

Sites Reservoir: New Development for Old Ideas

Introduction

The Sites Reservoir recently made headlines in California as they entered the last phase of environmental regulatory checks before building. The proposed site would be just northwest of Sacramento between the small towns of Maxell and Delevan. The reservoir would add an additional 1.5 million acres of much needed water reserve for the growing water demand of the whole state. However, there are many voicing concerns about the project such as impacts on the ecosystem and whether this is a solution to the problem or another bandage. The project would create a pipeline system that would cut through farmland and ranch land that is being used for agricultural purposes, the major factor of California's economy. California is in dire need of an upheaval of the water management systems that have been in use since the 1800's.¹ However, is building a new reservoir something that the state should be putting forward at this moment? With record low water levels, what is the point in having another site of dry lakebed with no water in it? How do we handle the drought right now and future droughts that will affect California for year to come? The answer is not quite so simple and of course comes with many projects working in tandem, one of which could be the Sites Reservoir.

Background

The history of the California water reservoir systems dates to the founding of the state with the French Lake Reservoir being completed in 1859.² There were many natural river systems and lakes already formed in California which have since been modified to deal with

¹ "List of Dams and Reservoirs in California." Wikipedia. Wikimedia Foundation, June 11, 2022. https://en.wikipedia.org/wiki/List_of_dams_and_reservoirs_in_California.

² California, State of. "History." Department of Water Resources. Accessed September 16, 2022. <https://water.ca.gov/Programs/State-Water-Project/SWP-Facilities/History>.

flooding, like along the American and Sacramento Rivers, most notably in the valley. Folsom Lake is one such major and local modification that created a water reserve for the state and served for mitigating flooding of the valley. The reason for the sudden increase of water in California was due to the massive development and migration to the state after World War II and the exponential growth of Southern California, specifically Los Angeles and San Diego. This growth in a water dependent area led to the need to build a massive network of river modifications and storage, along with transporting the large volume of water across the state. The result was a growth of different reservoirs being built in tandem with reinforcement of rivers to hold as much water as possible. This required not only inter-state work to be done but also development of the Colorado River system, which is just as vital to the California ecosystem today. The construction of new reservoirs was slowed due to concerns expressed about the environmental impacts of building massive dams in floodplains.³ There has been a renewed approach by the government to start funding again for large scale projects across the state. The cost-benefit analysis of the project is a case study of what are the possible paths in which California government and private developers must take in addressing the drought and climate change on a large scale.

Arguments For and Against the Sites Reservoir

The main argument in support of the Sites project is the increase of potential water supply for the state. The increase of 1.5 million acres of land would greatly support the

³ Person, Sarah Null, Jeffrey Mount, Brian Gray, Kristen Dybala, Gokce Sencan, Anna Sturrock, Barton “Buzz” Thompson, and Harrison “HB” Zeff. “Storing Water for the Environment.” Public Policy Institute of California. Public Policy Institute of California, August 26, 2022. <https://www.ppic.org/publication/storing-water-for-the-environment/>.

increasing population of California.⁴ The project also adds the dry year reserve that is close to the major reservoir that would serve the purpose of holding emergency water.⁵ This would only be used in extreme circumstances like the current drought that we are experiencing now. Sites' location, due to it being off stream, would draw from the Sacramento River but not in drought or emergency years.⁶ Another benefit of the Sites is the support of a coalition of organizations that want to reeducate the public on water use.⁷ The Sites reservoir project would not only be a storage shed but also help protect the vital water resources and ecosystems that are part of Northern California life.

The second argument for the Sites Reservoir is the protection of wildlife from climate change factors. One of the hallmarks of California is the diverse ecosystem that occupies the whole state and the many wildlife that call this place home. The Sites reservoir's dry year supply is not only an extreme use water supply but also a place for salmon hatcheries and places in which fish could survive in extreme dry years.⁸ This multiuse of the extreme reserve would give the state flexibility also to conduct studies and help support endangered species. In accordance with the theory of property law, the best and highest use of the land can be flexible in this project

⁴ "Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement." Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/revised-draft-environmental-impact-report-supplemental-draft-environmental-impact-statement/>.

⁵ "About Sites Reservoir." About Sites Reservoir - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/about-sites/>.

⁶ "Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement." Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/revised-draft-environmental-impact-report-supplemental-draft-environmental-impact-statement/>.

⁷ "Water for Dry Years." Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/>.

⁸ "About Sites Reservoir." About Sites Reservoir - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/about-sites/>.

for the allowance of many interests. The project would help be a habitation for wildlife and research in keeping the wildlife in California at healthy levels while dealing with climate change. The project proponents make the case that if California wants to continue the path of being the green leader of the country, then the best and highest uses of land should be in preservation of wildlife and ecosystems. In the plans provided, the paths taken in all the alternative plans make note the need to keep water in the reservoirs in case of the need to keep salmon and other fish from extinction.⁹ In the best practices it would allow for the potential of a model for other reservoirs to have multi use such as Folsom Lake that promotes recreation and wildlife. Along with the other potential uses is the use of the dam and lake face as a green energy capture resource for the state.

The last argument for the Site project is the multi-use purpose and flexibility of the overall project. The other use of the reservoir is not just storing the water but also the generation of energy in the dam system through new technology that would be used. The Sites project says the generation of 80 MW from the whole system and updates to existing reservoirs that are going to be used in tandem with Sites.¹⁰ The last major construction of a dam in California was in 2003 with the Olivenhain Reservoir in San Diego and the last energy dam in the state was built in 1979, New Melones Dam.¹¹ During this time significant progress has been made in the field of hydro-electronic systems and the effectiveness of energy storage.¹² Sites could be the project that

⁹ “Sites Reservoir Project Preliminary Project Description and Alternatives.” Accessed September 16, 2022. https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites_Preliminary-Project-Description_20210219.pdf.

¹⁰ “About Sites Reservoir.” About Sites Reservoir - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/about-sites/>.

¹¹ “List of Power Stations in California.” Wikipedia. Wikimedia Foundation, September 7, 2022. https://en.wikipedia.org/wiki/List_of_power_stations_in_California#Hydroelectric.

¹² California Energy Commission. “Hydroelectric Power.” California Energy Commission. California Energy Commission. Accessed September 16, 2022.

shows there is a dire need to update the other dams with the newer systems or any type of green energy systems with the legislature's intent and goal of reaching zero carbon energy by 2040.¹³ Not only is there the hydroelectric system, but other environmental groups have been researching the theory of using floating solar panels across reservoirs to decrease evaporation of the surface water and over canals that funnel the reservoirs.¹⁴ However, with all the potential positives there are also major costs that are being placed in good faith about what the potential impacts could be of such a massive project.

The strongest argument against the Sites Reservoir is that a system which has no source has dire effects on the environment. One question that may be in the forefront of one's mind when hearing of a new reservoir is, '*where does the water come from?*' Environmentalists point to the plans that place pipelines across land, which are already in use by farmers and ranchers, from the Sacramento River to the 1.5-million-acre reservoir.¹⁵ This would not just hurt the current flow of the entire Delta system but also be a danger in extreme drought years that still would have to pull from the river to source the reservoir. This problem is inherent in having a system that is off stream from a river because there would need to be resupplying from other

<https://www.energy.ca.gov/data-reports/california-power-generation-and-power-sources/hydroelectric-power#:~:text=The%20U.S.%20Bureau%20of%20Reclamation,in%20the%20eastern%20mountain%20ranges.>

¹³ California Energy Commission. "California Releases Report Charting Path to 100 Percent Clean Electricity." California Energy Commission. California Energy Commission. Accessed September 16, 2022. <https://www.energy.ca.gov/news/2021-03/california-releases-report-charting-path-100-percent-clean-electricity>.

¹⁴ Cannella, Greg. "California to Install Solar Panels over Canals to Fight Drought, a First in the U.S." CBS News. CBS Interactive, August 30, 2022. <https://www.cbsnews.com/news/california-solar-panels-canals-drought/>.

¹⁵ "About Sites Reservoir." About Sites Reservoir - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/about-sites/>.

sources than having a river flowing through the reservoir like Folsom Lake. In countering, the advocates of the project put forward that there is mostly rain capture after the fact once the whole Sites system is developed but that still does not stop the immediate impact. If the purpose of expanding water resources is the main goal then building a large reservoir in drought years may not be the best option when most of the other reservoirs are well below average water levels.¹⁶ For long-term water storage, yes, having greater storage is what should be looked at; but the current moment is a crisis point and could be a waste of money and resources that could be allocated elsewhere.

The second argument against the Sites Reservoir is the impact the project would have on other property water rights for the state. The Sites project's impact on water rights and supply for the state of California is of great concern for all parties. These water rights are based upon the current state of the Delta system and how much flow is allowed out of Oroville and the Colusa Basin Drainage system.¹⁷ The farmers and ranchers that receive groundwater protections on their lands that go back to the foundation of the state's water rights laws would be injured in the potential off-drainage of the Sacramento River.¹⁸ These areas would be impacted most notably and may seek litigation for such violation of rights that have yet to come to fruition. The farmers and ranchers are not yet looking at the potential harmful impacts or how a new reservoir would

¹⁶ "Sites Reservoir Project Preliminary Project Description and Alternatives." Accessed September 16, 2022. https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites_Preliminary-Project-Description_20210219.pdf.

¹⁷ "About Sites Reservoir." About Sites Reservoir - Sites Reservoir. Accessed September 16, 2022. <https://sitesproject.org/about-sites/>.

¹⁸ Person, Sarah Null, Jeffrey Mount, Brian Gray, Kristen Dybala, Gokce Sencan, Anna Sturrock, Barton "Buzz" Thompson, and Harrison "HB" Zeff. "Storing Water for the Environment." Public Policy Institute of California. Public Policy Institute of California, August 26, 2022. <https://www.ppic.org/publication/storing-water-for-the-environment/>.

impact their livelihood, but at the current state of what they are faced with. Most agricultural workers are already dealing with a reduction of crops from a drying river, and draining off more could hurt their water rights.¹⁹ Also, there would be impacts on cities that use the Sacramento River as their source of drinking water, such as Sacramento, which receives a majority of water from the river.²⁰ The impact on the greater Delta region in reduction of water from the rivers could result in migration of families that could not afford the potentially higher cost of water placed by utility companies. The water rights issue presents a difficult situation for potential litigants of people seeking the damages to their properties and livelihoods.

The final argument against the Sites project is that the reservoir does not protect the interest of the location and people that house and fund the project. The Sites project is not just a Northern California interest but also one that Southern California desperately needs in increasing water allocation. In some of the proposed plans the Sites reservoir would supply Southern California with some 70-80% of the water allocation.²¹ The Sites project displays that the reservoirs in Northern California do not serve the purpose of serving the locations in which the reservoir is housed. Now this is not the case with all the reservoirs but with this location it is serving the purpose of Southern California interests. There is agreement that there needs to be a redressing of the overall storage of California water from environmentalists, but there should also be a greater water reduction of where most of the water is going. Southern California's

¹⁹ Person, Alvar Escriva-Bou, Jeffrey Mount, and Jelena Jezdimirovic. "Dams in California." Public Policy Institute of California. Public Policy Institute of California, October 18, 2021. <https://www.ppic.org/publication/dams-in-california/>.

²⁰ "Water Quality - City of Sacramento." City of Sacramento word treatment. Accessed September 16, 2022. <https://www.cityofsacramento.org/Utilities/Water/Water-Quality/water-quality>.

²¹ "Sites Reservoir Project Preliminary Project Description and Alternatives." Accessed September 16, 2022. https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites_Preliminary-Project-Description_20210219.pdf.

water intake is part of the reason for the increasing number of reservoirs throughout the state yet building more has done little to alleviate the overall problem. Adding one more storage shed to house water does not fix the water being drained toward the south. So, what is the answer, if there is any, to the overall Sites reservoir project on what the public's main goal should be in either support or dissent of the project?

Is the Sites project worth the costs?

The answer of course with most things in California law and policy is complicated and multifaceted in ways that go beyond the scope of this paper. However, the potential benefits do bring in many issues that have yet to be addressed by the legislature in reconstruction of California water. Take that with the record heatwave of the last few weeks and water needed to fight the many fires in California it seems hopeless and an uphill battle. The Sites project has substantial backing in both municipalities and expert groups that believe this to be a good idea. From a legal perspective, this project has thought out many of the potential ramifications that a project of this scale could hold for the government. Sites provides some resolution but could take years to be fully operational. It is a step in the right direction for California to look toward solutions that are more future looking instead of a bandage for a problem. With the explicit design measures and to present various plans of operation that are flexible means future redressing of problems. If we are continuing to go as a state, there is going to need to be accommodations in supply for certain areas. Sites presents a flexible approach for the ramifications of historic water loss and climate change problems that future generations will be dealing with. As with most environmental problems and projects, there needs to be a tandem effort of many industries and peoples to work in the best interest of all. Sites provides a good

step toward a greener California both in energy production and the water resources. Sites provides the potential of what a new California water system can and should be.