



Western Water Wars: Efforts to Take Over San Francisco's Hetch Hetchy Systems

By Brian Browne

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The history and current dynamics of the seventh largest multi-utility system in the United States, San Francisco's Hetch Hetchy system, are complex to say the least. Many players are involved, including, but not limited to, city, regional, state, and federal politicians; state and federal courts, including the Supreme Court of the United States; and any number of multilevel governmental jurisdictions. Currently, the city of San Francisco has control over the operation of the Hetch Hetchy water and power system, but within the political sphere suburban interests have orchestrated a well-organized effort to transfer this authority from the city to a multi-headed public agency—BAWSCA—some-what like the Metropolitan Water District of Southern California. Obviously, this can only be an overview of a very complicated situation.

Under this transfer of authority, San Francisco would become just one of 30 retail services with the whole-sale water and power system governed by the recently formed Bay Area Water Supply and Conservation Agency (BAWSCA), which includes suburban retail services in Alameda, Santa Clara, and San Mateo Counties. BAWSCA retailers buy wholesale from the San Francisco Public Utilities Commission (SFPUC) and resell to retail customers. It could

be argued that they in fact make a “profit” on reselling Hetch Hetchy water. The word “profit,” for a municipal agency, of course, is definitional and arguable, but relatively high-salaries, secure jobs, lots of time and money to lobby Sacramento, plus many benefits cannot be discounted to zero.

This is not good policy in the best interests of San Francisco and its citizens and the takeover can only be turned back by vigorous leadership from the mayor to restore the effectiveness of the San Francisco Public Utilities Commission (SFPUC), a city department that oversees the Hetch Hetchy water and power system. Furthermore, the Hetch Hetchy power system should be reorganized to function as a competitive service directly to San Francisco households and businesses.

A Brief History of Hetch Hetchy

The ramifications of the Hetch Hetchy dilemma are rooted in its history. The story goes back a century. In 1905 Hetch Hetchy Project construction began and in 1913 Congress passed the Raker Act giving San Francisco the right to build dams and store water in the Sierra Nevada within Yosemite National Park in the Hetch Hetchy Valley, and then transport and distribute this water to San Francisco Bay



Area customers by way of an extensive 160-mile gravity-aqueduct and storage system. The Raker Act also directed San Francisco to produce electricity and make it available, via a competitive municipal power district, to local residents and public entities.

When Congress passed the Raker Act in 1913, it granted San Francisco the rights-of-way to dam the Tuolumne River in Yosemite National Park and construct water-collection and power-generating facilities stretching from the Sierras to the San Francisco Bay Area. It further mandated that this water must be made available to the Turlock and Modesto irrigation districts (central California) and that hydro-power from the Hetch Hetchy dams would supply these two districts with electric power to uplift water for irrigation purposes, with the residual power flowing to San Francisco.

Hetch Hetchy construction costs from 1913 to the first delivery of Tuolumne water to San Francisco in 1934 were slightly over \$100 million at the time. These costs were borne entirely by San Francisco, without state or federal assistance. San Francisco was encouraged by the Army Corps of Engineers to assume leadership for providing the entire water needs of the Bay Area. This need was eased in the 1920s when East Bay cities, by forming the East Bay Municipal Utility District, elected to build and develop their own water supplies from the Mokelumne River. The original concept to deliver 400 million gallons per day (mgd) from Hetch Hetchy was modified to 300 mgd. The system currently satisfies an average demand of approximately 260 million gallons per day. Plans are being developed to enlarge the overall system reliability to between 300 and 310 mgd to serve a growing suburban population.

The 2000 Water Supply Master Plan for SFPUC defines reliability as the ability to sustain specified volume flows over established water conditions. Currently this is 239 mgd, of which 16 percent (30-40 mgd) is developed from the Bay Area watershed and 85 percent from the Hetch

Hetchy watershed. Currently the Hetch Hetchy system supplies water to San Francisco, with its population of an estimated 700,000 and to 29 wholesale water purchasers/agencies (for retail distribution) in San Mateo, Santa Clara, and Alameda counties, reaching a total of 2.4 million people. The 29 wholesalers-purchasers are organized into the Bay Area Water Supply and Conservation Agency (BAWSCA), created by the California legislature in 2002 with adoption of AB2058, formerly the Bay Area Water Users Association (BAWUA), founded in 1958 as a non-profit organization and incorporated in 1991.

One of BAWUA's (now BAWSCA) historical functions has been to oversee administration of the 1984 "Settlement Agreement and Master Water Sales Contract," or Master Water Sales Agreement (MSA), it has with the SFPUC. Some now seek a merger of the SFPUC into BAWSCA, which would create an agency similar to the Metropolitan Water District of Southern California. The urgency of the current flurry of political actions could be in anticipation that the master contract will expire in 2009 and that the suburban Bay Area population is growing, while San Francisco's population is static or decreasing slightly.

The SFPUC is a department of the city and county of San Francisco that provides water, wastewater, and municipal power to San Francisco and governs the Hetch Hetchy system. Under the master contract, the SFPUC supplies approximately 66 percent of the aggregate water needs of BAWSCA members. The SFPUC provides four major organizational services: Regional Water (a transportation system for delivering water to suburban and city customers), Cleanwater (sewerage collection and disposal), Local Water (San Francisco distribution), and Power.

San Francisco's stewardship of this magnificent system has been mixed. The system still works: taps provide water and toilets flush for the 2.4 million customers dependent on the Hetch Hetchy system. But San Francisco has not complied with tenets of the Raker Act requiring it to make power available to consumers via a competitive municipal power district, and has arguably even circumvented the U.S. Supreme Court to ensure that Pacific Gas and Electric Company (PG&E) has monopoly rights to sell power to San Francisco.

In addition, San Francisco city government has drained off approximately one billion dollars (current value) from the Hetch Hetchy power system for its general fund, money that should have been used for system repairs. The city has



failed to perform necessary upgrades to the system, and has no long-term strategic plan to implement timely repair and replacement programs. The management of the Hetch Hetchy system has been highly politicized, as evidenced by seven general managers in the last five years. Currently, the permanent management position is vacant. Although the mayor has nominated a new general manager, City Treasurer Susan Leal, the San Francisco Board of Supervisors and the Public Utilities Commission must approve her confirmation. Now well-organized suburban customers are trying to force San Francisco to cede the Hetch Hetchy system and join a large regional water system dominated by “Silicon Valley” interests.

The system is in dire need of repair. All Hetch Hetchy customers will suffer if the system is not brought up to grade and if an unwieldy, multi-headed governance system is installed. San Francisco needs to enter promptly into public/private partnering construction contracts to meet legislatively mandated deadlines (assembly Bill 1823) for restoring Hetch Hetchy. The mayor of San Francisco must accept personal responsibility for ensuring that Hetch Hetchy’s excellence is restored and that San Francisco’s governance is maintained.

As prescribed by the Raker Act, allowed under the city’s charter, and encouraged by AB1890, San Francisco must act as an alternative and competitive municipal power provider. The city might even consider forgoing self-regulation and allowing the California Public Utilities Commission to regulate its tariffs (rates and rules) as a way to bring some objectivity into the process. Clearly the present situation cannot continue. The mayor must act now and act boldly to upgrade Hetch Hetchy, comply with the Raker Act, and

ensure political interests do not subvert the system.

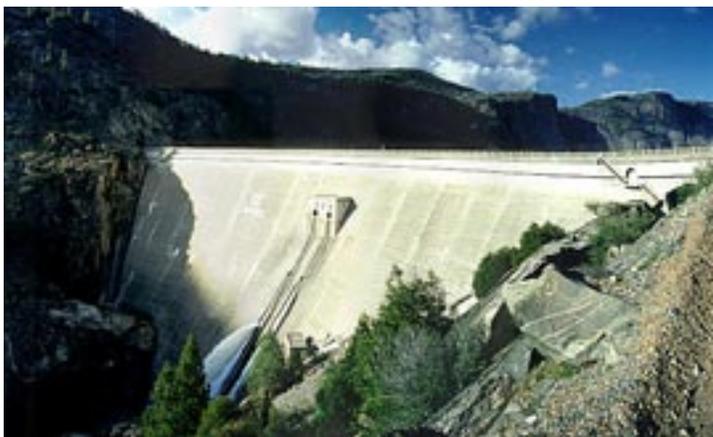
Power and Hetch Hetchy

In 1913 U.S. Representative John Raker of Manteca, California, backed the creation of the Hetch Hetchy system, allowing San Francisco to dam the Hetch Hetchy Valley on the condition that “the dam must be used not only to store water but also generate electric power, which must be sold directly to citizens through a municipal power agency at the cheapest possible rates.”

The Hetch Hetchy power transmission grid was built only as far as Newark, which is thirty miles southeast of San Francisco and conveniently located next to a PG&E substation. In 1925 San Francisco claimed it was out of money to complete the segment from Newark to San Francisco. In 1927 a bond measure to complete this task failed by a vote of 52,215 to 50,727. Subsequent bond/ballot measures to create a power municipality have failed.

Then PG&E, an investor-owned company, constructed the remaining line-segment to ensure that it remained the sole supplier of power to the San Francisco private sector. PG&E transported SFPUC power for a fee from Newark to San Francisco.

In 1940 the Supreme Court decided to uphold the intent of the Raker Act and overturned a 9th Circuit Court of Appeals decision by an 8 to 1 vote, which had allowed PG&E exclusive monopoly service area rights. Justice Hugo Black, wrote in his opinion supporting the city that the Raker Act “...clearly intended to require—as a condition of its grant—sale and distribution of Hetch Hetchy power exclusively by San Francisco and municipal agencies directly to consumers in the belief that consumers would thus be afforded power



at cheap rates in competition with private companies, particularly Pacific Gas and Electric.”

The Raker Act mandated that San Francisco produce municipal power. The Hetch Hetchy’s power capacity is 400 megawatt-hours (mwh), but the base load is currently estimated at 260 mwh. San Francisco supplies power to the Turlock and Modesto irrigation districts, which receive the bulk of their Hetch Hetchy power at approximately \$16/mwh. This is based on the imputed cost of producing hydropower from Hetch Hetchy. City non-revenue-generating facilities pay approximately \$37.50/mwh, while revenue-generating facilities pay a rate tied to PG&E rates. The SFPUC also purchases power directly through contracts and group power-purchases referred to as aggregation.

Many believe that the current low-priced (approximately \$16/kwh) contracts with the irrigation districts (Turlock and Modesto) and the district’s right of first refusal for Hetch Hetchy base-load power over 300 mwh aren’t using Hetch Hetchy power as intended. The current favorable contracts increase demands on the system and inhibit pump storage (a system of pumping water back to the reservoir at night, when power and water use is low) which would allow expansion of power capacity while meeting the goals of water management and conservation.

Passed in 2002, AB1823, mandates a Hetch Hetchy “fix-up” with what are believed to be impossible deadlines (50 percent by 2010 and 100 percent by 2015). Some analysts believe that AB1823 merely required the system to address the nine major projects specifically mentioned in the bill. SFPUC may have been too ambitious in saying it could complete 38 regional and 39 local projects—50 percent by 2010 and 100 percent by 2015—as currently delineated in its capital improvement program as submitted to the state. Interestingly, AB1823 also directs the SFPUC not to

emphasize power over water. This part of AB1823 may be inconsistent with Raker and inhibit pump storage and other innovative water-management technologies, which would satisfy power and water storage objectives and allow San Francisco to develop a competitive municipal power entity.

The California PUC does not regulate SFPUC. As a municipality, the governing body of the SFPUC is the commission itself. The mayor, subject to confirmation by the San Francisco Board of Supervisors, appoints five members. The Commission, unlike the Revenue Bond Oversight Committee, established under Proposition P in 2002, does not require Commissioners have experience relating to the running of a utility.

In 2002, members of the mayor’s Infrastructure Task Force (ITF), of which I was a member, argued with the city administration, the commission, and many on the board of supervisors to no avail that the San Francisco Public Utilities, Hetch Hetchy Power Division (SFPUC-HHPD), was a “municipal power district” under the Raker Act, the city’s charter, and more recently AB1890 (the power deregulation act), and could provide public power to the private sector. Taskforce members suggested that the commission immediately begin selling Hetch Hetchy power to private citizens of San Francisco and provide a competitive alternative to PG&E.

The Task Force went further and argued, especially in its 2002 final report, that the SFPUC power division should do the following:

1. Transport PG&E’s city electric distribution system (wires), but do not attempt to acquire the system.
2. Internalize all SFPUC-HHPD surplus funds for overall Hetch Hetchy system use and do not continue to transfer these surplus monies to the general fund.
3. Act in an entrepreneurial manner by selling power high into the California Independent System Operator auction and by buying low.
4. Revise the irrigation district contracts to allow for time-of-day pricing and encourage the SFPUC power division to implement market-type activities such as pump storage.
5. Use the legal weight of the city and county of San Francisco to become actively involved in stopping market manipulation (“gaming”) of the San Francisco service area. (The Task Force members correctly assumed



that unethical suppliers artificially created most power shortages and high prices.)

However, in response to the Task Force's request for an entrepreneurial approach to managing Hetch Hetchy power, then-Mayor Willie Brown and the Board of Supervisors responded by pursuing one of the largest and most ambitious non-hydro alternative (wind, solar, and thermal-efficiency) programs in the nation. Unorthodox economic concepts such as reverse metering (cross-subsidization) and avoided costs (analyst-subjective choice of an alternative forgone) replaced orthodox economic analysis based on real opportunity costs and subsuming dynamic market conditions, thus underscoring San Francisco's rationalization for such an arguably very expensive alternative energy bias in the city's power portfolio.

Lawmaking Coincidences of 2002

To acquire/transfer an asset there are three established methods for assessing its value: (1) historical costs, (2) replacement costs, and (3) capitalized value of the net income stream. It appears that in Northern California possibly a fourth method is being used: acquisition/transfer by legislative actions.

There is an obvious need to repair and restore the integrity and reliability of the Hetch Hetchy system. That is only a small part of BAWSCA's objective. It wants to enlarge the system to meet an expanding suburban population base. The real costs of further draining the Tuolumne River to meet this demand must include all external—that is, environmental, recreational, health and social—and internal costs. These full costs must be reflected in the rate structure. This pricing approach might even prompt BAWSCA to look at alternative sources, such as ocean or bay water desalination. The legislative events, as narrated below,

point out how powerful political groups can affect votes, regardless of what is in the public interest.

In 2002 the California legislature passed AB2058, which established the Bay Area Water Supply and Conservation Agency (BAWSCA). This act transformed its predecessor Bay Area Water Users Association (BAWUA), from a trade association to a large public entity with all the powers of a water district. SFPUC could join and cede approximately 70 percent of its Hetch Hetchy governance. SFPUC would probably be relieved of its mandated deadlines under AB1823 if it chose to join power and cede ownership of the Hetch Hetchy system.

Proponents of regionalization see a larger government entity as more keenly reflecting of the well-being of the entire region. However, opponents believe that once regionalization is achieved, under BAWSCA's control (and perceived common animosity for San Francisco is quenched), these 29 suburban agencies will go in disparate directions to the detriment of San Francisco (the last agency at the end of the system) and the entire system. The concern with a BAWSCA takeover is that it would exploit the immense pre-1915 water rights that San Francisco has in the Sierra Nevada and the existing 400 mgd mountain tunnel capacity would be used to propel peninsula growth at the expense of San Francisco consumers as well as the environment.

Historically, suburban customers have received water under a master water contract. All repairs to the system have been the responsibility of the SFPUC. San Francisco's funding mechanism was unique in that the voters of San Francisco had the sole right to approve revenue bonds for capital improvement projects. City and suburban customers would retire revenue bond debt by increases in user fees (rates).

In 1997 San Francisco voters granted SFPUC the right



to issue \$304 million in revenue bonds for seismic and water quality upgrades. The bond measure spoke specifically to developing a plan, having the plan certified by an independent engineering firm, and doing the work. In the ballot literature, the city controller specifically mentioned that bonds could be issued on an incremental basis. There was no mention of other possible funding mechanisms in these bond measures. Task Force members questioned the wisdom of having this struggling utility in the banking business, stressing that more emphasis should be placed on planning and implementing utility-related projects.

Yet in 2000 Mayor Brown, with the concurrence of the Board of Supervisors, signed a legislative enactment that permitted the SFPUC to embark upon a large (\$250 million) commercial paper program to pay for capital construction. This program continues. As of June 30, 2004 San Francisco had commercial paper debt of \$25 million and had spent approximately \$14 million on work authorized under the 2002 Proposition A. In November 2002, San Francisco voters gave the SFPUC the authority to issue \$1.6 billion in revenue bonds for the “Fix Hetch Hetchy” program. In 2002 Proposition A, the authors did not overlook a reference to using commercial paper as an adjunct, short-term means of financing.

The SFPUC did not conduct any a priori cost-benefit analysis to determine if this specific portfolio and/or some alternative portfolio combination of commercial paper and incremental issuance of revenue bonds would be less expensive. All questions were greeted with the obvious—that long-term debt is more expensive than short-term debt. Staff at SFPUC did acknowledge that eventually commercial paper would be redeemed by issuing revenue bonds. This could be considered as another example of SFPUC’s lack of planning in resource allocation.

In 2001, under pressure from Task Force members, the SFPUC had its 1997 Proposition A and B ballot measure plans certified by an in-house group of engineers. Shortly thereafter the SFPUC began retiring commercial paper through bond issuance. What was actually repaired and upgraded resulting with funds from 1997 A and B ballot measures remains in contention. Many believe that this contention is a direct result of the failure to hold decision-makers accountable.

What is certain is that some San Francisco politicians and suburban wholesalers saw the need to dispossess San Francisco voters of the sole oversight power to issue revenue bonds for the entire Hetch Hetchy system, to gain political control of the funding mechanisms, and therefore to govern the Hetch Hetchy system. The year 2002 was a busy year for regional and local politicians. Major local and state legislative action was being carried out to ensure that San Francisco would lose its system and that politicians would have access to considerable monetary resources, based on revenue generated by the Hetch Hetchy system. Politicians from diverse political jurisdictions developed sophisticated and what appeared to be highly correlated and complementary bills. The possibility of a sophisticated power grab occurred to a number of analysts. The timing of all these legislative actions could be interpreted as purposeful.

Overshadowing and also interwoven into this regionalization and funding debate are the real issues of the system retrofit and repair due to normal wear and tear and the very present threat of earthquakes and other natural catastrophes. AB2058 (BAWSCA) alone looks like a simple creation of a legislatively formed local entity to ensure the good health and common good of its constituents. However, there are two other pieces of state legislation to consider, also passed in 2002 and driven by BAWUA/BAWSCA.



These are AB1823 and SB1870.

In San Francisco the year 2002 was a tumultuous ballot season leading up to the passage of city Propositions A, E, and P. There is a thread running through Propositions A and E and legislation AB2058, AB1823, and SB1870 that one might find difficult to see as casual.

- AB2058 created a legislatively formed local district that San Francisco could join and cede 70 percent of its governance of the Hetch Hetchy system. This district can issue revenue bonds without voter approval.
- AB1823 is the “fix Hetch Hetchy” legislation that sets deadlines for the SFPUC to complete a thorough overhaul of the Hetch Hetchy system. The estimated cost of this overhaul in current dollars is \$3.6 billion. The Act calls for work to be 50 percent completed by 2010 and 100 percent by 2015.

- SB1870 also created the San Francisco Bay Area Regional Water System also known as the Regional Funding Authority (RFA). This bill creates a “bank” to loan money to San Francisco (should SF elect to become a voting member) and BAWSCA members. No voter approval is required to issue debt by the RFA. The asset for the RFA is the revenues of San Francisco’s Hetch Hetchy system. The Task Force chair, in a *San Francisco Examiner* opinion piece, referred to the RFA as a “shell game.” The RFA was clearly a backup option in case Proposition E failed and a way of issuing debt without voter oversight. Prior to the passage of E, all Hetch Hetchy revenue bonds had to be approved by the voters of San Francisco.

All of San Francisco’s elected officials voted for these three legislative acts. Also, most of the members of the SF Board of Supervisors supported Propositions A and E.

- Proposition A called for funding authority for SFPUC to issue \$1.6 billion in revenue bonds. It also said that if favorable terms existed, the suburban segment could be funded from the RFA (a bank funded by SFPUC revenues).
- \$2 billion of the \$3.6 billion capital improvement program could be financed by the Regional Funding Authority.
- Proposition E, among other things, called for San Francisco voters to give up their charter rights to approve revenue bonds. Regrettably, in November 2002, San Francisco voters agreed to forgo this historical right.
- Proposition P called for the formation of the Revenue Bond Oversight Committee (RBOC), a committee of seven appointed members: two by the mayor (Brown); two by the SF Board of Supervisors; one by the city controller (Harrington); one by the budget analyst (Rose); one member by BAWSCA. Proposition P was proposed by Task Force members as a direct result of the 1997 A&B situation, which had resulted in the issuance of commercial paper. The addition of a BAWSCA member was inspired as a gesture of collegiality and as an effort to bring BAWSCA into the loop and encourage it to cease their takeover efforts.

Again, we know the Hetch Hetchy system must be fixed. This probably will require public-private partnering of

SFPUC with project management consultants. BAWSCA is inaccurate when they say San Francisco has never successfully undertaken a project of this magnitude. The building of the system, using San Francisco's own money, in current dollar value, is of the order of magnitude of the proposed capital improvement program.

Markets are the most effective way to ration this valuable Tuolumne River water resource. At the same time, prudence dictates that key imperatives for the best management of the system include:

- Flowing Hetch Hetchy power directly to San Francisco.
- Avoiding “banks” (RFA) without assets.
- Developing a long-term strategic plan and a viable business model for the system.
- Considering allowing the California Public Utilities Commission to regulate Hetch Hetchy rate setting

The management of Hetch Hetchy must not be swayed by expansionists like BAWSCA, but must consider the total environmental, social, economic and political impact on Northern California. This takeover is not in the best interests of San Francisco and its citizens, and can only be turned back by vigorous leadership from the mayor to restore the effectiveness of SFPUC. Furthermore, for the San Franciscans to realize the best value for their money, the Hetch Hetchy power system should be allowed to function as a competitive service directly to San Francisco households and businesses.

By Brian Browne a San Francisco economist specializing in water resource issues. ■



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