the public receives water at competitive prices.

Finally, the public values associated with water in the western states cannot be ignored. Despite the current trends toward privatization of utilities industries, the widely held perception of the public nature of water resources will temper the move toward pure market-based approaches. In the future, would-be water marketers must learn to appreciate both the private and public aspects of this vital resource if we are to achieve the considerable potential of market forces to effectuate better water resource allocation and management.

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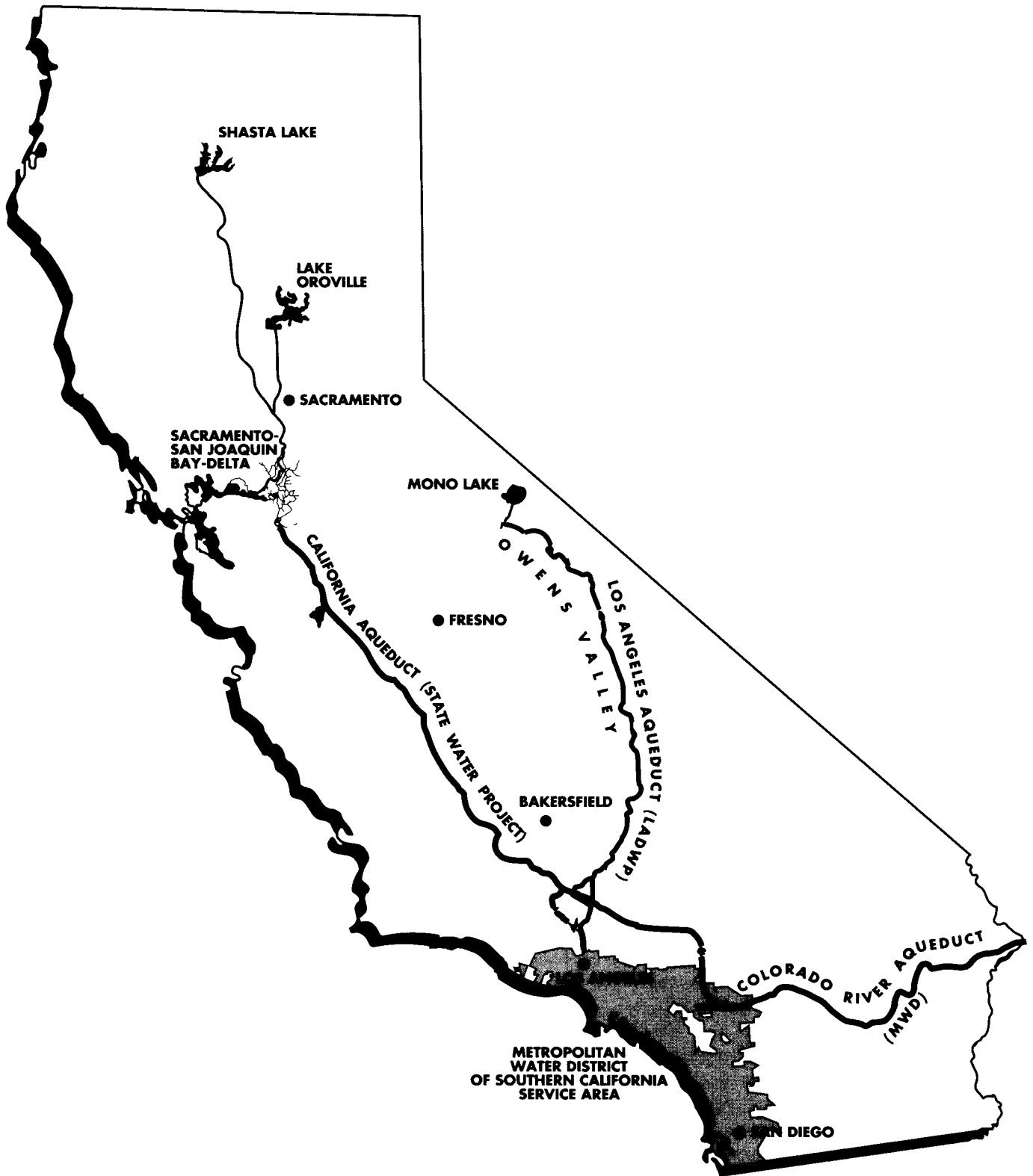


Figure 1 Major features of State Water Project and Central Valley Project
(Map by Metropolitan Water District of Southern California)