

## Legal status and institutional considerations

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Restoring Hetch Hetchy Valley raises a host of complicated legal and institutional issues. While their complete analysis is beyond the scope of this report, Environmental Defense retained Stuart L. Somach of Somach, Simmons and Dunn to prepare a memorandum addressing several important questions related to San Francisco's water- and power-supply operations. This memorandum is included in this report as Appendix C, and its findings provide much of the background for the material that appears in this chapter.

The chapter opens with a general description of San Francisco's current rights to divert water from the Tuolumne River, to generate power from the river, and to store the water for later use. The discussion then turns to a survey of significant legal and institutional considerations associated with the potential restoration of Hetch Hetchy Valley. The chapter concludes with a brief section noting that changes in federal and state laws are likely to be required for the valley to be restored.

In a matter as complex as a restoration of this scale would be, a first-level analysis of the current status and potential alterations of San Francisco's water and power system cannot address all the relevant questions. Complexity, however, should not be confused with impossibility. Given the will and the means to accomplish the goal, this initial analysis has found no legal obstacle sufficiently formidable to block consideration of Hetch Hetchy Valley's restoration.

### **San Francisco's current rights to water, storage and power**

#### WATER LAW AT THE TURN OF THE LAST CENTURY

The original thirteen colonies of the United States, largely incorporating

the common law of England, allocated water by granting riparian rights that allowed landowners adjacent to streams (i.e., "riparians") to divert and store water freely, so long as other riparian landowners were not harmed as a result. Rarely did conflicts develop, as water was plentiful in all of the eastern states.

Riparian-rights systems, however, were insufficient to encourage development of the American west's largely arid environment. As a result, an appropriative-rights system was established in the region, including California, whereby a prospective water user staked its claims to divert water from a stream—in many cases for use in a different watershed—and so long as that claim was deemed "first in time" it became "first in right." Provided that the claimant made continuous beneficial use of the water claimed, this right remained senior to any claim made by subsequent would-be appropriators and, eventually, by riparians as well. This system was codified in California in 1914. Water users asserting rights acquired before 1914 must base their claims on notices filed with county authorities or, as explained in Appendix C, on assertions of prescription against other users in the watershed. Claims made after 1914 have required permits and licenses issued by a state agency, now the State Water Resources Control Board.

#### SAN FRANCISCO'S WATER RIGHTS

Beginning in 1901, as noted in greater detail in Appendix C, San Francisco asserted claims to the diversion of water from the Tuolumne River and its tributaries, not only for itself but also for others who eventually became its part-

ners in that water's use. By the time San Francisco asserted these claims, however, others who were desirous of the Tuolumne River's bounty, most notably the Turlock Irrigation District (TID) and the Modesto Irrigation District (MID), had already staked their own very large claims to its flows.

When San Francisco sought leave from the federal government to build a dam within Yosemite National Park's Hetch Hetchy Valley—in order to store water, divert it to San Francisco and environs, and generate hydroelectric power—the Districts protested, citing their senior rights.

Lengthy negotiations ensued, the fruits of which were incorporated in the Raker Act.<sup>1</sup> Summarizing a complex tale, TID's and MID's senior state-law-based water-diversion rights were ratified by Congress in the Raker Act (principally sponsored by and named after John Raker, a Congressman from the San Joaquin Valley town of Manteca). The Act confirmed that San Francisco's rights to divert water from the Tuolumne River were junior to specified quantities of flow required to be released downstream for the benefit of the Districts, in accordance with their prior rights; and, as Appendix C explains, the Act contained an ongoing duty not to export more water from the river than was "necessary for its beneficial use for domestic and other municipal purposes."

Subject to these caveats, however, the Raker Act did grant San Francisco the necessary right-of-way and other authorities needed for it to proceed with the construction of O'Shaughnessy Dam and related facilities.

Since then, there have been many changes in California and federal water law. Among them are stated preferences in state law for domestic and municipal uses of water; judicially developed appli-

cation of the public-trust doctrine; and a series of cases, interpreting Article X, section 2 of the California Constitution, that established there should be no waste of water or unreasonable uses or diversions of water (see *The public-trust doctrine*, page 96).

The domestic- and municipal-preference legislation tends to strengthen San Francisco's Tuolumne rights, to the potential detriment at least of TID's and MID's agricultural diversions from the Tuolumne, should significant drought limit supplies on the river. Potential applications of the public-trust and unreasonable-use-and-diversion doctrines tend to weaken San Francisco's rights to divert from the Tuolumne, at least upstream, should circumstances arise that provide the City with alternative water supplies downstream that would simultaneously provide multiple benefits to public-trust resources.

Aside from its Tuolumne rights, San Francisco also holds rights to divert and store water in local watersheds in the Bay Area, notably Alameda and Calaveras Creeks. Although no other consumptive water users currently have significant competing claims to these local resources, these rights too are subject to the potential application of modern environmentally oriented water law designed to assure appropriate consideration of public-trust values and prevent the unreasonable use or diversion of the state's waters.

## SAN FRANCISCO'S STORAGE RIGHTS

In a recent proposal to increase San Francisco's "rental fee" for its use of Hetch Hetchy Valley to store water and generate power, the Bush Administration highlighted anew the City's perennially controversial status as an occupant and user of land in a national park.

When it originally acquired the right to store water behind O'Shaughnessy

## The public-trust doctrine

Dating from classical times, the “public-trust doctrine” evolved through English common law to provide that navigable waters and the lands beneath them are held by the state in trust for the people. It provides a legal basis for states to limit uses of these resources that conflict with the broader public interest.

The public-trust doctrine’s best-known application to a water-rights controversy occurred in the context of Los Angeles’ diversion of water from eastern Sierra streams feeding Mono Lake. The California Supreme Court in *National Audubon Society v. Superior Court*,<sup>2</sup> held that the public trust could restrict Los Angeles’ Mono Basin diversions, even though Los Angeles had acquired water rights to the feeder streams many decades earlier. Pursuant to this decision, the State Water Resources Control Board (SWRCB) later limited Los Angeles’ right to divert stream flows, an action aimed at balancing the environmental interests of Mono Lake and Basin with the competing water-use needs of Los Angeles.

Article X, section 2 of the California Constitution has had many applications in environmental and conservation controversies. Among them, the case of *Environmental Defense Fund (EDF) vs. East Bay Municipal Utility District (EBMUD)*<sup>3</sup> may be the longest-lasting. Originally filed in 1972, the litigation has gone through two hearings in the California Supreme Court, a remand from the U.S. Supreme Court, an SWRCB proceeding, and a trial in Alameda County Superior Court. These proceedings ultimately led EBMUD to change the proposed location of an additional planned water diversion to a point on the Sacramento River below its confluence with the American River. EDF had originally asserted, among other things, that because an upstream diversion would be damaging to environmental values in the lower American River, it constituted an unreasonable use and diversion of water.



Mono Lake was central to one of the best-known applications of the public-trust doctrine. In 1983 the California Supreme Court held that the public trust could restrict Los Angeles’ Mono Basin diversions to protect this important natural resource.

Dam, San Francisco's most formidable opponents were no doubt TID and MID (with whom San Francisco was then forced to seek an accommodation). But its most vocal opponents were members of the then-nascent conservation movement, broadly distributed throughout the United States and led locally by John Muir, noted naturalist and founder of the Sierra Club. Conservationists' protests on behalf of the sanctity of Yosemite National Park and of the splendors of its "twin valley" were turned back, however, in order to supply San Francisco—still recovering from the great earthquake of 1906—with water and power and to provide a public alternative to the growing might of Pacific Gas and Electric Co. (the rapidly expanding private-utility "monopoly").

Battled over through successive national administrations, Republican and Democratic alike, as well as multiple Congresses increasingly enmeshed in the public-private controversies of the day, San Francisco finally persuaded Congress to pass the Raker Act, and President Woodrow Wilson to sign it into law, in 1913. This act is the fundamental federal authorization for San Francisco to store a significant share of its water supply in Yosemite National Park.

Although potentially subject to changing federal and state water and environmental laws, San Francisco's water-storage rights in Yosemite are indefinite in duration. Absent actions that it might take in contravention of provisions of the Raker Act or Congressional legislation amending (as by increasing the rental fee) or terminating its rights, San Francisco's leasehold effectively continues in perpetuity.

As has been explored in greater detail earlier in this report, however, San Francisco's water storage at Hetch Hetchy is but a minor share of its overall water-storage system. On the Tuolumne itself,

the City presently has storage rights in Cherry and Eleanor Reservoirs and most significantly in New Don Pedro Reservoir, which holds six times more water than Hetch Hetchy. While O'Shaughnessy Dam was an engineering marvel of its time and Hetch Hetchy remains an integral part of San Francisco's water-storage and -delivery system, Don Pedro has become the Tuolumne River watershed's workhorse.

Don Pedro was built as a cooperative venture by TID and MID, with considerable funding provided by San Francisco. But, as discussed in greater detail in Appendix C, its authorization and construction followed lengthy and combative negotiations between San Francisco and the Districts. Eventually, four separate agreements were required before the parties could reach the accommodation that led to New Don Pedro's construction.

In consideration of San Francisco's sharing of its construction costs, the City effectively secured a right to store water in Don Pedro. This is an unusual storage right, however, as San Francisco presently has no physical means for diverting water from Don Pedro to the San Joaquin Valley pipelines that it uses to convey Hetch Hetchy water to the Bay Area. In essence, San Francisco maintains a storage "bank account" in Don Pedro, which allows it to divert and use Tuolumne River water that is within TID's and MID's senior appropriative-water-right supply upstream of Don Pedro, and to credit TID and MID with equivalent amounts of San Francisco's water stored in Don Pedro downstream.

Finally, San Francisco owns, holds rights to store water in, and operates several major dams and reservoirs in the Bay Area. Among them is the Calaveras facility (in the Alameda Creek watershed), acquired in 1930 when the City took over the Spring Valley Water Com-

pany. San Francisco is presently investigating possibilities for increasing the size of Calaveras Dam and Reservoir—in some scenarios by as much as, or even more than, the storage capacity of O’Shaughnessy Dam and Reservoir.

#### SAN FRANCISCO’S RIGHTS TO GENERATE POWER ON THE TUOLUMNE RIVER

As has been described in greater detail in prior chapters, San Francisco’s priority in operating its Tuolumne River system is to assure water deliveries to itself and its water customers. Nevertheless, the generation of hydroelectric power at the City’s three Tuolumne River powerhouses is a valuable source of low-cost electricity for satisfying its own and the Districts’ municipal power needs. This generation also has been a source of revenue for San Francisco.

Unlike most other hydroelectric plants in the United States, San Francisco’s Tuolumne River facilities are not subject to the regulatory oversight of the Federal Energy Regulatory Commission. Instead, by the terms of the Raker Act, they are overseen principally by the Secretary of the Interior, although the Secretary of Agriculture has jurisdiction over aspects of their operations that affect Stanislaus National Forest and the State of California has nascent jurisdiction to set prices for the power they generate.

In 1913, when the Raker Act was passed, and for many years thereafter, the struggles between public and private power were among the most contentious public-policy battles in the nation. Accordingly, it is not that remarkable that the Raker Act gave the Secretary of the Interior discretion to require San Francisco to develop additional hydroelectric power facilities beyond what San Francisco might have wanted to develop and, absent San Francisco’s

willingness to pursue that development, to develop the additional facilities on his or her own.

In addition, the Raker Act prohibited the sale of power by San Francisco “to private persons or corporations,” while it required that any electricity in “excess” of San Francisco’s “actual municipal public purposes” be sold to TID, MID, and municipalities within those districts. But the definition of excess depends on whether electricity required for municipal purposes includes what is used by San Francisco’s wholesale water-supply customers. Having recently reorganized themselves under the auspices of a new agency—the Bay Area Water Supply and Conservation Agency (BAWSCA)—the customers could not only have a vital stake in San Francisco’s water system but, if they assert a priority and prevail in pursuing that line of argument, in its hydroelectric system as well.

#### **Legal and institutional aspects of restoration**

##### CHANGES IN POINTS OF DIVERSION, WATER QUANTITIES AND STORAGE LOCATIONS

In examining the different scenarios by which Hetch Hetchy Valley might be restored to its natural splendor, this report has considered alternatives regarding points of diversion of water, levels of diversion from those points, and storage locations. None of these alternatives is free of legal and institutional constraints. Like all other major California waterways, the Tuolumne River has had a long history of legal wrangling and negotiation. Any potential change in its management or exploitation will be carefully scrutinized by a wide range of stakeholders.

The analysis in Appendix C examines in considerable detail the concerns that are likely to be raised should San Francisco

propose either to increase its diversions from the river or even just to enhance its physical capability to do so. While San Francisco presently takes considerably less water from the Tuolumne than the amount to which it lays claim, others whose interests lie downstream of the City's current points of diversion may well raise substantial objections to any action—such as a fourth pipeline across the San Joaquin Valley—that San Francisco may soon formally propose as part of its Capital Improvement Program.

Less clear, however, is how downstream interests will react if it is formally proposed that San Francisco reduce its ability to divert water upstream, in the context of a Hetch Hetchy restoration program. The most challenging, but also potentially the most fruitful, proposal would involve modifications in San Francisco's storage and diversion capabilities with respect to Don Pedro Reservoir. As senior water-rights holders on the Tuolumne River and as the principal operators of Don Pedro, TID and MID can fairly be expected to examine with great diligence any proposed significant changes in Don Pedro's configuration and use. While they might view a reduction in San Francisco's capability to divert water upstream of Don Pedro with some favor, they could also be expected to worry about an increased role in Don Pedro operations that San Francisco might seek as part of any Hetch Hetchy Valley restoration scenario. And perhaps of even greater concern would be a proposal to have San Francisco divert significant quantities of water from or near Don Pedro itself. Building, operating and using such a connection, however, could obviously be one of San Francisco's most promising water-supply options in lieu of Hetch Hetchy.

A Don Pedro physical-access and operations negotiation involving San

Francisco, the Districts and, at least on some aspects of these matters, downstream interests, will be an exceedingly intricate enterprise. While perhaps not quite at the scale or with as many stakeholders as some other recent water-related negotiations in the region—such as those that led to the 1994 Bay Delta Accord, the 2000 CALFED Record of Decision, and the 2003 Quantification Settlement Agreement among California's Colorado River interests—a new Don Pedro agreement would certainly rival them both for its importance and in its likely complexity. Each involved party would seek assurances that its interests will be protected and that the protections are memorialized in the final agreements reached. To achieve these ends, not only would the immediately involved parties be called upon to exercise real statesmanship but so would others. The state and federal governments, for example, would surely need to make important contributions, in their regulatory capacities and otherwise.

Not quite comparable, but also complex and difficult, will be the negotiations involved in any plan to increase the storage capacity of Calaveras Dam and Reservoir in the East Bay hills. The seismic issues involved (with a significant urban population downstream of the dam) as well as environmental issues (in which Calaveras is already embroiled and that any proposal to modify the dam could be expected to complicate), will provide all of the affected interests with great challenges.

Although in recent years both the Contra Costa Water District and the Metropolitan Water District of Southern California have successfully built new off-stream storage dams to serve their customers, many other California agencies have found it difficult to build additional storage facilities for financial reasons and in some cases also because

of environmental concerns. While Calaveras would serve San Francisco for the most part as an off-stream storage site, it would also affect on-stream fishery and flow interests in a much more substantial way than projects like the recently constructed Los Vaqueros and Diamond Valley Reservoirs have done. Accordingly, if San Francisco is to upgrade Calaveras, it will need to design and operate an enlarged facility to fulfill the requirements of the National Environmental Policy Act, the California Environmental Quality Act, and federal and state endangered-species laws. That is, Calaveras must function in a manner that not only maintains existing values downstream of the dam—and addresses the impacts of flooding more habitat, but that actually enhances downstream values and more than mitigates for the habitat loss.

#### LINKING SAN FRANCISCO'S SYSTEM TO THE DELTA

For the century and a half during which it has been a major metropolis, San Francisco has run its water-supply system with little connection to the much larger system in the Sacramento-San Joaquin Delta. By contrast, almost all of urban southern California and much of the South, North, and East Bay Areas, as well as huge swaths of San Joaquin Valley agriculture, regularly obtain much if not all of their water from the Delta. Moreover, many others divert water upstream of the Delta pursuant to contracts with the federal government's Central Valley Project. But as an upstream diverter with relatively old water rights, and in possession of water-storage and delivery systems built without significant federal and state involvement, San Francisco's system has operated mostly independently of Delta-related considerations.

This circumstance is likely not to continue over the next few decades, what-

ever the future of Hetch Hetchy Valley. In the CALFED Record of Decision formally adopted by the Secretaries of Interior (U.S.) and Resources (California) in September 2000, considerable emphasis was placed on greater regional coordination both of water-supply planning and of current and future water-supply infrastructure. Prompted partly by this state-federal initiative and in part on their own initiative, San Francisco and other Bay Area water-supply-delivery agencies have increasingly been exploring regional interconnections in recent years. Such networking would serve both as a hedge against emergency interruptions in their service areas' water supplies and as a possible way to address future water shortages in a cooperative and cost-effective manner.

For San Francisco to strengthen its linkages with regional neighbors, it would surely be advisable for the City to expand its ability to acquire and deliver water from the Delta, even if only in drought periods. The legal complexities that will attend this potential diversification of San Francisco's water supply are many, and only a sketch of what may be involved is warranted here. For at least four decades, all water users in the entire Central Valley watershed have at least nominally been participants in a series of regulatory proceedings before the State Water Resources Control Board. Two major issues have been at play in those proceedings: the priorities of various water-rights holders in the watershed, and these holders' obligations to ensure that various indices of water quality and fisheries protection in the Sacramento-San Joaquin Delta estuary are met.

In the best case, as described more fully in Appendix C, San Francisco should be able to successfully assert that the seniority of its water rights in the Tuolumne River are sufficient to allow

diversion of amounts equivalent to those rights downstream in the Delta. Certainly such a position would have the precedents in its favor that applaud the multiple use of water and that recognize the value of the increased in-stream flows in the Tuolumne that would accompany a regime in which San Francisco is diverting more water downstream.

When San Francisco proposes to use a Delta water source that is not based on its Tuolumne water rights, however, its prospects are likely to be less favorable. Although, as noted above, municipal and domestic uses of water are entitled to some preference in California water law, the extent of this preference is unclear; users who divert for agricultural purposes and who have senior water rights can be expected to contest any assertion of a municipal or domestic preference. However, San Francisco, like other urban agencies in recent years that have purchased or leased agricultural water rights in the Sacramento-San Joaquin watershed, should be able to successfully consummate those acquisitions. They would be subject, however, to outflow requirements or other restrictions that the State Water Resources Control Board or others—such as the Bureau of Reclamation (when federal water is involved) or the California Department of Water Resources (should its aqueducts be used for conveying any of the water)—may place on the acquisitions.

California water law is still evolving, especially where the Sacramento-San Joaquin Delta estuary is concerned, and the demands on the Delta system have been growing in all sectors. Thus the regulatory, legal, and political responses to these demands cannot yet be said to have produced a situation wherein any potential diverter from the Delta can be wholly comfortable that its water supplies will be available under all circumstances. That said, as

the CALFED Record of Decision noted, it is in the state's interest that San Francisco be better interconnected to its neighbors and that over time more of San Francisco's supplies be diverted downstream. To make progress on these objectives in a manner that also meets the City's interests in securing a reliable high-quality water supply, San Francisco must receive assurances commensurate with those relied on by other major Delta-water diverters.

#### GROUNDWATER STORAGE AND CONJUNCTIVE USE

California water users have been using groundwater and surface water conjunctively for many years. Indeed, some of the state's most renowned water projects, including the Central Valley Project, the State Water Project, and even several elements of Southern California's Colorado River delivery system, were designed to deliver surface water when it is relatively plentiful and to rely on groundwater storage when there is insufficient surface supply. As the number of new surface-water-supply projects has dwindled in recent decades, California water agencies have increasingly turned to new conjunctive approaches in which they've contractually agreed to store some of their surface water in groundwater basins over which others have effective control. As noted in Chapter 3, several Bay Area water agencies already have groundwater banking and exchange programs in place in the San Joaquin Valley.

The San Francisco Public Utilities Commission (SFPUC) is not among those agencies, however. While the groundwater basins in the vicinity of the Tuolumne River currently have very significant amounts of water in storage, it is also the case that the districts overlying those basins have thus far shown

little inclination to negotiate groundwater banking and exchange agreements with San Francisco. The obstacles to successful negotiation that would allow San Francisco to avail itself of this storage capacity are not so formidable, however, that the City should consider ending its pursuit of this option. Although it took over 30 years to conclude the surface-water-sharing agreement between San Francisco, TID, and MID that led to the construction of New Don Pedro, an agreement for sharing underground storage capacity should not take this long. Ultimately, what is crucial is that those communities overlying the basins—and that are directly affected by any conjunctive-use scheme—be assured that they will receive benefits commensurate with the value of the assets they have agreed to share.

#### TRANSFERS

Just as groundwater-storage and conjunctive-use agreements have become increasingly common in recent years, so have voluntary transfers of water. For over two decades, the California legislature has encouraged transfers, principally by assuring that water-right priority is not forfeited when an entitled user chooses to conserve water and then sell or lease it to some other user. In most cases, these transfers have been short-term, usually for one year, one growing season, or even several years in a row. But in some cases—especially where an urban user, or an agricultural user with a significant investment in permanent plantings, is involved as a prospective buyer—the buyer seeks assurances in advance that a supplemental water supply will be available in those future circumstances when it is short of its base supplies. In these cases, effectively option arrangements, the prospective seller retains the water-

purchased in years when the buyer does not call its option. This allows the seller to make a premium price by selling its water in dry periods, but also to continue to use its water during wetter periods in more conventional ways.

For communities concerned about the reduced economic activity that may occur as agencies sell water outside their localities, it should be noted that these occasional sales could provide an overall benefit. Sellers may use the supplemental income they derive from sales in dry years to upgrade the efficiency of their water-delivery systems or otherwise improve their farming operations. Although the legislature is still grappling with issues dealing with the community impacts of transfers and issues surrounding access to common-carrier aqueducts and environmental-impact review also remain contentious, few would contend that transfers are not here to stay as a major source of supplemental water supplies for entities looking to assure additional deliveries during future drought periods.

#### POWER

Chapter 9 of this report analyzes the probable changes in hydroelectric generation associated with different scenarios for restoring Hetch Hetchy Valley. Because all scenarios would involve at least some reduction in the capacity of the Kirkwood and Moccasin powerhouses, all would reduce the electricity available to these sources' present and future beneficiaries. As such, it is at least arguable that restoration proposals would run afoul of the Raker Act's emphasis on maximizing the production of public power from the Tuolumne River's water supply. Although this federal law is now over 90 years old, it is not inconsistent with more recent expressions of Congressional intent that have encouraged the devel-

opment and use of hydroelectric power to serve the public's electrical-energy needs.

On the other hand, in 1921, less than a decade after it passed the Raker Act, Congress passed another law prohibiting the issuance of licenses for hydroelectric projects in national parks. In recent years Congress and the Federal Energy Regulatory Commission have authorized and funded the decommissioning of dams in various locations when they have perceived the environmental and social benefits of decommissioning to be greater than the continued utility of operating the dams as hydroelectric facilities.

In any case, a proposed change as significant as returning Hetch Hetchy Valley to Yosemite National Park will require explicit Congressional action for reasons beyond its hydroelectric-power implications. It will also require, at the regional level, significant negotiations between San Francisco, the Districts, and potentially San Francisco's customers in BAWSCA.

#### REGULATORY CONSIDERATIONS

San Francisco's potential plans to add new storage, conveyance capacity, and treatment capability to its water-delivery system will certainly attract the attention of a wide range of regulatory agencies responsible for protection of the nation's and state's environment and natural resources. But only one of them will have overall authority in this case. In 2003 Congress passed legislation, principally promoted by San Francisco and sponsored by Representative Nancy Pelosi, consolidating environmental review of San Francisco's Capital Improvement Program (CIP) in one location: the San Francisco District Office of the U.S. Army Corps of Engineers. Thus it will be in proceedings launched by the Corps where the merits of Calaveras Dam enlargement, construction of a fourth pipeline across the

San Joaquin Valley, and expansion of the Sunol Water Treatment Plant will be most intensively studied. How this review will take place, whether it be project by project, or whether a comprehensive Environmental Impact Statement is required, is not yet known.

A comprehensive analysis of the proposed restoration of Hetch Hetchy Valley could well be an optimal course for the Corps, and not only because such a plan would involve several components of San Francisco's own plans for the future. A comprehensive Corps process would also provide a rare opportunity for interested federal and state agencies to work together for a common purpose.

Participation in the process by the U.S. Bureau of Reclamation and National Park Service would be especially valuable in providing expertise and on-the-ground knowledge and commitment. Indeed, the SFPUC's general manager wrote to Rep. Pelosi in 2003 that "these agencies play prominent roles with regards to the Hetch Hetchy system and in the greater California water community." Both agencies, moreover, report to the Secretary of the Interior, the principal official designated by Congress to administer the Raker Act. Similar expertise resides at the state level in the Department of Water Resources, the Department of Parks and Recreation, and the Department of Fish and Game, all of which are housed within the State Resources Agency.

None of these entities—nor others involved in the CIP review, such as the U.S. Fish and Wildlife Service (where responsibility resides to protect endangered species)—has the breadth of capability to conduct a comprehensive analysis of restoration alternatives on its own. Working together, especially in cooperation with San Francisco and with such other vitally interested parties as TID, MID, and BAWSCA,

a comprehensive analysis could well be accomplished within the context of the Corps' process.

The Corps is not the only regulatory agency with an interest in San Francisco's system. The State Water Resources Control Board (SWRCB) is the regulatory entity principally responsible, along with the state courts, for assuring that the City is taking water in compliance with its state-granted water rights and that the public trust is being met with respect to its use of the Tuolumne River. The SWRCB is also responsible, again in parallel with the state courts, for assuring that San Francisco does not unreasonably use or divert water. Moreover, the SWRCB must assure that water-quality standards for the entire Sacramento-San Joaquin Delta watershed are adopted, implemented and enforced, and it will likely be called upon as well to review San Francisco's plans for the Alameda Creek watershed.

Meanwhile, the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services (DHS) will no doubt continue to be critically involved in reviews not only of the drinking-water-quality aspects of San Francisco's system but also, more indirectly, of its general impacts on water quality and the environment. Ultimately, the EPA and DHS will have much to say about whether San Francisco can continue to avoid filtering the bulk of the water it supplies to its customers. In the last several decades the EPA has also taken considerable interest in assuring that the SWRCB does not renege on its duty to update and implement water-quality standards for the Bay Delta estuary, generally considered the most important on the Pacific Coast of the Americas.

Finally, although it does not have jurisdiction over San Francisco's Hetch Hetchy power generation, the Federal

Energy Regulatory Commission—working with agencies such as the California Public Utilities Commission, the California Energy Commission, and the Independent System Operator—has overall responsibility for ensuring a reliable electricity supply in California. The state agencies in particular could be valuable in giving San Francisco and others assurance of replacement power supplies for those supplies forgone should Hetch Hetchy Valley be restored.

## Conclusion

This chapter began by noting that no legal or institutional obstacles seem so formidable as to block consideration of the water-supply, water-quality, and replacement-power options entailed in the restoration of Hetch Hetchy Valley. Indeed, disparate authorities, including the Raker Act itself, the public-trust doctrine, and the injunctions of the California Constitution's Article X, section 2 against the unreasonable use or diversion of water, seem to *require* an ongoing duty to consider alternatives that might lead to the valley's restoration. Fortified by the procedural and substantive requirements of the National Environmental Policy Act and the California Environmental Quality Act, the Corps of Engineers review of San Francisco's Capital Improvement Program provides a forum for considering such alternatives.

However, it is also the case, as described in greater detail both elsewhere in this chapter and in the legal memorandum incorporated as Appendix C, that substantial legal and institutional hurdles must be overcome in order for a restoration scenario to actually come to pass.

Most significantly, Congress must amend and modernize the Raker Act and authorize an altered set of purposes for use of national-park land.

The State of California, in furtherance of various of its regulatory and management roles, will also need to act so as to assure San Francisco's water-use, diversion, and storage rights in a new configuration. It must also assure the City, the Turlock and Modesto Irrigation Districts, BAWSCA, and others that it will legally require a fair resolution—prior to implementation of any restoration scenario—of the myriad issues raised by such major changes in San Francisco's water-delivery and power-generation system. Meanwhile, these directly interested parties will need to negotiate new arrangements amongst themselves that equitably reflect the legitimate demands they all place on the

Tuolumne River's capacity to provide water and generate power.

All this, as described in some detail in Chapter 10, cannot happen without incurring significant costs. In bearing that expense, it is not reasonable to ask San Francisco, its customers, and the Districts to act alone, independent of the broader state and national publics that would benefit from a restored Hetch Hetchy Valley. Thus it is apparent that ultimately both the state legislature (and/or the state's voting public) and the Congress will need not only to provide the legal assurances that would be required for any restoration scenario to succeed, but also to share significantly in funding the arrangements that ensue.