

HETCH HETCHY: FACTS AND FIGURES

By Leslie K. Bolin
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Located in the northwest quarter of Yosemite National Park is Hetch Hetchy Valley, through which runs the Tuolumne River. Its name comes from the Indian "atch atchie", meaning edible mix of grasses and seeds.

Today this 1,972 acre valley is flooded with water impounded by the O'Shaughnessy Dam. The gravity arch dam was completed in 1923 and raised an additional 86 feet fifteen years later, and is now 312-feet high. Some 390,000 cubic yards of concrete were poured during its construction. The reservoir has a capacity of 360,360 acre-feet of water, about 117.5 billion gallons. The actual volume fluctuates greatly from season to season leaving a large devastated "dead zone." Ron Felzer, Hetch Hetchy, (1973).

Hetch Hetchy was

built primarily to meet the water needs of the City and County of San Francisco. As part of a system comprising three other reservoirs (the nearby Lake Eleanor with a 27,000 acre-foot capacity, and Lake Lloyd at 268,000 acre-feet, as well as the downstream 2,030,000 acre-foot New Don Pedro Reservoir in which the City owns space), its functions are also to control floods, maintain instream flow requirements, and generate hydroelectric power. Existing tunnel-pipelines limit the maximum amount of water that can be delivered to San Francisco to 300 million gallons per day, or 360,000 acre-feet annually. The system supplies water to two million suburbanites in San Mateo, Santa Clara, and Alameda counties, as well. Annually the system supplies about 2 billion kilowatt hours of hydroelectric energy. Hetch Hetchy: Water and Power Replacement

Concepts, page ix-x.

Since the dam also generates electrical power, it must keep a constant flow of water going which also causes large fluctuations in the reservoir's surface level and adds to the devastated zone where no vegetation can survive.

Presently, the City and County of San Francisco obtain about 77 percent of their water supplies for municipal and industrial uses from the Hetch Hetchy system. From 1976-1986 diversions from the system averaged 214,000 acre-feet per year, which is just under two-thirds capacity on the average. Diversions in fiscal year 1986 were at three-quarters capacity.

Approximate figures with respect to valuation, revenues, and expenditures for the Hetch Hetchy system as of June 30, 1987 are:

City's total fixed investment: (plant, property, equipment): \$414.5 million

Net book value:
 \$272.8 million
 Balance to be
 repaid:
 \$3.4 million
 Water revenues
 (fiscal year):
 \$7.8 million
 Hydroelectric
 power revenues:
 \$89.6 million
 Operation and
 maintenance expenses:
 \$70.5 million
 (Net Revenues
 1986-1987:
 \$26.9 million)
Hetch Hetchy, page
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Is restoration of Hetch Hetchy Valley feasible?

By Ken Bogdan
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Secretary of
 Interior Donald
 Hodel's proposal to
 restore Hetch Hetchy
 Valley to its natural
 state has created
 both controversy and
 skepticism.

Politics aside,
 the main concern in
 draining the Hetch
 Hetchy Reservoir is
 whether or not resto-
 ration of the valley
 is feasible. The
 feasibility of the
 proposal involves two
 elements: Whether the
 dam can be removed
 and whether the water
 and power supplies
 lost can be replaced.

Obviously, it is
 physically possible
 for the O'Shaughnessy
 Dam to be destroyed
 and then removed from
 Hetch Hetchy Valley.
 Sufficient explosives
 exist to destroy the
 dam. Techniques also
 exist to remove the
 material once the dam
 has been destroyed.
 The real questions
 are what will be done
 with the dam materi-

als once the dam is
 destroyed, and are
 environmental bene-
 fits attainable?

The physical di-
 mensions of the
 O'Shaughnessy Dam are
 impressive. The 312-
 foot dam rises 430
 feet above its bed-
 rock base. It is 308
 feet thick at its
 base and has a crest
 length of 900 feet.
 The dam was con-
 structed of 750,000
 cubic yards of con-
 crete and 700,000
 pounds of steel, and
 it impounds more than
 360,000 acre-feet of
 water.

Those opposed to
 Hodel's idea have two
 arguments based on
 the dam's removal.
 The first is that the
 dam's removal costs
 would be so great
 that any action other
 than leaving the dam
 in place would be
 ludicrous. The sec-
 ond is that disposal
 of the materials once
 the dam is removed is
 impossible. Neither
 of these arguments is
 persuasive.

The removal
 costs of the
 O'Shaughnessy Dam are
 unknown. Yet, no