FRIENDS OF THE RIVER

3336 BRADSHAW RD., SUITE 335, SACRAMENTO, CA 95827

PHONE: 916-442-3155

WWW.FRIENDSOFTHERIVER.ORG

Sites Reservoir is Not a Silver Bullet. Here's Why.

By Keiko Mertz – *Policy Director*
September 17, 2023

California is at yet another critical point in its struggle toward a sustainable water future, and yet we're still talking about the wrong solutions.

Sites Reservoir is the latest in a long line of proposed dams that promise to end our cycle of water insecurity. However, Sites will add very little to California's water portfolio, and its harm to the Sacramento River, Delta ecosystem, and communities that rely on them will be irreversible and ongoing.

The project currently awaits a water rights decision by the State Water Resources Control Board, which will come after a period of negotiations and a formal water rights hearing. We will either build one of the biggest boondoggles in California history or we will dodge this expensive bullet and move toward reasonable answers to solving our water crisis.

Many lamented during this unusually wet year that water was "wasted to sea" – and that more dams could have captured enough water to solve California's ongoing water uncertainty. However, water that flows to sea is essential for many uses, including salinity control for farming, wastewater treatment, endangered species support, and sediment transport to replenish beaches and marshes. The water that flows to sea, quite literally, works for us. If the Delta ceased to deposit water into the San Francisco Bay, ocean water would further flow into the Delta, making the Delta's water unusable for farming, and toxic for the wildlife that depends upon it.

SITES WILL ADD LITTLE TO WATER SUPPLY

If constructed, Sites Reservoir would only expand overall water availability in California by less than 1% in an average good year[1]. During long drought spells, it would sit useless and not improve the dire conditions in the Delta.

Proponents' own best estimates demonstrate that Sites would provide approximately 276,000 acre-feet annually[2] - enough water for just 3.7% of California's almonds[3] (which have more than doubled in acreage over the last 20 years), or just 4% of urban water use[4]. For such a small yield, beneficiaries would spend billions of taxpayer dollars, while a majority of project benefits are privatized.

We cannot continue to cling to this outdated way of thinking about water.

SITES IS BAD FOR THE ENVIRONMENT

Despite the empty promises that Sites will deliver environmental benefits, many conservation groups have united in opposition to Sites Reservoir for one simple reason: taking more water from rivers will damage aquatic ecosystems, and will not create environmental benefits.

The California Water Commission granted $875 million in Prop 1 (2014) funding to Sites Reservoir for "monetized public benefits." The supposed environmental benefits are:

(1) Water supply to refuges – which the government is already legally obligated to provide.
(2) Flows through the Yolo Bypass – with unsubstantiated claims of increasing the Delta smelt's food supply.

The Commission, however, denied funding for a host of other benefits for which proponents applied. In fact, the California Department of Fish and Wildlife critiqued many of these purported benefits, with a series of rebuttals of the purported benefits to salmonids. FOR Board Member Ashley Overhouse has poignantly stated, "It makes no sense to take water from one imperiled species, give it to another, and call it a benefit."

---

[1] *See* calculation A below.
[2] *See* Table 1 and Table 2 below.
[3] *See* calculation C below.
[4] *See* calculation D below.

A small number of conservation organization have supported Sites because it could hypothetically provide water for migratory birds which are suffering from the near-elimination of wetlands in the Central Valley. There is no doubt that the state must provide more resources to restore wetlands and incentivize rice farming, which is excellent substitute habitat for migratory waterfowl.

Unfortunately, Sites has no operational plan or other assurances to guarantee such benefits will materialize. The same state, federal, and local agencies responsible for the decline of freshwater ecosystems and species in California now ask the public to believe that one more dam will turn it all around. If anything, historical negligence by these agencies is a testament to the fact that a project approval on the basis of trust will surely fail the environment, marginalized communities, and Californians at large.

Other impacts from Sites would span from the reservoir location, to the Sacramento River, and through the Delta and Bay. These include (1) increased mercury levels in the Sacramento River and fish that inhabit it, (2) increased harmful algal blooms which have been documented to kill fish and marine mammals in massive die offs, and to have serious human health consequences, and (3) fragmented and destroyed wildlife habitat, wetlands, and riparian habitat in the project area and throughout the Sacramento River and Bay-Delta[5].

Sites Reservoir will also be a major greenhouse gas emitter. A recent analysis using the cutting-edge All-Res Modeling Tool has estimated that Sites would emit 362,000 metric tons of carbon dioxide equivalent (CO_2e) per year. That amount is equal to more than 80,000 gasoline-powered passenger vehicles driving each year. It is also more than 14 times greater than the EPA's greenhouse reporting threshold for some major emitters. Much of these emissions would be as methane, which is 25 times more potent than carbon dioxide. As California works furiously to achieve net zero emissions by 2045, this project directly competes against the state's ambitious climate goals.

Project supporters have gladly spun the narrative that Sites would simply skim water off the top during unusually wet years[6], however, this is patently untrue. With a maximum pumping capacity of 4,200 cubic feet per second and a 1.5 million acre-foot storage capacity, it would take nearly 6 months of pumping at full power to fill the

[5] *See* CSPA, FOR et al. Protest of the Applications and Petitions for Sites Reservoir Water Rights for further detail on these three impacts, and a host of other impacts that will be caused by Sites Reservoir.
[6] *See also* a quote from the linked source, "Sites Reservoir is an innovative 21st century water project: an off-stream regulating reservoir that can store water for the future by capturing it during high runoff periods, and then releasing water for various beneficial uses at a later time." [Emphasis added].

reservoir[7]. In some years, this could take 30% or more of the flows from the upper Sacramento River alone[8]. Further, the Sites Authority plans to pump even in years classified as Dry and Critically Dry[9] – when that water is needed most by ecosystems and disadvantaged communities.

SITES IS NOT AN EQUITABLE SOLUTION

The Sites project is deeply inequitable – both economically and sociologically.

The Sites project will create some of the most expensive water in the state, and will thus tend to push costs for water higher generally, making water less accessible to disadvantaged communities, and those facing water insecurity. Project benefits will be reserved for the small handful of Californians who can afford to pay for a relatively miniscule amount of uncertain, expensive, but potentially profitable water. Proponents claim that Sites is a "beneficiary pays" project. However, the project investors admit in their water rights application that they plan to scalp the water for profit during times of extreme need, to recuperate costs[10].

Sites harms those who rely on rivers and fish for their livelihoods, sustenance, or enjoyment. This includes tribal communities whose connection to these resources are also ancestral, cultural, and religious. Further, Sites represents the continuation of unjust water management in the state – a system that was specifically designed to exclude tribes and people of color. Not only have these groups not been made whole in a broad sense, but they have also not been adequately included in the development of this project.

ALTERNATIVES

Friends of the River is committed to creating a secure and sustainable water future in California. However, as Ron Stork, FOR's Senior Policy Advocate of 36 years, often

---

[7] See calculation E below.
[8] *See* Comments of the State Water Resources Control Board on the Draft RDEIR/SDEIS for the Sites Reservoir Project, Pg. 18, linked above.
[9] See Table 3 below.
[10] *See* Sites Water Rights Application, Appendix C to the January 6, 2023 Water Right Application Supplement (Supplement App. C), p. 2.

notes, "California can't dam its way to paradise anymore – all the juicy spots are taken, and additional dams yield marginal returns." He calls it *cruel arithmetic*.

FOR instead supports a suite of alternatives to dams — holistic reforms to individual, corporate, and agricultural water use, while incentivizing less water-intensive crops, improving water management and efficiency, and recycling the approximately 400 billion gallons of treated water discarded into the Pacific Ocean annually. FOR also supports groundwater recharge and demand management.

California has been locked in a century-long pattern. We use more water than we have, and the oft-proposed solutions sacrifice more of our natural habitat and waterways to quench an agricultural thirst that far outpaces capacity. At some point, we must accept that conservation is now cheaper and more equitable than more dams. Holistic approaches to California water management might not be as flashy as Sites Reservoir, but they are almost certainly less expensive, less harmful to imperiled species and ecosystems, and more equitable.

FOR TAKES ACTION

On August 31, Friends of the River and the California Sportfishing Protection Alliance, along with a coalition of environmental groups, submitted a formal protest against the Sites Reservoir water rights application. FOR will continue to build this coalition, and ramp up efforts for the water rights hearing. FOR will also continue to communicate the truth about this harmful project wherever possible, and to further develop strategies to stop this boondoggle.

Most water years of the future will not be as generous as the 2022-2023 water year. Failing to acknowledge that is a form of climate denial. California must realistically evaluate how much water will be available in a shifting climate, and allocate it in an equitable way, while preserving environmental and economic values for generations to come.

Californians need enduring solutions, not more empty dams.

Friends of the River Calculations

	Claim	Source and Calculations
A	"Would only expand water availability by less than 1% on average"	This value was found by taking the estimated average amount of Sites annual water diversions and dividing that number by the amount of developed/used water in California, annually. Sites annual diversions: The Sites Project Authority has conducted modeling for how much water would be diverted into Sites Reservoir annually (i.e. captured as water supply). Their preferred estimations range between 276,000 (Figure 1, bottom row), and 327,000 acre feet per year (Figure 2, second to last row). The Sites Authority stated that these two values highlighted here come from their preferred modeling scenarios. Water used in CA annually (42 million acre feet), United States Geological Survey: https://www.usgs.gov/news/state-news-release/california-water-use-estimates-2010-released 42,000,000/276,000 = 0.65% 42,000,000/327,000 = 0.78%
B	"Proponents own best estimates demonstrate…"	See Table 1 below for the source of the 276,000 acre-feet estimate.
C	"just 3.7% of CA almonds"	Taking the 276,000 estimate and dividing by the amount of acre-feet per acre required to grow almonds (up to 4.5 acre feet per acre per Pacific Institute: https://pacinst.org/wp-content/uploads/2015/04/CA-Ag-Water-Use.pdf). 276,000/4.5 = appx. 61,333 acres of almonds grown by this amount of water. Divide that by total acres of almonds grown (1,640,000 in 2021 per this USDA report: https://live-almonds-next.pantheonsite.io/sites/default/files/2022-04/2021_NASS_Acreage_Report.pdf). 61,333/1,640,000 = 3.7%

D	"…just 4% of urban water use"	Using CA Water Plan 2018 values from Table 1-1, average of annual urban water use 2011-2015 was 7.9 million acre-feet annually. Sites water (276,000) / urban water (7,900,000) = 3.4% ~~~~~ This LAT article reports state urban water use as 6.6 maf per year. 276,000/6,600,000 = 4.2%
E	"… it would take nearly 6 months of pumping at full power to fill the reservoir"	Maximum pumping capacity = 4,200 cubic feet per second (cfs). 4,200 cfs = 8,400 acre feet per day (a well-known conversion) 1,500,000 acre feet (total reservoir capacity)/8,400 = 178 days

Table 1.

The first four rows of this figure show water available for diversion into Sites (a Water Availability Analysis completed for the Sites water rights application) under different modeling scenarios. The last row estimates how much water Sites would divert under its preferred modeling scenario (as of Sept 2022). From a presentation given by Sites Authority Staff to FOR and other stakeholders on September 20, 2022.

Water Availability Analysis – Summary Results

Analysis	Average (AF)	Minimum (AF)	Maximum (AF)
Historical	862,000	3,000	3,950,000
CalSim II	1,174,000	15,000	4,622,000
Face Value	1,139,000	10,000	8,309,000
CalSim II with 2035 CT Climate Scenario	1,212,000	43,000	4,322,000
Sites Project Diversions	276,000 [a]	--	1,500,000 [b]

a. Based on CalSim II modeling completed for the Final EIR/EIS (in preparation), using Alternative 3 and assuming revised diversion criteria (10,700 cfs @ Wilkins Slough, Oct through June)
b. Maximum annual request in the Project's water right application.

Draft - Predecisional Working Document - For Discussion Purposes Only 20

Table 2.

The Sites Authority performed additional analysis of water availability per a request by State Water Resources Control Board February 4, 2023. The below table shows the results of that modeling effort. The second column shows average annual acre-feet diverted into Sites, showing a range of 57,000 to 330,000 acre-feet annually.

Sites Project Water Availability Analysis – Estimated Annual Diversions

Analysis	Average (AF)	Frequency	Minimum (AF)	Maximum (AF)	Report Location
Historical*	287,000	18/22 (~78%)	2,000	1,236,000	p. 153
CalSim II	276,000	73/82 (~88%)	7,000	1,055,000	p. 176
Face Value*	330,000	55/93 (~59%)	15,000	1,383,000	p. 196
CalSim II with 2035 CT Climate Scenario	303,000	73/82 (~88%)	2,000	967,000	p. 179
CalSim II with 2070 CT Climate Scenario	309,000	70/82 (~84%)	10,000	1,114,000	p. 182
CalSim II ROC on LTO Alternative 4*	327,000	51/82 (~61%)	10,000	1,763,000	p. 185
State Board WAA Tool*	57,000	27/101 (~27%)	4,000	565,000	App B; p. 15

*Estimates only consider diversion facility capacity and do not account for reservoir capacity or operations

Draft - Predecisional Working Document - For Discussion Purposes Only 1

Table 3.

Estimate of total diversions to Sites Reservoir across each water year type. Under all project alternatives, diversions are made in Dry and Critically Dry year types. From a presentation by Sites Project Authority staff on March 9, 2023.