

UCLA

California Policy Options

Title

Managing California's New Water Wars

Permalink

<https://escholarship.org/uc/item/50b478zt>

Authors

Brackman, Harold
Erie, Steven P

Publication Date

1999

MANAGING CALIFORNIA'S NEW WATER WARS

**Harold Brackman, Historian and Consultant, Museum of Tolerance and
Steven P. Erie, Associate Professor of Political Science, History and
Urban Studies, U.C. San Diego**

Challenges to California's Water Project Empire

Like a stream that runs underground only to resurface, the challenge of meeting California's water needs is once again at the center of the Golden State's politics.¹ From the controversy over the building of Los Angeles' Owens Valley aqueduct before World War One, to the campaigns for and against the Colorado River Aqueduct and the Central Valley Project between the world wars, to voter approval of the State Water Project in 1960 and rejection of the Peripheral Canal initiative in 1982, successive generations of Californians have fought epic water wars over how best to guarantee the supply of a resource which has contributed much more than gold ever did to the Golden State's growth and prosperity.²

With California's 1998 population of 33 million forecast to grow to 48 million by 2020, state policy makers are being confronted with hard choices about insuring water supply, reliability and quality in a political environment which also demands unprecedented sensitivity to ecological concerns, cost effectiveness, and consensus building at the regional, state and national levels. The stakes involved are huge. By 2020, in the absence of new policies, California will face annual water shortfalls of three million acre-feet in normal rainfall years and seven million acre-feet in drought years. (An acre-foot is the volume of water covering an acre of land one foot deep. With conservation, one acre-foot --326,000 gallons--can sustain two families of four for a year.)³

If rain fell evenly over California, the 22-inch annual average would meet most demands throughout the state without the need for man-made water projects. But instead California has experienced what Carey McWilliams called "an upside down pattern of development." The greatest twentieth-century population growth has occurred in the South in inverse relationship to the North's abundant water resources. Los Angeles County alone contains a third of the state's population on only six percent of its habitable land but with less than one percent of its stream flow. With Southern California's total population projected to increase from 17 million to 25 million in the next quarter of a century, water scarcity outranks traffic congestion as the region's greatest threat to sustainable growth.⁴

Upside Down Development

Today's water wars threaten the complex and interrelated local, regional, state and federal water project empire built from the Progressive era onward to resolve the state's "upside down pattern of development" by bringing Northern California water to the Central Valley and Southern California, and Colorado River water to Southern California. The main pillars of this empire are the Los Angeles Aqueduct, the Metropolitan Water District's Colorado River

Aqueduct, the federal Central Valley Project, and the State Water Project and California Aqueduct.

In 1913, L. A.'s Department of Water and Power (DWP) completed its single-handed construction of a 238 mile-long aqueduct to the Owens Valley that later was supplemented by an extension to the Mono Basin in the 1940s and by a second aqueduct completed in 1970. Up until the 1990s, when state environmental regulators ordered reductions in Los Angeles' Mono Lake and Owens River deliveries, the two aqueducts provided 445,000 acre-feet--up to 70 percent--of the 640,000 acre-feet of water annually consumed by DWP's 3.7 million customers.⁵

Joint Projects

California's other great water projects have been products not of "go it alone" local endeavor but of regional, statewide and even interstate collaboration. In the 1930s, the Metropolitan Water District of Southern California (MWD or Metropolitan), initially a regional partnership of Los Angeles and its suburbs, built the 242 mile-long Colorado River Aqueduct which has a carrying capacity of 1.2 million acre-feet annually. However, MWD potentially could lose more than one-half the water conveyed through its aqueduct as a 1963 Supreme Court decision finally is enforced limiting MWD's Colorado River entitlement to 550,000 acre-feet annually. Through the Imperial Dam, All-American and Coachella Canals, Southern California's major agricultural water agencies--the Imperial, Palo Verde, and Coachella Valley irrigation districts--gain access to their enormous Colorado River entitlement of 3.85 million acre-feet. Today, however, California's total annual entitlement from the Colorado River is in the process of being reduced to 4.4 million acre-feet from current consumption levels of 5.2 million to 5.3 million acre-feet.⁶

In the 1930s, the U.S. Bureau of Reclamation began construction of the Central Valley Project (with a capacity of 4.1 million acre-feet per year), designed primarily to supply water to San Joaquin Valley farmers but now serving urban users in the Central Valley and Bay Area. (Even though San Francisco early in the century built its own pipeline to the Hetch-Hetchy reservoir near Yosemite, South Bay areas such as Silicon Valley came to rely upon Central Valley Project water.) Finally, the State Water Project--featuring the 444 mile-long California Aqueduct conveying 2.1 million acre-feet of water annually to Central Valley and Southern California urban and agricultural users--was built in the 1960s. Except for the lack of a cross-Delta conveyance system, the California Aqueduct has the capacity to carry 4.1 million acre feet yearly.⁷

Four Controversies

This essay examines four major controversies threatening California's water project empire. The new water wars are being fought over (a) plans to fix the fragile Bay-Delta ecosystem; (b) efforts to make California water agencies reduce their consumption of Colorado River water; (c) San Diego's purchase of water from the Imperial Valley; and (d) Los Angeles' historic claims to Owens Valley and Mono Basin water. In each of the four contested policy areas, we explore the

history and current status of the controversy, focusing on the actors and interests involved, and analyze major policy issues such as the choices now facing decision makers or the lessons to be drawn from decisions recently made.

The CALFED Bay-Delta Program

If voter approval in 1960 of the nearly \$1.8 billion State Water Project was the crowning achievement of California's water development-oriented Progressivism, among its most serious defeats was voter rejection in 1982 of a state ballot initiative to build a \$1.3 billion Peripheral Canal, which would have diverted to the California Aqueduct 2.5 million acre-feet of Sacramento-San Joaquin Delta water that otherwise is natural runoff into San Francisco Bay. Despite the support of agribusiness, major water districts in Central as well as Southern California, and the California Departments of Water Resources (DWR) and Fish and Game, the Peripheral Canal initiative was defeated decisively by a coalition of environmentalists, agricultural interests and Northern Californians who voted nine to one against the ballot measure.⁸

Just as the statewide drought of the late 1970s gave impetus to the ill-fated Peripheral Canal proposal, the drought of the early 1990s, together with the prospective reduction in California's share of Colorado River water and the deterioration of the Delta's fragile ecosystem, has spurred a new attempt--the CALFED Bay-Delta Program--to complete the last unfinished link in California's empire of major water projects.

History: In December 1994, the Bay-Delta Accord was signed by a consortium of 14 state and federal agencies including--on the state side--the State Resources Agency, the Department of Water Resources, the Department of Fish and Game, and the State Environmental Protection Agency, and--on the federal side--the Department of the Interior, the Army Corps of Engineers, National Marine Fisheries Service, and the U.S. Environmental Protection Agency. The Accord was a three-year stopgap measure (since extended through 1998) meant to stabilize--pending a long-term solution--the water quality, ecology, and habitat of the Sacramento-San Joaquin Delta that provides at least a portion of the drinking water for 22 million Californians (16 million in Southern California) and irrigates five million acres of the Golden State's \$24 billion per year agricultural industry.⁹

Though all of the signatories were governmental entities, the Accord also served as a flag of truce for California's triad of competing water interest groups and stakeholders. Urban water districts had concerns about both water reliability and brackish water with high bromide content. Agribusiness desired more water storage capacity while disliking environmental and endangered species mandates reducing irrigation flows. In the wake of the 1994 Republican victories in the state legislature and Congress, environmentalists became less insistent on new regulations and more responsive to market incentives. Thus all three interest groups, each for their own reasons, initially struck a more conciliatory pose toward the new campaign to "fix the Delta."¹⁰

In May 1995, the Accord evolved into a formal planning mechanism--the CALFED Bay-Delta Program--that also incorporated public and interest group participation through a 32-member Bay Delta Advisory Council (BDAC). Starting with four prime objectives--ecosystem restoration, efficient water use, improved water quality, and safer levees--CALFED added the development of a watershed management program and design of a water transfer policy. It also announced that it would be guided by six "solution principles": reduced conflict between beneficial uses (e.g., fisheries, irrigation, water quality), equitable distribution of benefits and burdens, affordability, broad political support, durable implementation, and no hidden consequences or "redirected impacts" inside or outside the Delta.¹¹

Not surprisingly, CALFED began experiencing pressure as well as persuasion from its interest group advisors. Central Valley farmers, acting through the Wilson Administration, convinced CALFED that an early proposal to retire 800,000 acres of farmland would cause a "redirected impact" in violation of the solution principles. Environmentalists, acting through the U.S. Interior Department, attempted to override an interim understanding that no more than 1.1 million acre-feet of water would be diverted to protect fisheries. Ultimately, a compromise was reached whereby farmers would be paid for any additional water diversions at their expense to benefit the salmon. CALFED suffered a major defeat in 1998 when the state legislature failed to place on the ballot an omnibus \$1.7 billion water bond favored by the Governor because of strong environmental opposition to the inclusion of \$300 million for planning and potential construction of reservoirs and off-stream storage.¹²

Status: Faced with growing conflict among its stakeholders, CALFED in early 1998 abandoned its original strategy and schedule for issuing a specific, detailed blueprint. Instead, it announced that it would submit for public review a 2200-page environmental impact statement/report (EIS/EIR) offering three broad programmatic alternatives from which one would be chosen as the basis for drawing up "a preferred alternative" for restoring the Delta.¹³ The three proposed alternatives were:

1. "Alternative System Conveyance"--involving minor structural changes to improve fish and flow control barriers in the South Delta;
2. "Modified Through Delta Conveyance"--dredging of a new shallow channel to improve water flows from north to south;
3. "Dual System Conveyance"--construction of a new canal to divert water Sacramento River water around the Delta to points south.¹⁴

With total capital cost estimates over 20-30 years ranging from \$9 billion (Alternative 1) to \$10.5 billion (Alternative 3), all three alternatives envisaged \$1 billion for restoring the Delta ecosystem and Central Valley river habitat. Other common elements included substantial expenditures to shore up Delta levees, reduce pollution from mine and farm runoff, encourage greater water efficiency, enlarge water storage capacity, foster a market for water transfers, and increase diversion through a new connection with State Water Project and Central Valley Project pumps in the South Delta. Alternative 1--so-called "CALFED Lite"--was least objectionable to

environmentalists because of its emphasis on conservation rather than construction. Alternative 3--“Son of Peripheral Canal”--was most controversial for proposing construction of an “isolated conveyance facility,” CALFED’s euphemism for a new canal though with only one-half the carrying capacity of the defeated Peripheral Canal. Alternative 2, most congenial to Delta farming interests, did too much to please environmentalists and not enough to please Southern California stakeholders concerned about greater water quality, supply and reliability.¹⁵

The unveiling of the alternatives was followed by a 75-day public comment period marked by an escalation of the interest group clashes that already were a regular accompaniment of the CALFED process. Environmentalists were divided. Those from the Central Valley were willing to consider a comprehensive plan emphasizing environmental enhancement and conservation measures. Yet those from the Bay Area unleashed an immediate and withering barrage. “CALFED seems intent on ignoring the lessons of history,” said Environmental Defense Fund attorney Tom Graff. He called the EIS/EIR “a document stuck in reverse, a wishful throwback to the era of big dams, sterile channels, and lifeless canals.”¹⁶

In response, a statewide business coalition, including 28 California CEOs, endorsed decisive action, but focused its lobbying of President Clinton and Governor Wilson on “an expanded voluntary water transfer market [that] is essential to any successful long-term solution.” Increased water transfers were looked upon favorably by Southern California’s large agricultural interests, but not necessarily by Delta farmers. Despite the inclusion in all three CALFED alternatives of features such as increased water storage capacity, universally favored by agricultural interests, the Congressman representing the Delta threatened to scuttle CALFED in the House Appropriations Committee because of local agriculture’s dislike of another element shared by the three proposals--the Ecosystem Restoration Program Plan (ERPP), envisaging the conversion of between 138,000 and 191,000 acres of the Delta to wildlife habitat or “wildlife friendly agricultural land.”¹⁷

Southern California’s Metropolitan Water District also reiterated its commitment to play a leadership role in CALFED. A new canal carrying fresh water around the brackish Delta would go far toward resolving its water quality concerns, while increased diversionary capacity might make it easier for MWD to conclude water acquisition deals with Central Valley suppliers such as the Arvin-Edison Water Storage District. Nevertheless, Metropolitan asked CALFED for more “local assurances” that Southern California growth projections would be taken into account and that the Southland would not be expected to provide “approximately three-quarters of total conservation and reclamation for the State.” Yet threatening the united front of Southern California water agencies in favor of CALFED, the San Diego County Water Authority (SDCWA)--angry at MWD for its criticism of San Diego’s plan to buy Colorado River water from the Imperial Valley--demanded its own “local assurance package” from MWD before agreeing to any CALFED alternative.¹⁸

In May 1998, in the midst of mounting controversy, Governor Wilson met with Interior Secretary Bruce Babbitt to issue a joint declaration recommitting the state and federal governments to the issuance of a final draft plan for the Delta by year’s end.¹⁹

Policy Issues: CALFED faces daunting financial and political challenges in structuring a final plan for Delta restoration. To date, with the legislative defeat of the 1998 bond measure, funding availability is limited to \$600 million under Proposition 204, the 1996 California water-quality initiative, and \$430 million in authorized federal money, only \$85 million of which was appropriated in 1998. Even if more substantial federal support materializes, CALFED again will have to turn to the governor, state legislature and, ultimately, the voters for approval of a new multi-billion dollar ballot initiative.²⁰

Aside from securing financing and evaluating the technical merits of the three proposals, CALFED will have to decide whether the alternatives can navigate their way through the turbulent waters of state electoral politics. The crucial political calculus is this: should CALFED choose a plan (Alternative 3) to build a new canal which could strongly mobilize a powerful supportive constituency--Central Valley and Southern California urban and agricultural water users--but is also sure to provoke vehement Northern California and environmental opposition? Or should it choose a more modest approach (Alternatives 1 or 2) without the canal that won't engender as much opposition but which also won't galvanize powerful Central Valley and Southern California support?

Unfortunately for CALFED, no matter which alternative it chooses, the prospects for success are clouded by the lingering shadow of Peripheral Canal's 1982 defeat. In a 1997 poll, opponents of a new canal outnumbered supporters 64 to 20 percent in Northern California and 45 to 36 percent in Southern California. However, public opinion still is very unformed and ill-informed, with 70 percent of Californians unable to identify the location of the Delta. Public attitudes about the need for a sweeping new program also could be affected by recent emotionally-charged public health findings that the process currently used to disinfect drinking water from the Delta produces a byproduct, trihalomethanes (THMs), that may cause cancer and increase the risk of miscarriages. Yet working in CALFED's favor was the strong support shown for Proposition 204, sold to voters as "The Safe, Clean, Reliable Water Supply Act," which was approved by a 63 percent voter majority.²¹

Betting on a turnaround in public opinion, CALFED could unveil a detailed, final plan for the Delta. Increasingly, however, political observers speculated that CALFED would, once again, "keep its options open." This would mean issuing a "final draft plan," with emphasis on its tentative, "draft" status rather than its detailed finality. Hence, the process of public review--and policy refinement--would be prolonged into 1999, with California's new governor perhaps willing and able to invest fresh political capital in CALFED and Delta restoration.²²

The California 4.4 Plan

In 1963, the U.S. Supreme Court, in *Arizona v. California*, placed the Golden State under a Damoclean sword by upholding the 4.4 million acre-feet limitation on California's annual entitlement to Colorado River water. In 1989, the three lower basin states--California, Arizona, and Nevada--for the first time fully utilized their combined Colorado entitlement of 7.5 million acre-feet. Declarations of a "surplus" (to which MWD is legally entitled to one-half) by the U.S.

Secretary of the Interior have provided a temporary reprieve to California, which has continued its Colorado River overdraw to between 5.2 and 5.3 million acre-feet per year.²³

Unfortunately, the overhanging sword has, if anything, been given a sharper edge in recent years by the completion in 1993 of the Central Arizona Project delivering water from the Colorado to Phoenix, Tucson and Central Arizona farmers as well by the establishment in 1996 of the Arizona Water Banking Authority, facilitating that state's storage of Colorado River water both to replenish its aquifers and for sale interstate to Nevada. Currently, the Colorado River provides 14 percent of California's statewide water needs, but 65 percent of all imported water used in Southern California. As Interior Secretary Bruce Babbitt repeatedly has warned even while postponing a decision through his yearly declarations of Colorado River "surplus," a day of reckoning is coming for California unless it learns to live with its legal entitlement of 4.4 million acre-feet per year. The California 4.4 plan is an effort to dodge the future disaster of chronic water shortage by gradually achieving a targeted reduction of approximately 20 percent in the Golden State's dependence on the Colorado River.²⁴

History: The California 4.4 Plan is an evolving blueprint under preparation by California's Colorado River Board in cooperation with DWR Director David Kennedy. The Board is an advisory body whose membership includes Southern California's six major water agencies--Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley Irrigation District, Los Angeles Department of Water and Power, Metropolitan Water District of Southern California and the San Diego County Water Authority. Its dual task is to forge a California consensus behind a plan that also can win the approval of the other Colorado River basin states as well as federal authorities. Neither task has proven easy. To mediate intrastate differences, particularly between the Metropolitan Water District and the San Diego County Water Authority, seasoned Middle East peace negotiator Abraham Sofaer was retained in 1996; he gave up in less than a year. The interstate negotiations, sometimes called "the 7/10 process" because the Colorado River Compact involves seven states and ten Indian tribes, has continued sporadically since the early 1990s, with the non-California parties agreeing on little except that California is a chronic water guzzler that must be made to consume less.²⁵

Despite the obstacles, momentum built behind the Plan in late 1997. In December, Interior Secretary Babbitt in a major policy speech focused attention on profligate water use by California agriculture, thus increasing pressure on the Golden State to live within its 4.4 million acre-feet Colorado entitlement. Two months earlier, Governor Wilson had signed legislation giving DWR Director Kennedy authority to mediate the MWD-SDCWA dispute over using MWD's Colorado River Aqueduct to carry San Diego's purchase of water from the Imperial Irrigation District (IID). A related dynamic was a lawsuit to determine how much MWD could charge to "wheel"--or convey water--through its aqueduct. In January 1998, a Superior Court judge ruled that the agency only could charge for "point to point" transportation costs--but could not bill for system-wide capital improvements such as the \$3 billion MWD planned to spend to build the new Eastside Reservoir and Inland Feeder Pipeline.²⁶

DWR Director Kennedy then proposed a two-tier pricing system--higher charges when the aqueduct was fully utilized by MWD, lower charges when there was unused capacity--as a compromise solution for calculating the wheeling costs that San Diego would have to pay for transporting its Imperial Valley water purchases. This proposal formed part of the revised California 4.4 Plan which, when shared with the other western states, was formally incorporated into a new comprehensive California Water Plan made public in January 1998. The Plan then became the centerpiece of a strong lobbying campaign in favor of the IID/SDCWA water deal conducted by the Governor's Office.²⁶

Status: Rejecting the search for one "magic bullet" solution, the California 4.4 Plan explored a range of approaches for reducing California's dependence on Colorado River water, including heightened conservation, more groundwater extraction, water transfers and banking, new storage and conveyance facilities, desalting plants, and improved reservoir operations. It ultimately suggested a two-stage approach, starting with an emphasis on conservation and water transfers within California. The conservation agenda advocated seepage recovery by cementing the unlined sections of the All-American and Coachella Canals. It also addressed the U.S. Bureau of Reclamation's demand for "quantification" or measurement for the first time of specific levels of water consumption --and waste--by the Imperial Irrigation District and Southern California's other large agricultural water districts. Beyond quantifying water use, the harder issue of actually imposing numerical use reductions would be put off until stage two.²⁷

In terms of water transfers, the California 4.4 Plan endorsed rural-to-urban sales which have been encouraged under California law since 1986. In 1989, the Metropolitan Water District agreed to purchase 106,000 acre-feet of conserved Colorado River water from the Imperial Irrigation District for \$233 million which would be spent to reduce flooding problems and discharges into the Salton Sea. In 1991, emergency legislation, since made permanent, established a State Drought Water Bank to purchase and transfer unused supplies. Under the federal Central Valley Project Improvement Act passed in 1992, which also authorized water sales, MWD attempted a complicated and controversial acquisition of Central Valley water from the Arvin-Edison Water Storage District. Later, MWD was exploring additional water transfers with the Cadiz Corporation and the Coachella Valley Irrigation District.²⁸

With these precedents in mind, the 4.4 Plan favored the development of a broader water market including the much larger and even more contentious proposed purchase and conveyance by means of the Colorado Aqueduct of up to 200,000 acre-feet per year by the San Diego County Water Authority from the Imperial Irrigation District. Ironically in light of their feuding, MWD and SDCWA both have made water transfer agreements with the Imperial Irrigation District which are integral to the California Plan's aspirations to reduce Colorado River water consumption.

Beyond water banking and transfers within California, the California 4.4 Plan also envisages California's participation in the interstate market that began to develop in the wake of new Interior Department rules. One near-term possibility would be for California to buy Colorado River water outside the limits of its entitlement from the Arizona Water Banking

Authority. Later, California might even be able to buy Colorado River water from the upper basin states of Colorado, Utah, Wyoming, and New Mexico. So far, the only proposed interstate deal involving California featured MWD and the Southern Nevada Water Authority, which agreed in 1995 to jointly finance lining sections of the All-American Canal near the Imperial Valley in exchange for water banking and greater storage in Lake Mead. Unexpectedly, the deal was blocked by the California Governor's Office which viewed it as an unconstitutional intrusion by MWD upon state sovereignty.²⁹

Another proposal looking beyond California's borders is a revamping of river and reservoir operations on the Colorado to allow more flexible standards for maintaining water levels. This would make it easier for California to continue to overdraw Colorado River water while it gradually reduces consumption down to its 4.4 million acre-feet entitlement.³⁰

Policy Issues: The California 4.4 Plan won broad if not deep support during 1998 among major stakeholders in Southern California's water future. Despite their bitter disagreements, MWD and SDCWA both endorsed it. Its advocacy of water markets was embraced, not only by "water farmers" looking for profits, but by environmentalists who saw rural-to-urban transfers as a strategy for removing land from agricultural use and also as an alternative to more dam and storage construction. Today's enthusiasts, however, may eventually have second thoughts.³¹

In terms of the imperative of reducing Colorado River consumption, rural-to-urban transfers have a seductive logic. MWD, despite an aqueduct with a 1.2 million acre-feet carrying capacity, only has a fourth priority claim to Colorado River water of 550,000 acre-feet annually. The unused aqueduct space--if and when the MWD loses its "surplus" allocation of 750,000 million acre-feet--could be used to transfer to urban consumers water purchased from agricultural users.³²

The problem with this logic is that it only works if the water sold is actually conserved by farmers. If they merely pass through water to which they have the rights but don't reduce their own consumption (thus continuing wasteful practices), there will be no reduction in California's draw on the Colorado River. Such "paper" transactions, as Interior Secretary Babbitt has warned, will violate the "beneficial use" requirements of federal as well as state water law. A bona fide water market could mean dramatic changes in the life of agricultural California, including the prospect of fallowing (the temporary or permanent removal of land from cultivation). Such a result may please urban water users and environmentalists, and not bother absentee owners of water rights (who own over one-half of Imperial Valley farmland), but--as the Imperial County Farm Bureau has cautioned--it could have a harmful impact on what remains of rural life in California. The competitive dynamics of a water market, especially during future economic downturns, are not likely to reduce traditional animosities between those who live on the land and those who live off it. Pro-market environmentalists need to balance the benefits of less land under cultivation against the costs of accelerating the concentration of agricultural land ownership and encouraging the rise of a new class of water speculators.³³

This is only one example of how the California 4.4 Plan, by putting off hard choices now, may exact a high price later in disappointed expectations. It leaves until a vague "stage two" decisions that ultimately may have to be made between building new canals and reservoirs or cutting back on consumption in order to reduce the state from 5.3 million to 4.4 million acre-feet of Colorado River water use. Arizonans may at some point be willing to sell Californians stored Colorado River at premium prices, but they are not likely ever to look kindly at California proposals for more flexible definitions of the water level in Lake Mead (the reservoir behind Hoover Dam) to make it easier for California to claim extra Colorado River water in normal, non-surplus years. Such proposals run the risk of reinforcing skepticism in the other western states and in Washington about whether California truly has reconciled itself to living within the limits of the 4.4 Plan.³⁴

The SDCWA/IID Water Transfer

San Diego County--with a 2.7 million population and a \$87 billion annual economy--has lived in the shadow of even more populous, prosperous, and powerful Los Angeles for over a century. Facing an increase of one million new residents by 2015, adding 20 percent to its water needs, San Diego's desire for "water independence" from Los Angeles-based MWD appears understandable. At present, San Diego is at the "bottom of the spigot," with MWD supplying up to 90 percent of its water needs.

While San Diego water leaders claim their relationship with MWD is "colonial," it is not so in the usual sense. Rather than being economically exploited by MWD, San Diego actually has been massively subsidized by another MWD member agency--Los Angeles.³⁵ Avoiding any initial investment in the Colorado River Aqueduct during the 1930s, San Diego was ordered by the federal government in 1946 to join MWD, primarily to serve the Navy's water needs. In the half century since, SDCWA has received 26 percent of all MWD water, but has contributed--in constant dollars--only 18 percent of MWD's total revenues and 15 percent of its capital costs. Nevertheless, San Diego--in terms of political power--has indeed been relegated to colonial status. Though is it Metropolitan's largest customer, accounting for a quarter of MWD's sales, San Diego enjoys only 15.5 percent of MWD board representation and voting power and, in the event of a severe drought, only has a 13 percent preferential right to MWD water supplies. In contrast, Los Angeles wields 25 percent clout on the MWD board and also is assured a one-quarter share of available water. Why the disparity? Because in water politics--as in any other kind--power flows to money.³⁶

Los Angeles' preferential rights are based upon its massive historical investment in MWD capital projects. In the 1930s, L.A. paid three quarters of the total cost of building the Colorado River Aqueduct. In all, L.A. has contributed (in inflation-adjusted dollars) 17 percent of total MWD revenues and 23 percent of capital costs while only purchasing eight percent of MWD water. In essence, Los Angeles' substantial capital investment has been the premium paid for a "drought insurance" policy. Yet, during the 1990s drought, MWD overrode L.A.'s preferential rights (which L.A. did not claim) by ordering an across-the-board 30 percent

reduction for all its member agencies. San Diego voluntarily cut back even more so that it could continue to supply local agriculture.³⁷

In theory, the contract signed in April 1998 between the San Diego County Water Authority and the Imperial Irrigation District for the purchase of up to 200,000 acre-feet of water per year (with an additional 100,000 acre-feet purchasable at the discretion of the parties) would allow San Diego to meet the water needs of one-third of its population while gradually reducing its dependence on MWD-supplied water from 90 percent to under 60 percent. Yet the reality of the SDCWA/IID agreement provides a valuable case study highlighting the paradoxical dynamics of California water policy and politics.³⁸

History: San Diego rightly can claim that it did not originate the idea of water purchases from the Imperial Valley. The Imperial Irrigation District concluded a deal to sell conserved water to MWD in 1989, after the San Diego County Water Authority spurned a similar offer as too expensive. Yet the 1990s drought and resultant MWD cutbacks dramatically changed the minds of SDCWA Board members. However, the initiative for a water purchase once again did not come from San Diego.³⁹

In 1993, the Texas billionaire Bass brothers completed their acquisition of 45,000 acres of Imperial Valley farmland, making their Western Farms subsidiary the largest land owner in the Valley. The Valley's local newspaper subsequently denounced them as "carpetbaggers" who had entered the Valley under the camouflage of a cattle ranching operation, but whose real intention was always to conclude a water deal that, by following their massive acreage, would turn Imperial into a new "dust bowl." In fact, as early as 1994, Bass operatives offered to sell to MWD, at an exorbitant rate of \$400-600 an acre-foot, Colorado River water for which IID only paid \$12.50 an acre-foot. This offer was rejected, and the Bass interests turned to San Diego. In 1995, in an eerie replay of the movie script of 'Chinatown,' Bass lawyers initiated secret negotiations with the SDCWA's inner circle of decision makers, proposing that San Diego end-run both MWD and IID by itself becoming a "water farmer" through purchase of an ownership interest in Western Farms, and then use eminent domain powers to follow the land and capture the water.⁴⁰

In 1996, the Imperial County Grand Jury found evidence of "undue influence" by Western Farms over the IID board in terms of the proposed San Diego water deal and noted procedural irregularities in the hiring of a former Bass consultant as IID general manager. Bass influence provoked a rising tide of local and national criticism. In August, 1997 they traded their \$100 million investment in Western Farms for a \$250 million interest in U.S. Filter Corporation, which announced its ambitions to become "the General Motors" of the water conservation and reclamation industry. There followed drawn-out negotiations between the San Diego County Water Authority and the Imperial Irrigation District that were ultimately concluded in April 1998.⁴¹

Status: The final SDCWA-IID deal fell short of the original expectations of San Diego, which had hoped to purchase as much as 500,000 acre-feet annually over a 75-year contract

period. Under intense pressure from local constituents, the Imperial Irrigation District board was unable to be that accommodating. The final agreement guaranteed San Diego 200,000 acre-feet per year, with only 140,000 acre-feet coming from “on farm” sources. The contract term was for 45 years, with a 30-year option renewal. Cost estimates suggested that Imperial Valley farmers could make a handsome profit by selling conserved water to San Diego at around \$200 per acre-foot. Yet, the contract set the initial price at an even higher \$250 per acre-foot. Unfazed by the purchase’s questionable economics, SDCWA Board member Fred Thompson, representing the City of San Diego, declared, “I would rather pay 10 times what I pay now for water than get down on my knees and bow down to Los Angeles.”⁴²

Such sentiments, however, were not shared by the nearly one-third of the San Diego County Water Authority’s 24 member agencies, mostly from North County, which voted against the water transfer agreement. Yet the SDCWA board majority in favor of the deal likely would have evaporated had the board also proposed that San Diegans pay the \$2 billion to \$3 billion price tag attached to building a new aqueduct to transport IID water purchases.⁴³

Instead, SDCWA demanded that MWD wheel its IID water through the Colorado River Aqueduct at a nominal charge. A consortium of 27 member agencies, MWD argued that accepting San Diego’s low wheeling rate would force its other customers to absorb a 10 to 20 percent rate hike while making them more vulnerable to water shortages. The issue of wheeling charges sharply separated MWD and SDCWA. Metropolitan then filed a validation lawsuit seeking a charge of \$262 per acre-foot (to avoid shifting its system-wide costs to other member agencies) for transfers of one year or less. MWD’s long-term wheeling charge, such as for the SDCWA/IID deal, was to be determined on a case-by-case basis.

Even before a state court in early 1998 rejected MWD’s short-term wheeling rate, MWD, under pressure from Sacramento, reduced its wheeling charge for the SDCWA-IID deal to \$70 per acre-foot (half its usual “space available” rate), provided that San Diego store unused water which MWD could use to meet the needs of its other member agencies in the event of shortages. In the event of a repetition of the drought of the early 1990s--if one-sixth of the Colorado River Aqueduct’s capacity were to be reserved exclusively to move San Diego’s IID purchases--other Southern California cities heavily dependent on aqueduct water such as Long Beach, Cerritos, and Norwalk could face unprecedented, severe water rationing.⁴⁴

By mid-1998, the real crux of the dispute was San Diego’s demand that its IID purchase receive “dedicated capacity” or assured space in the aqueduct versus MWD’s insistence on water storage for equitable distribution to meet drought conditions. The “wheeling charge” and “dedicated capacity” issues were finessed by DWR Director Kennedy’s two-tier, compromise proposal. San Diego would pay MWD \$80 an acre-foot to move its Imperial Valley water purchases during periods when space was “available” (a term yet to be defined) on the Colorado River Aqueduct, but would be charged \$110 an acre-foot when it was not. This compromise, however, did not address MWD concerns about the storage of IID water purchased, but not used, by San Diego.⁴⁵

During the first half of 1998, MWD's position suffered, not necessarily from a loss of merit, but from a serious deterioration in Metropolitan's political standing in Sacramento. In an uncharacteristic display of ineptitude, a coalition of MWD member agencies calling themselves the "Partnership for Water Reliability," fearful that MWD was giving away the store to San Diego, contributed \$12,000 toward researching the Bass brothers' alleged influence over the IID and SDCWA boards. This was deemed inappropriate "opposition research" by MWD critics inside and outside the state legislature. (Escaping criticism, the Imperial Irrigation District paid its "dream team" of lawyers over \$2.2 million to consummate the water deal.) But the Partnership's ill-advised expenditure, though paltry, was enough to ignite a political firestorm whose flames were fanned by lobbyists representing the Bass interests and San Diego. Critics linked the Bass research to MWD itself, accusing MWD officials of felony violations and demanding that the \$8 billion agency be dismembered. In San Diego, the city's leading newspaper urged--no doubt metaphorically--that MWD be "dynamited" out of the way for its obstruction of the Imperial Valley water purchase.⁴⁶

Desperate to recoup politically, MWD in mid-1998 swallowed the broad contours of the SDCWA-IID water deal. It even offered a \$1 billion package to be spent on new storage facilities which could hold San Diego's IID water. Choosing to look a gift horse in the mouth, San Diego water policy makers were skeptical. They preferred a new proposal from Director Kennedy that \$100-\$125 million of the Governor's proposed \$1.7 billion water bond (in addition to MWD's \$1 billion package) be earmarked for Imperial Valley conservation measures. San Diego's water leaders argued that money from Sacramento rather than MWD would come with fewer "L.A. strings attached." The bond outlay soon ballooned to \$235 million to include concrete lining of sections of the earthen All-American Canal, and, for MWD's benefit, to build ground water storage facilities along the Colorado River Aqueduct. When the bond failed in the legislature, transfer supporters hastily put together a classic logrolling deal. The \$235 million water project--supported both by MWD and SDCWA--was linked to a proposed \$240 million purchase of the Headwaters Forest in Humboldt Forest, thus placating Northern Californians and some environmentalists. With lobbying from the Governor's Office, both measures passed on the last day of the legislative session.⁴⁷

Policy Issues: The water transfer agreement between the San Diego County District Water Authority and the Imperial Irrigation District--with MWD, the Coachella Valley Irrigation District, and the state and federal governments also serving as significant players--is a classic example of how "rational choice" policy making can be undone by the political laws of unintended and unanticipated consequences.

The Bass brothers made a \$150 million profit with their transfer of Western Farms lands to U.S. Filter for an eight percent equity share in the corporation. But they were forced to retreat to Texas after their dreams of becoming the royalty of California water farmers were shattered by irate Imperial Valley residents. The Imperial Irrigation District ultimately brokered the deal, but at the cost of a loss of much local good will. In addition, IID managed to alienate the neighboring Coachella Valley Irrigation District--which had its own "beneficial use" claim to unused IID

water--and even Interior Secretary Babbitt, who pointed to IID as an object lesson in wasteful water practices by California that other Colorado River water users would no longer tolerate.⁴⁸

At the other end of the IID purchase, San Diego had to settle for less water at a higher price over a shorter assured delivery period than it wanted. Yet the “water independence” that San Diego sought could have been achieved much earlier--and at much lesser cost--if it had been willing to pay for it. During the 1930s, San Diego actually enjoyed an independent claim to 112,000 acre-feet a year of Colorado River water but failed to build its own aqueduct. After being ordered by the President and the Navy to join MWD, San Diego was forced to transfer its Colorado River water rights to MWD.

Reviving its water independence crusade one-half century later, San Diego has strained to the breaking point its relations with the 26 other MWD member agencies in Ventura, Los Angeles and Orange Counties. To give substance to its independence aspirations, San Diego has proposed building a pipeline through Mexico, to be jointly financed and used by SDCWA and Baja California, to transport their respective Colorado River purchases and entitlements. Thus to escape dependence on MWD, San Diego prefers to substitute the chimerical prospect of a costly Mexican pipeline. The proposal, however, is strongly opposed by Arizona, and would require binational cooperation.⁴⁹

Nor can MWD escape responsibility for failing to anticipate the consequences of its own actions. Having concluded a water transfer agreement in 1989 with the Imperial Irrigation District that led, circuitously, to the SDCWA-IID deal, MWD should have foreseen the inevitable upshot and cut its losses sooner. A proactive, more positive stance by MWD might have allowed it to shape a less objectionable deal. Instead, it acted promptly--but negatively--when it caught wind of the SDCWA-IID deal in 1995 by stopping work on an additional pipeline connecting San Diego to the Colorado River Aqueduct. MWD argued--and SDCWA concurred--that it was unnecessary to spend this money if San Diego were going to get water from IID and was planning to build its own aqueduct. Yet MWD's alleged oppositional tactics, such as they were, ultimately proved ineffective. Switching roles from master to servant, MWD was forced by San Diego (whose leverage was enhanced by powerful allies such as the Governor and Bass brothers) to use its aqueduct to facilitate a water transfer for which it later might be blamed by its 26 other member agencies for adverse consequences that could befall them. MWD also had to fend off a host of legislative proposals introduced by San Diego's allies, purportedly designed to reform the agency's governance system and financial operations, but actually aimed at softening MWD's resistance to San Diego's water transfer terms.⁵⁰

The SDCWA-IID deal also may prove a mixed blessing for its Sacramento sponsors in the Governor's Office and Department of Water Resources. Between 1988 and 1998, state water policymakers moved from criticism to effusive praise of Imperial Valley agriculture's water utilization practices despite the fact that IID conservation efforts failed to decrease its water usage during the 1990s. The San Diego County Water Authority, Governor Pete Wilson (a former San Diego mayor) and the Department of Water Resources formed a united front justifying the SDCWA-IID deal as “the cornerstone” of the California 4.4 Plan for reducing the

state's Colorado River usage. Yet by drawing critical attention from the U.S. Interior Department to California's failure so far to measure--much less control--the voracious thirst of its great agricultural water districts like IID, the water transfer could prove to be a millstone dragging down the California 4.4 Plan.⁵¹

The lining of the All-American Canal would slacken some of that thirst by increasing the amount of IID water conserved, and thus available for transfer. But this also threatens to accelerate the depletion of the Salton Sea--a major bird stopover on the Pacific Rim flyway--which depends upon canal seepage for replenishment. One unanticipated consequence of the transfer could be greater federal intervention to mitigate the deal's negative externalities. Congress is being pressured to fund a \$350 million restoration of the Salton Sea. And Interior Secretary Babbitt, citing state water planning "in disarray" and "a very bleak future for California and the Colorado River" without some regional consensus, has threatened unprecedented direct intervention to resolve Coachella Valley's claims to Imperial Irrigation District water surpluses. This seriously could hinder the ability of the two local irrigation districts to manage their own affairs.⁵²

L.A.'s Department of Water and Power, the Owens Valley and Mono Basin

California's twentieth-century water wars began with the audacious and controversial construction by Los Angeles of the Owens Valley aqueduct. "There it is," DWP founding father William Mulholland cryptically remarked as the aqueduct opened, "take it." The century ends with DWP waging defensive wars in both the Owens Valley and Mono Lake Basin to maintain its 90-year-old water claims. "There it was," one almost can imagine today's anti-DWP insurgents taunting Mulholland's ghost, "give it back."⁵³

History: The completion in 1970 of a second aqueduct from the Owens Valley marked the high tide of what critics have called Los Angeles' "water imperialism." The second aqueduct allowed Los Angeles at one point to reduce its share of more expensive MWD water to a mere three percent. Yet the high tide quickly began to recede. In 1972, **County of Inyo v. Yorty** was filed. This lawsuit resulted in an appellate court decision imposing environmental impact regulations on DWP. The Mono Lake Committee, formed in 1978, followed up with administrative victories (the 1979 Report by the California Inter-Agency Task Force on Mono Lake) as well as judicial triumphs (notably the 1983 state Supreme Court decision declaring the Lake "a navigable waterway" to be protected in accordance with "the public trust doctrine"). In 1989, the California legislature encouraged Los Angeles to reduce the diversions that had caused the lake level to fall more than 40 feet.⁵⁴

In parallel fashion in the Owens Valley, Concerned Citizens of Owens Valley (CCOV) in the 1970s revived the protests that had been mostly dormant since Owens Lake was drained dry. A "Local Ordinance to Regulate the Extraction of Ground Water Within the Owens Valley Groundwater Basin" was passed in 1980, but struck down by the state Supreme Court in 1982. However, in 1983, the state legislature mollified local residents and environmentalists with a law

directing Los Angeles to take “reasonable measures” to mitigate the legendary dust storms in the dry lake bed.⁵⁵

Status: The 1990s have produced breakthroughs for both wings of the Inyo and Mono County anti-aqueduct movement which enjoy significant political support from environmentalists in West Los Angeles as well as San Francisco. In 1994, the California Water Resources Board ordered DWP to stop diversions from Mono Lake for a 20-year habitat recovery period, after which Los Angeles would be limited to one-third of the water it previously had drawn. This resulted in L.A. losing 100,000 acre-feet of water, amounting to one-sixth of its total annual needs.⁵⁶

In January 1997, a compromise reached between Los Angeles and Owens Valley public officials reduced DWP’s take from a 60-mile stretch of the lower Owens River in order to restore wildlife habitat. In July, however, another compromise fell through and the Owens Valley’s Great Basin Unified Air Pollution Control District ordered DWP to return to the Valley 51,000 acre-feet of water per year in perpetuity to be sprayed (in a mixture with salt grass and gravel) over the dustiest 35 square miles of the dry Owens Lake bed. The potential costs of the Great Basin plan were significant. In addition to a nine percent water supply loss--resulting in a \$40 million annual replacement charge and a 10 percent increase in L.A. water rates--DWP would be faced with a \$300 million construction bill to pay for environmental mitigation.⁵⁷

Los Angeles received no comfort from the state legislature when, in April 1998, the Senate Environmental Quality Committee passed a bill supporting an energetic reduction of Owens Lake dust. The next battle took place in at the California Air Resources Board (CARB). The CARB staff favored Los Angeles’ position, but the board postponed a decision even though its members were narrowly inclined, five to four, toward Los Angeles. This precarious majority was an unpleasant surprise for DWP as was the vote in favor of the Great Basin plan by the board chairman, a gubernatorial appointee. Yet, whether or not Los Angeles ultimately won the battle in Sacramento, it had to fear losing the war in Washington where the Environmental Protection Agency was threatening to intervene to insure by 2001 a reduction in lake dust levels to those mandated by the Clean Air Act. These political imponderables inspired one last attempt at a compromise solution. In July 1998, the two sides agreed to a multi-year plan to meet clean-air standards that reduced Los Angeles’ costs to 40,000 acre-feet of water and a \$120 million environmental mitigation expenditure.⁵⁸

Policy Issues: The Department of Water and Power--once the “crown jewel” of Los Angeles’ municipal departments--has lost much of its luster in recent years in a political environment characterized by unstable agency leadership, budgetary and personnel reductions, and the prospect of further loss of departmental independence under a prospective new city charter. Yet, whatever the faults of DWP, there is no certainty that it could have done much better given the changing realities of California water politics over which it has little control.⁵⁹

In the 1970s, Los Angeles was so flush in Owens Valley and Mono Basin water that DWP even offered to sell some of its supply to drought-stricken Central Valley farmers. Now,

DWP has to be concerned about the water supply implications of developments--such as the threatened secession of the San Fernando Valley--occurring even within city limits. Certainly, DWP can no longer place the same degree of reliance as in the past on its distant "backyard" water supply in the Eastern Sierra Nevadas. Because of the loss of water from the Owens Valley and Mono Basin, Los Angeles is likely to become more dependent on MWD. The spin-off consequences are higher water rates for Angelenos together with a less assured water supply for other Southern Californians as Los Angeles increases its MWD deliveries by up to 140,000 acre-feet.⁶⁰

The Challenge of Leadership

California's remarkable network of major water projects often is likened to "an empire." The corollary is that the empire currently is undergoing a succession crisis with many pretenders to the throne--water agency bureaucrats, urban consumers, water farmers and "real" farmers, environmental activists, local and state politicians--but with no preeminent claimant to the imperial mantle. Compared to the water pioneers of William Mulholland's era, today's actors have narrow-gauged, parochial outlooks that do not extend beyond the precincts of their bureaucratic agencies, corporate boardrooms, politically correct interest group lobbies, and governmental offices.

Leadership limitations are both symptom and cause of a fragmented policy making system in which all the state's water policies are interconnected but few seem to be in sync. The policy linkages are obvious. CALFED will not succeed in reviving the Delta without the support of Southern California water agencies and their consumers. Yet CALFED also cannot afford to alienate the Northern California constituencies and environmentalists who defeated Peripheral Canal. The California 4.4 Plan won't be able to achieve its goals without a successful Delta restoration program to show off to Colorado River users in the other western states and to critics in Washington. No matter how it actually works, the SDCWA/IID water transfer profoundly will impact both CALFED and the California 4.4 Plan. If things run smoothly, it may reduce Southern California's dependence on the Colorado River, and even perhaps on Delta water. But if the results are not as promised, it may aggravate the region's dependence on water imports while undermining support for water markets.

The challenge for water policy makers is to translate these project and program interdependencies into positive reinforcement loops. The California 4.4 Plan proposes to reduce Colorado River water use through a complex set of multi-layered solutions at the local, state and interstate levels which utilize market incentives as well as regulatory mandates. Such a potpourri of approaches is no substitute for clear-cut priorities and the political will to make hard choices. By the same token, water markets--despite their current popularity--are unlikely to provide all things to all people. Environmentalists who support the San Diego-Imperial Valley water transfer may discover to their dismay that the deal actually results in the building of more, not less, conveyance and storage facilities. Little Inyo and Mono Counties bravely can pose as the little Davids who, after all these years, have humbled the DWP Goliath. Yet they would never have won their recent victories if their cause had not taken up by a statewide environmental network.

Nor can they escape the aftershocks that their quest for local water autonomy may have, not only for Los Angeles, but for all of California.

A popular bumper stick proclaims: “think globally--act locally.” State policy makers need to act in accordance with more coherent, disciplined visions of the water future if Californians are going to continue to be able to “drink locally.”

Endnotes

The authors wish to thank Annette Hubbell and Robert V. Phillips for their thoughtful and insightful comments on an earlier draft of this essay.

1. California Field Institute, “An Update on Californians' Views on Water-Related Issues,” May, 1992.
2. See Vincent Ostrom, **Water and Politics: A Study of Water Policies and Administration in the Development of Los Angeles** (Los Angeles: Haynes Foundation, 1953); Abraham Hoffman, **Vision or Villainy: Origins of the Owens Valley-Los Angeles Water Controversy** (College Station, Texas: Texas A&M University Press, 1981); William L. Kahrl, **Water and Power** (Berkeley: Univ. of California Press, 1982); John Walton, **Western Times and Water Wars: State, Culture, and Rebellion in California** (Berkeley: Univ. of California Press, 1992); Norris Hundley, Jr., **The Great Thirst: Californians and Water, 1770s-1990s** (Berkeley: Univ. of California Press, 1992); Beverly B. Moeller, **Phil Swing and Boulder Dam** (Berkeley: Univ. of California Press, 1971); Hundley, **Water and the West: The Colorado River Compact and the Politics of Water in the American West** (Berkeley: Univ. of California Press, 1975); U.S. Dept. of the Interior, Bureau of Reclamation, **Central Valley Project: Its Historical Background and Economic Impacts** (Sacramento: U.S. Dept. of the Interior, Bureau of Reclamation, Mid-Pacific Region, 1981); Marc Reisner, **Cadillac Desert: The American West and Its Disappearing Water** (New York : Penguin Books, 1993).
3. California Dept. of Water Resources, “DWR to Hold Hearings in Southern California on Water Supply Outlook,” Press Release, February 13, 1998; California Resources Agency, “California Water Plan Forecasts Water Shortage; Water Management Options Would Offer Relief,” Press Release, January 30, 1998; “State Water Chief Sees Shortages by 2020,” **Sacramento Bee**, May 19, 1997.
4. Carey McWilliams, **California: The Great Exception** (New York: Greenwood Press, 1971), p. 318); McWilliams, **Southern California: An Island on the Land** (Santa Barbara, CA: Peregrine Smith, 1973), p. 183; Martha Davis, “Stepping Outside the Box: Water in Southern California,” Speech at the UCLA Environment Symposium, March 3, 1998.
5. City of Los Angeles, Department of Water and Power, “Urban Water Management Plan, Fiscal Year, 1996-1997.”

6. William L. Kahrl, ed., **The California Water Atlas** (Sacramento: The Governor's Office, 1979), pp. 47-56; Donald Worster, **Rivers of Empire: Water, Aridity, and the Growth of the American West** (New York: Oxford Univ. Press, 1985), pp. 233-56, 290-95; Metropolitan Water District of Southern California, "Colorado River Water's Critical Role for the Southern California Coastal Plain"; Water Education Foundation, **Layperson's Guide to the Colorado River** (Sacramento: Water Education Foundation, 1995), p. 16. Despite legal limits on MWD's Colorado River entitlement, MWD has various ways of keeping the aqueduct filled. These include water transfers, storage agreements and federal declarations of surplus on the Colorado River.
7. U.S. Dept. of the Interior, Bureau of Reclamation, **Central Valley Project: Its Historical Background and Economic Impacts** (Sacramento: U.S. Dept. of the Interior, Bureau of Reclamation, Mid-Pacific Region, 1981); California Dept. of Water Resources, **The California State Water Project** (Sacramento: California Dept. of Water Resources, 1989).
8. Terry Christensen and Larry N. Gerston, **The California Connection: Politics in the Golden State** (Boston: Little, Brown, 1984), pp. 256-64; Robert Gottlieb, **A Life of Its Own: The Politics of Water and Power** (New York: Harcourt Brace Jovanovich, 1988), pp. 14-33.
9. CALFED, "Reinvesting in California's Future" (Los Angeles: Metropolitan Water District of Southern California, 1998); "Delta Debate," **Western Water** (March/April, 1998), p. 7.
10. Daniel K. Macon, "What California Agriculture Would Like from CALFED," **Sacramento Bee**, March 6, 1998; Tom Philip, "Cities, Farmers, Enviro's Try to Cut a Water Deal," **Sacramento Bee**, April 14, 1998; David Friedman, "The Divining Rod of Water Politics," **Los Angeles Times**, April 19, 1998; Mark Grossi, "Study Finds Valley Water Among Worst," **Fresno Bee**, May 1, 1998.
11. CALFED, "Programmatic EIS/EIR Executive Summary" (Sacramento: CALFED Bay-Delta Program, March, 1998), pp. 4-5.
12. Vic Pollard, "Plan Worries Water Users," **Bakersfield Californian**, February 27, 1998; Alex Barnum, "Water Warriors Prepare for New Battle in Delta," **San Francisco Chronicle**, March 16, 1998; Ed Mendel, "\$1.7 Billion Water Bond Evaporates," **San Diego Union-Tribune**, August 28, 1998.
13. "Delta Debate," **Western Water** (March/April, 1998), p. 7.
14. CALFED, "Programmatic EIS/EIR Executive Summary" pp. 15, 22-24.
15. Mark Grossi, "Peripheral Canal Idea Resurrected," **Fresno Bee**, April 22, 1998.
16. Christopher Heredla, "Delta Plan Presented, Attacked," **San Francisco Chronicle**, March 17, 1998; "The Delta's Destiny," editorial, **Sacramento Bee**, March 22, 1998; Tony Perry, "Water Canal Plan, Debate Resurface," **Los Angeles Times**, March 17, 1998; Vic Pollard, "Water Plan Unveiled, Attacked," **Bakersfield Californian**, March 17, 1998; Dianne Barth and Jim Nickles, "Delta Re-Design," **Stockton Record**, March 17, 1998 (quote).
17. Chief Executive Officers of Major California Employers and Members of California Business Roundtable, California Council for Economic and Environmental Balance, and Bay Area Council, "Letter to The Honorable William Jefferson Clinton and The Honorable Pete Wilson," April 15, 1998; Steve LaRue, "Business Leaders Weigh in On Water," **San Diego Union Tribune**, May 5, 1998; "Delta Debate," **Western Water** (March/April, 1998), p. 13; Mark Arax, "Water Deal Splits San Joaquin Valley," **Los Angeles Times**, July 29, 1997;

- California Farm Water Coalition, "A Closer Look At CALFED's Farmland Conversion Proposals Farmers Must Weigh In On California Water Decisions," **Farm Water Report** (May/June 1998).
18. Metropolitan Water District of Southern California, "Refinement of Policy Principles Relating to the CALFED Bay-Delta Program and Preliminary Comments on CALFED's Draft PEIR/S," Memo from General Manager to Board of Directors, May 11, 1998, p. 3; George Rooney, "Inland Officials Favor Canal Plan," **Riverside Press-Enterprise**, April 27, 1998; Chris Frahm, Chair, San Diego County Water Authority, "Letter to Jack V. Foley, Chairman of the Board of the Metropolitan Water District of Southern California," May 12, 1998; "Wrench in the Works," editorial, **San Diego Union-Tribune**, May 3, 1998.
 19. John Howard, "Wilson, Babbitt to Confer On Plans for Restoring Delta," **Riverside Press-Enterprise**, May 8, 1998; Frank Clifford, "Draft of Delta Plan Coming by Year's End," **Los Angeles Times**, May 12, 1998.
 20. "Delta Debate," **Western Water** (March/April, 1998), p. 15.
 21. Denis Cuff, "Cancer Fear May Sweeten Peripheral Canal Appeal," **Contra Costa Times**, March 16, 1998.
 22. Nancy Vogel, "Wilson Promises Canal Decision," **Riverside Press-Enterprise**, May 7, 1998; George Skelton, "To Little Fanfare, Lungren Wades into Water Wars," **Los Angeles Times**, November 24, 1997; Tony Perry, "Politicians Wade Into Water Issue," **Los Angeles Times**, May 3, 1998.
 23. Water Education Foundation, **Layperson's Guide to the Colorado River**, pp. 9, 11, 13-16; Colorado River Water Users Association, "California," 1998.
 24. Thomas E. Sheridan, "The Big Canal: The Political Ecology of the Central Arizona Project," in **Water, Culture, and Power: Local Strategies in a Global Context** (Washington, D.C.: Island Press, 1997), pp. 153-86; Dennis Cauchon, "Arizona Takes Its Full Share of River," **USA Today**, October 17, 1997; Colorado River Decision Support System (CRDSS), "Management Issues," 1998; Michelle Rushio, "Arizona Cites Buy Farms Just For Water," **San Diego Union Tribune**, May 7, 1998.
 25. Susan Greene, "California Scolded for River Water Use," **Las Vegas Review Journal**, August 13, 1997.
 26. Tony Perry, "Imperial Valley Told to Cut Its Water Use," **Los Angeles Times**, December 19, 1997; Steve LaRue, "Judge Tosses Out MWD Rate Plan for Transporting Water," **San Diego Union Tribune**, January 14, 1998; Ann Knickerbocker, "Work Begins on Inland Feeder Pipeline," **San Bernardino County Sun**, July 1, 1997; "Governor Signs Bill to Encourage Imperial Irrigation District Water Transfer," **U.S. Water News Online**, November, 1997; "Landmark Water Conservation and Transfer Agreement Ratified," **U.S. Water News Online**, January, 1998; Steve LaRue, "Wilson's Office Wants Fight Over Water to End," **San Diego Union Tribune**, April 17, 1998.
 27. California Department of Water Resources, **California Water Plan**, Bulletin 160-98 (Sacramento: California Department of Water Resources, January, 1998), Chapter 9.
 28. Gottlieb, **A Life of Its Own**, pp. 263-65; Water Education Foundation, **Layperson's Guide to Water Marketing and Transfers** (Sacramento: Water Education Foundation, 1996), p. 9; Vic Pollard, "Deal Clears Water Sale to Los Angeles," **Bakersfield Californian**, December 13, 1997; Alec Rosenberg, "MWD Seeks Deals with Catellus, Coachella," **Imperial Valley**

- Press, February 4, 1998; "California Water Resources Director Says IID Water Transfer Part of State Water Plan," **U.S. Water News Online**, August, 1997; "Landmark Water Conservation and Transfer Agreement Ratified," **U.S. Water News Online**, January, 1998.
29. Metropolitan Water District of Southern California, "The Colorado River: Reliability Plus" (Los Angeles: Metropolitan Water District of Southern California, 1995), pp. 5-6; Water Education Foundation, **Layperson's Guide to the Colorado River**, p. 16.
 30. *Ibid.*, p. 9; "States Are Obsessed With How Colorado River Surplus Will Be Apportioned," **Los Angeles Daily News**, February 15, 1998.
 31. "Inside the Water Wars with Woody Wodraska and the 800-lb. Gorilla of the West—MWD," **Valley Grower** (November-December, 1997), pp. 16-17.
 32. California Department of Water Resources, **California Water Plan**, Table 9-17.
 33. Hundley, **The Great Thirst**, pp. 392-97; Coachella Valley Water District, "Imperial Irrigation District and San Diego County Water Authority Propose Illegal Water Transfer," July 1, 1996; Alec Rosenberg, "Coachella Complains About Water Deal in San Diego," **Imperial Valley Press**, February 18, 1998; Todd S. Purdum, "New Rule Set on West's Water," **Riverside Press-Enterprise**, December 19, 1997; Peter Passell, "A Gush of Profits from Water Sale?," **New York Times**, April 23, 1998; Steve LaRue, "U.S. May Bar Farm-to-City Water Deals," **San Diego Union Tribune**, December 19, 1997; Rosenberg, "Farm Bureau Floats Transfer Concerns," **Imperial Valley Press**, January 23, 1998; Rosenberg, "IID Assures Farm Bureau It Hears Members' Concerns," **Imperial Valley Press**, February 10, 1998.
 34. Mary DeSena, "Colorado River Operating Criteria May Be Ripe for Change," **U.S. Water News**, July, 1997; Chris Moran, "Rivers, Roads in Southwest Water Issues Lead to Hoover Dam," **North County Times**, September 21, 1997; George Rooney, "Plan Unveiled to Cut Use of Colorado River Water," **Riverside Press-Enterprise**, August 13, 1997.
 35. San Diego County Water Authority, "Fact Sheet for Fiscal Year 1997-1998"; Steve LaRue, "San Diego's Water System: Despite Gains, Choppy Waters Loom in '98," **San Diego Union Tribune**, December 19, 1997.
 36. Robert V. Phillips and Steven P. Erie, "San Diego Takes Aim at L.A.'s Hegemony," **Los Angeles Times**, March 3, 1996; Chris Moran, "Landowner Pushes for SD Water Sale," **North County Times**, October 10, 1997; "A Big Step Toward Water Independence," editorial, **North County Times**, March 15, 1998.
 37. Metropolitan Water District of Southern California, Division of Planning and Resources, "Water Delivery in Acre Feet by Member Agency Through March 31, 1996"; Metropolitan Water District of Southern California, Division of Planning and Resources, "Total Capital Costs [by Member Agency], Nominal Value and Present Value [Through Fiscal Year, 1995-96]"; "Declaration of Steven P. Erie," in **The Metropolitan Water District of Southern California vs. All Parties Interested in the Matter**, August 27, 1997, pp. 10-14.
 38. San Diego County Water Authority, "Landmark Water Conservation and Transfer Agreement Ratified," Press Release, April 29, 1998; Steve LaRue, "'Historic' Imperial Water Deal Approved," **San Diego Union Tribune**, April 30, 1998.
 39. Chris Moran, "Water Wars," **North Country Times**, March 3, 1996; Charles McCoy and G. Pascal Zachary, "A Bass Play in Water May Presage Big Shift in Its Distribution," **Wall**

- Street Journal**, July 11, 1997; Marc Lifsher, "Why Shipping Water to San Diego Has Been Harder Than It Looked," **Wall Street Journal**, July 1, 1998.
40. Steven P. Erie, "A San Diego 'Chinatown' With Los Angeles As Victim," **Los Angeles Times**, August 26, 1996; "Declaration of Steven P. Erie," pp. 3-6; Lifsher, "Why Shipping Water to San Diego Has Been Harder Than It Looked," **Wall Street Journal**, July 1, 1998.
 41. Imperial County Grand Jury, **Final Report, 1995-1996**, June 27, 1996, pp. 18-22; Charles McCoy, "Lee, Ed Bass to Sell Their Water Rights to U.S. Filter Corporation," **Wall Street Journal**, August 4, 1997; "Our Opinion: Some Neighborly Advice," **Imperial Valley Press**, September 23, 1997; San Diego County Water Authority, "Landmark Water Conservation and Transfer Agreement Ratified," Press Release, April 29, 1998; Steven P. Erie, "A San Diego/Imperial Valley Water Deal: Who Stands to Gain? Who to Lose?," **Metro Investment Report** (June, 1997), p. 20; Phil Diehl, "Water Authority Deal Questioned," **North County Times**, February 14, 1998 (quote).
 42. Jonathan Heller, "Water Debate Boils Down to Price Issue," **North County Times**, March 15, 1998; Gary Broomell, Dale Mason, and Greg Quist, "Deal with Imperial Is Just Not Worth It," **North County Times**, April 4, 1998; San Diego County Grand Jury, 1996-1997, **Final Report**, June 27, 1997, p. 87; Steve LaRue, "'Historic' Imperial Water Deal Approved," **San Diego Union Tribune**, April 30, 1998. The Imperial Irrigation District capitulated to local pressure by inserting contract language that there would be no "fallowing" of land to meet water sales targets; but it did not offer a precise definition of the term.
 43. Metropolitan Water District of Southern California, "Wheeling: Gearing for the Future of Water Marketing," February, 1997, p. 2; Tony Perry, "Southland's Water Future May Hinge On Bitter Dispute," **Los Angeles Times**, August 3, 1997; Chris Moran, "County Backs Down on Pipe," **North County Times**, November 14, 1997.
 44. George Rooney, "Discount Offered in Water Deal," **Riverside Press-Enterprise**, December 10, 1997; Rudy Yniguez, "MWD Funds Would Quench Its Own Thirst," **Imperial Valley Press**, May 22, 1998; Tony Perry, "Judge Rejects MWD Stand On Aqueduct Fees," **Los Angeles Times**, January 14, 1998; Thair Peterson, "Southland Water Agencies War Over San Diego Plan," **Long Beach Press-Telegram**, July 27, 1997.
 45. Steve LaRue, "Answer Offered for S.D. Water Imports," **San Diego Union Tribune**, January 6, 1998; George Rooney, "Framework Proposed for Settling Water Dispute," **Riverside Press-Enterprise**, January 6, 1998; Paula Story, "State Water Department Makes Recommendation to End Water War," **Hemet News**, January 7, 1998; Steve LaRue, "Judge Tosses Out MWD Rate Plan for Transporting Water," **San Diego Union Tribune**, January 14, 1998.
 46. "Dynamite the Dam," editorial, **San Diego Union Tribune**, December 9, 1997; Bill Boyarsky, "MWD's Dirt-Digging Scheme Is All Wet," **Los Angeles Times**, January 15, 1998; Dan Walters, "A Showdown in the Water War," **San Diego Union Tribune**, January 29, 1998; Walters, "Water Kremlin Facing Revolt," **Sacramento Bee**, May 22, 1998; Jonathan Heller, "Water Officials Decry Probe," **North County Times**, January 7, 1998; "Bill to Shrink Water Board Clears Hurdle," **Riverside Press-Enterprise**, April 17, 1998; Rudy Yniguez, "2.24 Million Spent on Legal, Consulting Fees, IID Says," **Imperial Valley Press**, May 14, 1998; Heller, "Water Authority Gets Lashing," **North County Times**, May

- 20, 1998; Carl Ingram, "Senate OKs Bill on Water Conservation," **Los Angeles Times**, May 22, 1998.
47. Thor Kamban Biberman, "Metropolitan Water Dist. Offers to Pay \$1 Billion for Water Importation," **San Diego Daily Transcript**, May 21, 1998; Tony Perry, "Possible Solution Seen in Southland Water War," **Los Angeles Times**, June 23, 1998; "Fund the Water Deal, Imperial Transfer Would Benefit Whole State," editorial **San Diego Union Tribune**, June 28, 1998; Dan Moran and Max Vanzi, "Legislature OKs Southland-Backed Water Project," **Los Angeles Times**, September 1, 1998.
48. Alec Rosenberg, "IID Board Votes to Give Public More Times to Review Pact," **Imperial Valley Press**, February 25, 1998. One study indicated that the deal would generate 400-900 jobs—a one to two percent increase in employment—in Imperial County. See Rosenberg, "Study: Transfer Benefits County," **Imperial Valley Press**, February 13, 1998.
49. Steven P. Erie, "A Good Deal?," **San Diego Daily Transcript**, September 11, 1996; Steve LaRue, "Pipeline Brought Water, Prosperity," **San Diego Union Tribune**, November 23, 1997; Chris Moran, "County Eyes Aqueduct via Mexico," **North County Times**, August 15, 1997; "Thair Peterson, "State Will Mediate Southland Water Fight," **Long Beach Press-Telegram**, October 15, 1998; "Quest for Water Unites the Region," editorial, **Ventura County Star**, December 27, 1998.
50. Water Education Foundation, **Layperson's Guide to Water Marketing and Transfers**, p. 14; Chris Moran, "County Backs Down on Pipe," **North County Times**, November 14, 1997; Bill Ainsworth, "MWD Members Considered Plan to Punish S.D.," **San Diego Union Tribune**, March 28, 1998; Ted Rohrlich, "Thirst to Overhaul Power Water Agency Grows Stronger," **Los Angeles Times**, July 19, 1998.
51. Tony Perry, "Imperial Valley Told to Cut Its Water Use," **Los Angeles Times**, December 19, 1997; Guy Kelley, "U.S. Puts California on 'Water Diet,'" **San Francisco Examiner**, December 29, 1997; Water Education Foundation, **Layperson's Guide to Water Marketing and Transfers**, p. 14; Coachella Valley Water District, "Imperial Irrigation District and San Diego County Water Authority Propose Illegal Water Transfer," July 1, 1996; Alec Rosenberg, "MWD: Quantify Before Approving Water Transfer," **Imperial Valley Times**, February 20, 1998; Alec Rosenberg, "Draft State Water Plan Praises III for Use Efficiency," **Imperial Valley Press**, March 25, 1998.
52. Steve LaRue, "Troubled Waters," **San Diego Union-Tribune**, July 1, 1998; Dana Wilkie, "Wave of Support to Aid Salton Sea Crests Early," **San Diego Union-Tribune**, September 17, 1998; Tony Perry, "Desert Valleys Renew 64-Year-Old Water Duel," **Los Angeles Times**, September 6, 1998; Terry McDermott, "Babbitt Rebukes Feuding Water Districts, Imposes 30-Day 'Timeout,'" **Los Angeles Times**, September 12, 1998.
53. Remi A. Nadeau, **The Water Seekers** (Santa Barbara: Crest Publishers, 1997 [1950]), p. 51.
54. Walton, **Western Times and Water Wars**, pp. 251-61; Hundley, **The Great Thirst**, p. 396.
55. Kahrl, **Water and Power**, pp. 416-56; Walton, **Western Times and Water Wars**, pp. 244-48, 160-62.
56. "Mono Lake Saved," **National Wildlife** (1995); Robert A. Jones, "Hearts of the City; Death of 'Chinatown'," **Los Angeles Times**, February 2, 1997; "New Day for Mono Lake," editorial, **Los Angeles Times**, March 28, 1998.

57. Jean Merl, "Judges Weigh Pact to End Water War," **Los Angeles Times**, January 27, 1997; Marla Cone, "More Study of Dust Storm Curbs Urged," **Los Angeles Times**, July 1, 1997; Cone, "L.A., Owens Valley Get Extra Month to Resolve Feud," **Los Angeles Times**, May 25, 1998.
58. Marla Cone, "L.A. Loses Battle With Owens Valley," **Los Angeles Times**, July 3, 1997; Carl Ingram, "Owens Valley Wins Round on Pollution," **Los Angeles Times**, April 21, 1998; Cone, "L.A., Owens Valley Agree on Plan to Stop Dust Storms," **Los Angeles Times**, July 16, 1998.
59. Jeffrey L. Rabin and Ted Rohrlich, "Debate Escalates Over the Future of the DWP," **Los Angeles Times**, January 30, 1998; Rick Orlov, "Day's Events May Determine DWP's Future," **Los Angeles Daily News**, March 2, 1998; S. David Freeman, "Reform May Set the DWP Free," **Los Angeles Times**, May 18, 1998.
60. Jim Newton, "Water Rights Could Sink Valley Secession," **Los Angeles Times**, April 24, 1998; Robert A. Jones, "Taking Back Mulholland's Water," **Los Angeles Times**, May 3, 1998; Tony Perry, "Agencies' Dispute Roils Southland Waters," **Los Angeles Times**, December 26, 1997.