State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Info: (916) 341-5300, FAX: (916) 341-5400
Web: http://www.waterboards.ca.gov/waterrights
Sites-WR-Application@Waterboards.ca.gov

PROTEST – (Applications & Petitions)

BASED ON ENVIRONMENTAL OR PUBLIC INTEREST CONSIDERATIONS
co
APPLICATION: A025517X01

PETITION FOR PARTIAL ASSIGNMENT OF
STATE-FILED APPLICATION A025517 TO APPLICATION A025517X01

PETITION FOR RELEASE FROM PRIORITY OF
STATE-FILED APPLICATIONS A025513, A022514, A022235, A023780, A023781, AND ANY UNASSIGNED PORTION OF STATE-FILED APPLICATION A025517 IN FAVOR OF APPLICATION A025517X01

We, Chris Shutes, Executive Director, California Sportfishing Protection Alliance (CSPA), 1608 Francisco St., Berkeley, CA 94703, blancapaloma@msn.com, (510) 421-2405; Keiko Mertz, Policy Director, Friends of the River (FOR), 3336 Bradshaw Rd., Ste 335, Sacramento, CA 95827, keiko@friendsoftheriver.org, (916) 442-3155; Chief Caleen Sisk, Winnemem Wintu Tribe, 4840 Bear Mountain Rd., Redding, CA 96003, caleenwintu@gmail.com, (530) 229-4096; Barbara Vlamis, Executive Director, AquAlliance, P.O. Box 4024, Chico, CA 95927, barbarav@aqualliance.net, (530) 895-9420; Carolee Krieger, Executive Director, California Water Impact Network (CWIN), 808 Romero Canyon Rd., Santa Barbara, CA 93108, caroleekrieger7@gmail.com, (805) 969-0824; Michael Jackson, counsel to CSPA, CWIN and AquAlliance, P.O. Box 207, 20 Crescent St., Quincy, CA 95971, mjatty@sbcglobal.net, (530) 283-0712; Steve Evans, Rivers Director, CalWild, 4920 Flora Vista Lane, Sacramento, CA 95822, sevans@calwild.org, (916) 708-3155; Lowell Ashbaugh, Conservation Chair, Fly Fishers of Davis, 677 Equador Place, Davis, CA 95616, ashbaugh.lowell@gmail.com, (530) 758-6722; James Pachl, Friends of the Swainson's Hawk, 8867 Bluff Lane, Fair Oaks, CA 95628, jamesppachl@gmail.com, (916) 844-7515; Mark Rockwell, President, Northern California Council of Fly Fishers International, 5033 Yaple Avenue, Santa Barbara, CA 93111, mrockwell1945@gmail.com, (530) 559-5759; Barbara Barrigan-Parrilla, Executive Director, Restore the Delta, 2616 Pacific Ave. #4296, Stockton, CA 95204, barbara@restorethedelta.org, (209) 479-2053; Regina Chichizola, Executive Director, Save California Salmon, P.O. Box 142, Orleans, CA 95556, regina@californiasalmon.org, (541) 951-0126; Kasil Willie, Staff Attorney, Save California Salmon, 1418 20th St., Ste. 100, Sacramento, CA 95811, kasil@californiasalmon.org, (415) 300-7453; Erin Woolley, Senior Policy Strategist, Sierra Club California, 909 12th St. #202, Sacramento, CA 95814, erin.woolley@sierraclub.org,

(916) 403-3744; and Konrad Fisher, Director, Water Climate Trust, P.O Box 990111, Redding, CA 96099; info@waterclimate.org, (415) 617-9784

(Protestants)

have read carefully the State Water Resources Control Board's (State Water Board) notice regarding Application A025517X01; the Petition for Partial Assignment of State-Filed Application A025517 to Application A025517x01; and the Petition for Release from Priority of State-Filed Applications A025513, A022514, A022235, A023780, A023781, and Any Unassigned Portion of State-Filed Application A025517 in Favor of Application A025517x01 of the Sites Project Authority.

We protest this application and these petitions because:

1) They would have adverse environmental impacts.
2) They would not best conserve the public trust.
3) They would not best conserve the public interest.
4) They would be in conflict with a general or coordinated plan or with water quality objectives established pursuant to law. (Wat. Code, § 10504.)
5) They are contrary to law, including, but not limited to, Water Code Sections 10505 and 10505.5.

We state the facts that support our allegations, our reasons for the protest, and our terms for withdrawing the protest, in the attached document entitled "Protest of the California Sportfishing Protection Alliance, Friends of the River, et al. of the Application and Petitions of Sites Project Authority Relative to Sites Reservoir."

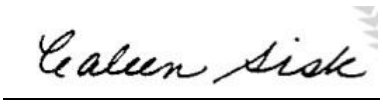
A true copy of this protest has been served upon the applicant and petitioner by e-mail at aforsythe@sitesproject.org.

Date: August 31, 2023

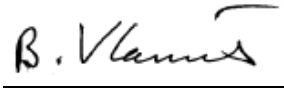
Chris Shutes, Executive Director
California Sportfishing Protection Alliance

Keiko Mertz, Policy Director
Friends of the River

Chief Caleen Sisk
Winnemem Wintu Tribe

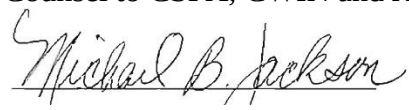


Barbara Vlamis, Executive Director
AquAlliance

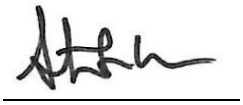


Carolee Krieger, Executive Director
California Water Impact Network

Michael Jackson
Counsel to CSPA, CWIN and AquAlliance



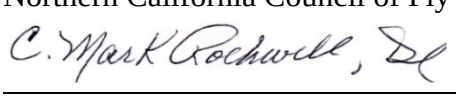
Steve Evans, Rivers Director
CalWild



Lowell Ashbaugh, Conservation Chair
Fly Fishers of Davis

James Pachl
Friends of the Swainson's Hawk

Mark Rockwell, President
Northern California Council of Fly Fishers International



Barbara Barrigan-Parrilla, Executive Director
Restore the Delta

Regina Chichizola, Executive Director
Save California Salmon

Kasil Willie, Staff Attorney
Save California Salmon

Erin Woolley, Senior Policy Strategist
Sierra Club California

Konrad Fisher, Director
Water Climate Trust

Attachment:

Protest of the California Sportfishing Protection Alliance, Friends of the River, et al. of the Application and Petitions of Sites Project Authority Relative to Sites Reservoir

Protest of the California Sportfishing Protection Alliance, Friends of the River, et al. of the Application and Petitions of Sites Project Authority Relative to Sites Reservoir

The California Sportfishing Protection Alliance, Friends of the River, the Winnemem Wintu Tribe, AquAlliance, California Water Impact Network, CalWild, Fly Fishers of Davis, Friends of the Swainson's Hawk, Northern California Council of Fly Fishers International, Restore the Delta, Save California Salmon, Sierra Club California, and Water Climate Trust protest the water rights application and petitions of the Sites Project Authority relative to the proposed Sites Reservoir.

We protest this application and these petitions because:

1) They would have adverse environmental impacts.
2) They would not best conserve the public trust.
3) They would not best conserve the public interest.
4) They would be in conflict with a general or coordinated plan or with water quality objectives established pursuant to law. (Water Code Section 10504.)
5) They are contrary to law, including, but not limited to, Water Code Sections 10505 and 10505.5.

This structure of this protest generally follows the sequence of the points stated above.

I. Introduction

The Sites Reservoir project is founded on the dual deception that a massive new diversion from the Bay-Delta watershed will improve water supply reliability and improve environmental protection. It is doubly wrong.

Fish and rivers throughout the Central Valley are hemorrhaging. The state and federal water projects,[1] their agencies,[2] and their contractors have led these fish to the brink of extinction and these rivers to degradation and loss of basic function. Now, changing their hats to appear as partisans of local solutions in the Sacramento Valley, these agencies and their contractors ask for more water and more public money, and propose to control 90% of the water in a shiny new project, but with no new responsibilities to protect the public resources they have so masterfully decimated.

The Sites project lives in the faded dream of the mid-twentieth century, whose central tenet was that when water supply is short, the solution is to pour more concrete and divert more water. It is no wonder that the Sites water rights application claims it is true to, and seeks to implement, a project that was first put on the books in 1977. That 1977 "state filed application" for water, in turn, is grounded in a view of water development that was passed into law in 1927.

The Sites project is deeply inequitable. It harms all those who rely on rivers and fish for their livelihoods and sustenance, as well as for their enjoyment. This includes tribal

[1] State Water Project (SWP) and Central Valley Project (CVP).
[2] California Department of Water Resources (DWR) and Bureau of Reclamation (Reclamation).

communities whose connection to rivers, fish, and associated environments, are, in addition, cultural and religious. The Sites project will create some of the most expensive water in the state, affordable to only a few. It will thus tend to push costs for water higher generally, making water less accessible to disadvantaged communities.

Water is the lifeblood of California's rivers and fisheries. The Sites project is consistent with, and founded on, a coordinated plan for the state's water that systemically bleeds rivers, fisheries, and communities dry. There will be no water supply reliability in the Central Valley until demand for water is brought into line with what Central Valley hydrology can reliably provide. There will be no humane recognition of tribal sovereignty or the public trust until this paradigm shifts.

The proponents of Sites Reservoir won't produce a plan for operating their 1.5 million acre-foot reservoir until after it is approved. But they ask the people of California to trust them. They tell us it will give them the resources to protect fish this time around. Throughout California's history, reservoir backers have promised the world every time a new dam is built, and they have always failed to deliver. The overall result of the 1400 dams in California has been salmon and other fish species declining towards extinction, the loss of over 90% of California's wetlands, degraded water quality, and expanding toxic algae blooms in the Bay and Delta. Sites would not be the first dam to over-promise and under-deliver.

Past practice is the best indicator of future behavior. The state and federal projects, and their regulators at the State Water Board and the fish agencies, have the ability, the authority, and indeed the obligation to manage limited water resources to protect fish and rivers today. They have done the opposite. They systematically give away too much water. During dry year sequences, the projects routinely come crying to the regulators for "temporary" changes to already inadequate fisheries protections, and the regulators routinely oblige, without requiring accountability for how the latest predictable "emergency" came about.

The Sites project promises so many benefits, but what solid benefits are there really? Water for wildlife refuges that the state and federal projects should already be delivering to make up for the destruction of enormous amounts of Central Valley habitat. A pittance of water for Delta smelt in an experimental project whose effectiveness is based on a prayer.

And then there is process. So much process. The proponents of Sites, to the degree they are not already participants in the management committees that have run fish into the grave, will join the resource agencies and the water users already in the room, and talk, talk, talk.

The history of the state and federal water projects and their contractors is that they fight like crazy to make constraints on water deliveries as weak as possible. Once established, the state and federal projects and their contractors painstakingly game those constraints to maximize long-term water deliveries. The idea that voluntary consultation without strong regulation is enough to restore the state's public trust fishery and river resources utterly ignores the dismal outcome of past consultation with inadequate rules and enforcement.

The Sites Application supports itself with talking points on how the state will run out of water under conditions of climate change. It is a new tambourine banging out the same old tune. This protest is founded on the principle that if the State of California does not set limits on water use, and instead allows the state and federal projects to keep taking, taking, taking, the state is going to run out of fish and living rivers.

The State Water Board should deny this Application and accompanying Petitions.

II. The Construction and Operation of Sites Reservoir Would Have Adverse Environmental Impacts

A. Sites Reservoir Will Have Adverse Environmental Impacts in the Project Area.

1. Sites Reservoir Will Have Adverse Water Quality Impacts in the Project Area.

a. Concentrations of Metals in Sites Reservoir Will Exceed Standards and May Create Harm to Fish and Wildlife and to Public Health.

Constituent metals will enter the Sites Reservoir through a variety of sources: metal concentrations found in the Sacramento River water that is diverted into the reservoir, existing soils in the inundation area, and atmospheric deposition.

DWR's water quality monitoring station on the Sacramento River downstream of the Red Bluff Diversion Dam provides information on the water quality of water that would be diverted to the proposed project through the Tehama-Colusa Canal.

Jerry Boles, former DWR Chief of Water Quality for the Northern District, compiled data from the DWR Water Data Library (WDL), in support of his 2017 comments on the Sites DEIR/DEIS. He concluded: "Aluminum, arsenic, cadmium, chromium, iron, lead, manganese, and mercury in water samples from the Sacramento River below the Red Bluff Diversion Dam exceed various criteria and standards established to protect beneficial uses, including drinking water, public health, taste and odor for agriculture, and freshwater organisms, which includes fish. Maximum concentrations of some of these metals are many times higher than the corresponding criteria or standard."[3]

More specifically, Mr. Boles found:

- **Aluminum** exceeds the Basin Plan Primary Maximum Contaminant Level (MCL) for drinking water by one and one half times. the secondary drinking

[3] Jerry Boles, Comments on the Draft EIR/EIS for the Sites Reservoir Project: Chapter 7 Surface Water Quality, p. 3. Available at: https://www.friendsoftheriver.org/wp-content/uploads/2019/09/Boles-DEIR-comments.pdf. Attached hereto as Exhibit A.

[4] *Id.*, pp. 3-4.

water standard in the Basin Plan by seven times, and the USEPA MCL by 30 times.

- The minimum concentration of **arsenic** reported in WDL exceeds by more than 10 times nearly all the criteria and standards for protection of human health.
- The least reported concentration of **cadmium** from river water samples exceeds by five times the incremental cancer risk for drinking water.
- The least concentration of **chromium** reported in WDL exceeds the California Public Health Goal by 16 times and incremental cancer risk for drinking water by five times.
- The maximum concentration of **iron** that was reported in WDL exceeds the secondary drinking water maximum concentration level in the Basin Plan, as well as National Recommended Water Quality Criteria for taste and odor or welfare by nearly three times.
- The maximum concentration of **lead** that was reported exceeds the California Public Health Goal and California Proposition 65 maximum allowable dose level for reproductive toxicity by over four times.
- The maximum reported concentration of **manganese** exceeds the National Recommended Water Quality Criteria for taste and odor or welfare by one and a half times.
- The maximum concentration reported for **mercury** exceeds the National Recommended Water Quality Criteria for Freshwater Aquatic Life Continuous Concentration by nearly four times, and the Freshwater Aquatic Life Maximum Concentration by two times.

Mr. Boles also noted: "An additional concern with these metals is that some metals are taken up by crops (such as arsenic by rice), making the crops potentially unsuitable for consumption. Plant uptake of metals in the water supply not only affect crops grown for human consumption, but also plants grown for support of wildlife, such as in refuges."[4]

Once the water that contains constituent metals is diverted into the reservoir, evapoconcentration, in combination with "multiple years of reservoir draining," could increase constituent concentrations in Sites Reservoir by up to 48 percent.[5] Water quality declines over time when the water diverted to Sites is contaminated with metals, the soils in the reservoir contribute more salt/metal into the reservoir, and the impounded water is exposed to heat and wind, causing evaporation. Water released from Sites Reservoir to the Sacramento River is thus likely to contribute higher concentrations of constituents such as salts and metals than the water that was diverted to Sites from the Sacramento River.[6]

Any permit issued for Sites Reservoir should include a permit term that establishes a program to continuously monitor and report the metal constituents present in inflows to the reservoir, in the reservoir itself, and in outflows from the reservoir, to avoid the discharge of elevated levels of metals into the Sacramento River.

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[4] *Id.*, pp. 3-4.
[5] Sites Reservoir Project, Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement for the Sites Reservoir Project (RDEIR/SDEIS) (November 2021), p. 6-32.
[6] *Id.*

b. Sites Reservoir Will Create an Environment that Methylates Mercury, Resulting in Contamination of Water, Soils, and Fish and Wildlife.

Methylmercury is an organic form of mercury created by anaerobic bacteria, with increased toxicity and ability to bioaccumulate in fish and other animal and plant life. Thermal stratification of Sites Reservoir from late spring through early fall would affect in-reservoir mercury methylation. Due to thermal stratification, oxygen in the hypolimnion would become depleted, which would in turn stimulate mercury methylation by bacteria. Reservoir fluctuations would also contribute to conditions favorable to mercury methylation.[7]

In his 2021 comments on the RDEIR/SDEIS, Mr. Boles discussed the significance of mercury concentrations, stating:

> Since mercury concentrations of up to only 0.52 ng/L in Lake Oroville have been sufficient to cause numeric criterion and objectives to be exceeded in this reservoir, concentrations of mercury as high as 14.4 ng/L in water diverted to the proposed reservoir from the Sacramento River at Red Bluff will undoubtedly cause highly significant impacts and substantial adverse effects in the proposed reservoir and in downstream releases. The data from Lake Oroville (which is over 50 years old) shows that even if the expected initially high mercury concentrations in the reservoir decline over time, the concentrations of mercury present in water that would be diverted to the reservoir from the Sacramento River at Red Bluff and especially at Hamilton City are sufficiently high to cause fish tissue methylmercury concentrations to exceed criterion for the protection of human health and wildlife, not just for 10 to 35 years, but for the life of the reservoir project.[8]

The 2021 RDEIR/SDEIS states: "In summary, depending on the methylmercury concentrations in Sites Reservoir releases and the water year type, operation of Sites Reservoir may result in substantial degradation of water quality in the Delta with respect to methylmercury bioaccumulation in Delta fish".[9]

Mercury that is methylated in Sites Reservoir will affect insects, birds, and terrestrial fauna, in addition to fish. It will bioaccumulate in aquatic insects consumed by birds and other wildlife. It will also accumulate in the soils at the changing edges of the reservoirs, where birds, butterflies and other fauna tend to congregate to drink and eat. Such accumulation will move up the food web to predators of those fauna that directly ingest methylmercury.

The water rights Application states: "The Authority will monitor methylmercury concentrations and implement reduction actions as part of Project construction and operation

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[7] In general, *see* State Water Board (2013), Statewide Mercury Control Program for Reservoirs. Available at: Statewide Mercury Control Program for Reservoirs.

[8] Jerry Boles, Comments on the RDEIR/SDEIS for the Sites Reservoir Project, p. 1. Available at: https://sitesproject.org/wp-content/uploads/2023/06/SRP_RSD_0019_Boles.pdf. Attached hereto as Exhibit B.

[9] RDEIR/SDEIS p. 6-81.

with the implementation of Mitigation Measure WQ-1.1: Methylmercury Management."[10] Proposed mitigation measures include removing vegetation prior to filling the reservoir, not stocking fish for 10 years, and monitoring fish tissue methylmercury once the reservoir is stocked.

In addition to these mitigation actions, a permit term should prohibit reservoir releases to the Sacramento River when the discharging water has a higher mercury concentration than the Sacramento River at the point of discharge. An additional permit term should limit the degree of reservoir fluctuation in any given year based on a schedule derived from a storage-stage curve for the reservoir.

2. The Sites Reservoir Project Will Increase Formation of Harmful Algal Blooms (HABs) in the Reservoir and in the Sacramento River.

As an offstream reservoir with relatively long residence time for stored water, high summer ambient temperatures, and high May-October water temperatures, Sites Reservoir will be a likely vector for harmful algal blooms (HABs). Release of water from Sites during such blooms, or simply of water that contains the organisms that create such blooms, represents a threat to the Sacramento River and the Delta, and to associated ecosystems. In addition, reduction of flow into the Delta due to Sites diversions may create conditions downstream of the points of diversion that increase the likelihood of HABs formation, even in the absence of releases from Sites Reservoir.

The cyanotoxins that form HABs threaten recreational activities, tribal beneficial uses, drinking water supplies, fisheries and wildlife, and crop health. Along the Sacramento River and in the Delta, these cyanotoxins pose a public health risk.

HABs thrive in waters with high nutrient loads (Nitrogen and Phosphorous), high water temperatures, light availability, and stagnant water from a lack of freshwater flow. Climate change enhances these factors to suit HABs formations throughout the San Francisco Bay-Delta Estuary and its tributaries annually.[11]

Diversions to Sites Reservoir will diminish flow in the Sacramento River and the north Delta, increasing the areas and the extent of relative stagnation, and increasing residence time of nutrients that lead to the formation of HABs.

The State Water Resources Control Board developed the FHAB Partner Monitoring Strategy to help monitor HABs throughout California. In general, the Sacramento River which is prone to low flow in drier years, is under-monitored for cyanotoxins from HABs.[12] More specifically, there is at present no monitoring done near Colusa in the HABs Report Map.[13]

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[10] Sites Water Rights Application, Request for Release from Priority, p. 7 of 11.
[11] Kudela, R. M, Howard, M. D, Monismith, S., & Paerl, H. W. (2023). Status, Trends, and Drivers of Harmful Algal Blooms Along the Freshwater-to-Marine Gradient in the San Francisco Bay–Delta System. *San Francisco Estuary and Watershed Science*, 20(4). Retrieved from https://escholarship.org/uc/item/1dz769db.
[12] Sacramento Environmental Commission. (2017). Cyanobacteria in Sacramento region waterways. In *Sacramento County*. https://emd.saccounty.gov/SEC/Documents/Final%20Cyanobacteria%20Report.pdf
[13] *See* https://mywaterquality.ca.gov/habs/where/freshwater_events.html.

Funding for the FHAB Partner Monitoring Strategy has been minimal. Filling in the data gaps near Colusa with an actual monitoring program is necessary to support the claim there will be no HABs impacts from the operation of Sites Reservoir, and is needed to establish a baseline for permitting approval of the project. One of the goals of the FHAB Partner Monitoring Strategy is "integrating HAB monitoring elements into California State Water Board programs, permits, and policies,"[14] and to date this has not been completed for the area around the proposed Sites intakes and outfall.

Reduced downstream flows from water diversions along the stem of the Sacramento River could lead to endangering the Tribal beneficial uses of the waterways for the Shingle Springs Band of Miwok Indians at the confluence of the Sacramento River and the Feather River. Zach Gigone, the environmental scientist for the Shingle Springs Band, has reported that members of the Tribe have seen HABs in recent drought years, but not in wet water year 2023.

In the Sites RDEIR/SDEIS, the model simulation of Delta inflow and outflow under Sites project alternatives shows incremental change from the No Action Alternative. However, CALSIM modeling does not attempt to model water operations in extreme drought conditions, particularly when Temporary Urgency Change Orders are in effect for Delta operations. It also does not capture the hydrological impacts of aridification, changes in soil conditions, and increased evaporation resulting from extreme heat.

The RDEIR/SDEIS explains why the formation of HABs in Sites Reservoir will be highly likely:

> Operating Sites Reservoir would result in reservoir drawdown, reduced storage volume, and higher water temperatures from late spring through fall, particularly in Dry and Critically Water Years. This would create favorable conditions for the initiation of HABs, and growth of algae and invasive aquatic vegetation. Because nutrients would be available in non-limiting concentrations in the reservoir, once HABs develop, the nutrient concentrations would be expected to be sufficient to sustain blooms as long as reservoir water temperature remained relatively warm (approximately 66°F minimum). ... Modeled temperatures would approach or exceed 66°F from May through September.[15]

The RDEIR/SDEIS proposes the following mitigation measure for HABs:

> "[W]ater quality management in Sites Reservoir as it relates to HABs would include implementation of a water quality monitoring program and a HABs action plan to minimize the potential for adverse effects on beneficial uses of water in Sites Reservoir and downstream (Section 2D.3). If cyanobacteria and cyanotoxins are confirmed near the I/O tower at a level at or exceeding the "Caution" action trigger level, releases could be made from lower in the water column (e.g., through the low-level intake) to reduce the potential for higher concentrations of cyanobacteria and cyanotoxins to be released

[14] Kudela, R. M, Howard, M. D, Monismith, S., & Paerl, H. W. (2023), *op. cit*.
[15] RDEIR/SDEIS p. 6-88.

downstream, and this action would be informed by water quality monitoring for cyanobacteria and cyanotoxins (Section 2D.3).[16]

A HABs monitoring program is necessary. However, the proposed withdrawal of water from deeper in the reservoir when a bloom is occurring is not certain to protect receiving waters from the effects of HABs. A permit condition should require development of a HABs monitoring program in Sites Reservoir and downstream of its discharge to the Sacramento River. The program should be developed jointly with CDFW and staff from the State Water Board. It should develop requirements that prohibit discharge of water from Sites to the Sacramento River that increases the concentration in the river of the cell counts of HAB-forming organisms are greater than those in the receiving water.

3. The Sites Reservoir Project May Release over 360,000 Metric Tons of CO_2e Annually, Equivalent to 80,653 Gas-Powered Cars Each Year.

Sites Reservoir will exacerbate climate change by emitting high levels of greenhouse gasses throughout the project's lifespan. A recent study has revealed that Sites would emit over 36 million tons of carbon dioxide equivalent (CO_2e) over the next 100 years.[17] This amounts to 360,000 tons (or 80,653 gas-powered cars, or 405 million pounds of coal burned) every year for 100 years. This analysis was completed using the cutting-edge All-Res[18] modeling tool, which is specifically designed to estimate emissions from reservoirs, and includes additional emissions pathways not captured by other tools or frameworks. For context, the U.S. EPA and the California Air Resources Board both require some major emitters to report emissions that exceed 25,000 tons of CO_2e per year. Emissions from Sites could exceed that threshold by 14 times.

California is already on the front lines of climate change impacts, with an increase in extreme heat, drought, wildfires, and sea level rise. Climate change has serious financial costs for Californians; the 2018 wildfires alone cost approximately $148.5 billion,[19] and estimates of cost for sea level rise in just the San Francisco Bay area range from $45-100 billion by 2100.[20] Social costs include loss of and increased cost of housing, increased displacement and migration, increased cost of resources, increased healthcare costs, and impacts to mental health and food security. For these and many other reasons, California leads the world in ambitious climate policy, and recent legislation establishes a legally binding goal for statewide carbon neutrality by 2045.[21]

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[16] RDEIR/SDEIS p. 6-89.
[17] "Estimate of Greenhouse Gas Emissions for the Proposed Sites Reservoir Project using the All-Res Modeling Tool," Tell the Dam Truth, Friends of the River, Patagonia, 2023. Attached hereto as Exhibit C. Link: https://www.friendsoftheriver.org/wp-content/uploads/2023/08/Sites-Reservoir-Project-Emissions-Report.pdf
[18] "All-Res Greenhouse Gas Tool," Tell the Dam Truth. Link: https://tellthedamtruth.com/all-reservoir-greenhouse-gas-model/
[19] Wang, D., Guan, D., Zhu, S. *et al.* Economic footprint of California wildfires in 2018. *Nat Sustain* **4**, 252–260 (2021). https://doi.org/10.1038/s41893-020-00646-7
[20] San Francisco Baykeeper "The Economic Costs of Sea Level Rise in the Bay Area" https://baykeeper.org/shoreview/economic-loss.html#:~:text=Across%20the%20Bay%20Area%2C%20the,entire%20regions%20may%20be%20abandoned.
[21] The California Climate Crisis Act, California Assembly Bill 1279 (2021-2022), Chapter 337, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1279

Given its potential emissions, Sites Reservoir is contrary to law, is a step backward for climate policy, and does not pass the test for 21st century water management. Emissions from this project will harm Californians and the environment, and set the state back on legally binding climate goals.

Storage and hydropower reservoirs are a globally recognized source of anthropogenic greenhouse gasses, particularly methane, which is 25 times more potent than carbon dioxide (CO_2). The latest science shows that reservoirs significantly contribute to GHG emissions.[22] One study suggests that more methane (CH_4) bubbles come from storage reservoirs than was previously known through the processes of degassing and ebullition.[23] High methane emissions are released from reservoirs due to rapid depressurization when water moves from the depths of a reservoir, through a turbine, to the receiving waterway downstream.

Methane emissions from reservoirs are further documented by a 2017 study that states: "[W]ater-level drawdowns [of reservoirs] can stimulate ebullitive CH_4 flux in reservoirs…, thereby establishing a connection between water-level management and CH_4 emissions."[24] Additionally, it is well known within the scientific community that methane releases are a significant concern related to greenhouse gasses and accounts for about 20 percent of global emissions.[25] The U.S. Environmental Protection Agency (EPA) has taken interest and is currently researching reservoir emissions.[26]

A recent document published by the Sites Project Authority admits that the Authority's own greenhouse gas estimates for the project do not account for facility decommissioning, decay of organic matter on exposed banks, land use changes away from the reservoir, loss of sequestration, ecosystem carbon loss from dewatering of wetlands, riparian areas or mangroves, or emissions from decaying riparian vegetation due to fluctuating river levels.[27] These are critical carbon footprint metrics necessary to fully appraise potential greenhouse gas emissions from the Project. In this same document,[28] as well as in the environmental documents,[29] the Authority makes vague claims that the project will achieve net zero emissions through a plan to be developed in the future, which will include the purchase of carbon credits. Unfortunately, carbon credits are a controversial and unreliable method to reduce emissions. A growing body of

[22] John A. Harrison et al., "Year-2020 Global Distribution and Pathways of Reservoir Methane and Carbon Dioxide Emissions According to the Greenhouse Gas from Reservoirs (G-Res) Model," *Global Biogeochemical Cycles* no. 6, no. e2020GB006888 (2021)
[23] *Id.*
[24] Jake J Beaulieu et al., "Effects of an Experimental Water-Level Drawdown on Methane Emissions from a Eutrophic Reservoir," *Ecosystems (New York, N.Y.)* 21, no. 4 (2018): 657–74. Available at: , https://doi.org/10.1007/s10021-017-0176-2..
[25] EPA, "Importance of Methane," 2021, https://www.epa.gov/gmi/importance-methane.
[26] Research on Emissions from U.S. Reservoirs, U.S. EPA, August 9, 2023, webpage. Link: https://www.epa.gov/air-research/research-emissions-us-reservoirs
[27] "Sites Reservoir Frequently Asked Questions: Sites Reservoir Greenhouse Gas Emissions Evaluation," Sites Project Authority, August 2023. Attached hereto as Exhibit D.
[28] *Id.*
[29] RDEIR/SDEIS Chapter 21. Greenhouse Gas Emissions. Pg. 21-16.

scientific evidence suggests that many credits have no environmental worth and do little to mitigate emissions, with some even exacerbating warming.[30]

Proponents claim that greenhouse gas emissions from Sites Reservoir will be fully mitigated; however, this claim has three fatal flaws. First, proponents have not used the best available science and tools to estimate reservoir emissions,[31] and thus have not established a reasonable baseline for mitigation. Proponents cannot achieve their stated goal of net zero project emissions without, in fact, having an accurate accounting of those emissions. Second, proponents' plan to make a plan is not an acceptable mitigation and fails to recognize the gravity of climate change impacts in California. Climate change is happening *now*, and a to-be-developed greenhouse gas reduction plan does not provide the necessary assurances to the public that these impacts will be mitigated. Third, proponents propose mitigation measures that are not supported by evidence. Proponents have stated their intent to purchase carbon credits where reductions and Best Management Practices are unable to reduce emissions to net zero. As discussed above, carbon credits are not a scientifically supported method to reduce emissions. Further, proponents speculate that "because electricity providers in the state will be complying with the renewable energy goals under SB 100…. the electricity purchased for the Project's needs would become progressively lower in carbon intensity."[32] Speculation is not an acceptable method to reduce the impact of greenhouse gasses.

If the State Water Board approves a water rights permit for the Sites Project, it should require permit terms to update the accounting of the proposed reservoir's greenhouse gas emissions using the best available science and tools, and to require concrete mitigation measures that achieve net zero emissions consistent with the updated accounting, without relying on the purchase of carbon credits or offsets.

4. The Sites Reservoir Project Will Have Adverse Effects on Wetlands in the Project Area.

According to project proponents, Sites Reservoir would inundate and destroy terrestrial and aquatic habitat covering approximately 13,200 acres in Antelope Valley, devastating the habitat of numerous terrestrial and semi-terrestrial species.[33] More specifically, "construction of

[30] Thales A. P. West et al., Action needed to make carbon offsets from forest conservation work for climate change mitigation. *Science* 381,873-877(2023). DOI:10.1126/science.ade3535. Link: https://www.science.org/doi/10.1126/science.ade3535

[31] In Exhibit D, "Sites Reservoir Frequently Asked Questions," the Sites Authority states that it used "'the global warming potential' approach that is endorsed by the Intergovernmental Panel on Climate Change" to estimate emissions. However, in the same document the Authority notes numerous scientifically documented emissions pathways that it failed to include in its analysis. Further, the Authority failed to use the G-res tool (a.k.a. "the carbon calculator for reservoirs), a widely available, peer reviewed, and scientifically validated GHG emissions estimation tool designed specifically for reservoir emissions. (More info on the G-res tool here: https://g-res.hydropower.org/. Examples of scientific validation of the G-res tool here: https://www.mdpi.com/2071-1050/13/21/11621, https://www.sciencedirect.com/science/article/pii/S1364815221001602, https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2020GB006888).

[32] RDEIR/SDEIS Chapter 21. Greenhouse Gas Emissions. p. 21-13.

[33] RDEIR/SDEIS, p. ES-11. It is also important to note that this number is just an estimate and may be more because the RDEIR/SDEIS fails to accurately describe the baseline condition of the project site and the presence of special status species, undermining the accuracy of the impact analyses.

the reservoir and appurtenant facilities under Alternatives 1 or 3 would result in permanent impacts to approximately 425 acres of wetlands and 234 acres of streams, with impacts under Alternative 2 slightly lower due to a smaller reservoir footprint."[34]

Less than 10 percent of California's native wetlands remain after they were drained and diked for agricultural uses.[35] California's wetlands support millions of migrating birds each year, in addition to many other environmental and flood management benefits.[36] California cannot afford to further reduce its wetland footprint.

The Project's transmission lines will also specifically impact vernal pools, which are of critical importance to many species, including amphibians, for breeding habitat.[37] For electrical transmission lines, the RDEIR/SDEIS indicates that "[o]nly one of the two north-south transmission line alignments described in Chapter 2 would be constructed, and specific locations for the transmission line towers are currently unknown."[38] Transmission lines can have serious impacts to birds and the towers can destroy vernal pool wetlands and other important landscape features.[39]

5. The Sites Reservoir Project Will Have Adverse Effects on Terrestrial Fauna in the Project Area.

There are 33 special-status wildlife species likely to occur in the study area for the project.[40] These species will be impacted due to loss in habitat and continuous project operations. For example, the threatened giant garter snake, endemic to the area, will be negatively impacted from both construction activities and warm water deliveries through canals to the Sacramento Valley wildlife refuges and to the private rice-producing lands that surround the refuges. Construction activities are planned during the giant garter snake's active time period of May 1 and October 1, jeopardizing breeding and existing populations that are present in the project area.[41]

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[34] EPA comments on RDEIR/SDEIS, p. 5. *See also* RDEIR/SDEIS p. 9-19, 9-29. State Water Board comments on the RDEIR/SDEIS estimates different acreage amounts on p. 32: "Alternatives 1-3 are described as potentially eliminating more than 375 acres of wetland resources and more than 200 miles of stream resources."

[35] "The Central Valley Historic Mapping Project" by California State University, Chico Department of Geography and Planning and Geographic Information Center, 2003. Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/cmnt081712/sldmwa/csuchicodptofgeographyandplanningcentralvalley.pdf.

[36] *See* State of California Natural Resources Agency. (2010). State of the State's Wetlands: 10 Years of challenges and Progress. Sacramento, Ca. Available at: https://resources.ca.gov/CNRALegacyFiles/docs/SOSW_report_with_cover_memo_10182010.pdf

[37] *See* EPA Fact Sheet https://www.epa.gov/sites/default/files/2021-01/documents/amphibian_reptile_conservation.pdf. The latest aquatic delineation of the region's wetlands has not been updated in over 20 years. California Department of Water Resources. 2000. North of Delta Offstream Storage Investigation Progress Report, Appendix B: Wetland Delineation and Field Studies Report. Draft. Prepared for Integrated Storage Investigations, CALFED Bay-Delta Program. April 2000.

[38] RDEIR/SDEIS, p. 9-14.

[39] For discussion, *see* https://wildlife.ca.gov/Conservation/Plants/Vernal-Pools#22064101-laws-permits-and-cdfw-plant-programs.

[40] *See* RDEIR/SDEIS, p. 10-16.

[41] RDEIR/SDEIS, p. 10-80; *see also* USFWS Final Recovery Plan for the Giant Garter Snake, 2017, p. I-3.

In addition to the habitat directly lost to inundation and the construction of roads, new water conveyance infrastructure will also sever ecosystems and inhibit species movement and proliferation.[42] CDFW has identified much of the project area as having high connectivity value and high biodiversity ranking, with some areas marked as "irreplaceable and essential corridors" and "conservation planning linkages" in CDFW's Areas of Conservation Emphasis (ACE) program.[43] Connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range shifts and species migrations as climate changes.[44]

Sites Reservoir would cause habitat fragmentation that could reduce available habitat for mountain lions, American badgers, valley elderberry longhorn beetles, monarch butterflies, California red-legged frog, wester spadefoot toad, native bees, giant garter snake, tricolored blackbirds, western yellow-billed cuckoos, burrowing owls, native bats, and many other species. Sites would remove thousands of acres of contiguous, diverse habitats and eliminate local and regional connectivity for small, less mobile species. Poorly planned development can act as a barrier to wildlife movement and can affect an animal's behavior, home range, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, landscapes, and overall ecosystem function.[45] Habitat fragmentation has been shown to cause mortality of mountain lions, amphibians, reptiles and other organisms. Loss of connectivity decreases biodiversity and degrades ecosystems.

Climate change is increasing stress on species and causing a need for habitat flexibility and range shifting. Habitat connectivity is an essential linkage to species adaptation and persistence.

6. The Sites Reservoir Project Will Have Adverse Effects on Avian Species in the Project Area.

As discussed in the comments of NRDC et al. on the RDEIR/SDEIS, the construction and operation of Sites Reservoir will harm numerous threatened, endangered, and other special status bird species.[46] Affected avian species will include, but are not limited to, western yellow-billed

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[42] RDEIR/SDEIS, pp. 10-137 and 10-139, *see also* CDFW Comment Letter on RDEIR/SDEIS, p. 26.

[43] *See* California Department of Fish and Wildlife, Areas of Conservation Emphasis "ACE" Program, Interactive Map at https://apps.wildlife.ca.gov/ace/. For descriptions of connectivity rankings, s*ee also* CDFW's ACE Dataset Fact Sheet for Terrestrial Connectivity (DS2734) at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=150835&inline.

[44] *See* Cushman, S. A., McRae, B., Adriaensen, F., Beier, P., Shirley, M., & Zeller, K. (2013). Biological corridors and connectivity. In D. W. Macdonald & K. J. Willis (Eds.), *Key Topics in Conservation Biology 2* (First Edit, pp. 384–403). John Wiley & Sons, Ltd. *See also* Heller, N. E., & Zavaleta, E. S. (2009). Biodiversity management in the face of climate change: A review of 22 years of recommendations. Biological Conservation, 142, 14–32. *See also* Krosby, M., Theobald, D. M., Norheim, R., & Mcrae, B. H. (2018). Identifying riparian climate corridors to inform climate adaptation planning. PLoS ONE, 13(11).

[45] Ceia-Hasse et al., 2018; Haddad et al., 2015; Marsh & Jaeger, 2015; Mitsch & Wilson, 1996; Trombulak & Frissell, 2000; van der Ree et al., 2011

[46] It is important to once again note that the full extent of significant impacts to avian and terrestrial species are unknown because project proponents did not 1) use specific bird surveys, 2) use an accurate species distribution survey and 3) did not complete an aquatic delineation. The harms that are revealed by project proponents are discussed herein, but could be more extensive. For more information on missing information, *see* NRDC et al. RDEIR/SDEIS Comments, *see also* EPA RDEIR/SDEIS comments.

cuckoo, bald eagle, Swainson's hawk, bank swallow, burrowing owl, golden eagle, and white-tailed kite. They exist in the project area and in reaches of the Sacramento River and Delta.[47] Each of these species is protected from "take" under the Migratory Bird Treaty Act, and many have additional listings and protections under the federal Endangered Species Act and California Endangered Species Act.

According to project proponents, the construction and ongoing operation of the project will facilitate direct take of burrowing owls, golden eagles, bald eagles, and white-tailed kite through electrocution or collision with new transmission lines.[48] Take of avian species could also occur through use of rodenticides, disturbances of nesting sites, and other means, and the RDEIR/SDEIS does not make clear how these impacts would be fully avoided.[49]

B. The Sites Project Will Have Adverse Environmental Effects in and around the Sacramento River.

1. The Sites Project Will Adversely Affect Salmon and Sturgeon in the Sacramento River.

Most of the major native cold water fishes of the Sacramento River are in dire condition.

Spring-run Chinook salmon are virtually extirpated from the mainstem Sacramento River except for its use as a migration corridor. Winter-run Chinook salmon, listed as endangered under the federal Endangered Species Act (ESA), are the focus of a major management and political struggle in just about every year; their numbers are in the low thousands, and both temperature dependent mortality and egg-to-fry survival below minima needed for survival. Production of wild Sacramento fall-run Chinook salmon has dropped precipitously; the numbers of this species necessary to support commercial and sport fishing in California are at present wholly dependent on hatchery production, which in the last three years did not produce sufficient returning adults to prevent the total closure in 2023 of California's salmon fishery.[50]

Both green sturgeon and white sturgeon are also in dire condition. Green sturgeon are ESA-listed as threatened. White sturgeon are under consideration for listing under the federal Endangered Species Act; their numbers are further threatened by algal blooms in the greater San Francisco Bay. CDFW and the California Fish and Game Commission have initiated a process to reduce allowed harvest of white sturgeon.

Existing requirements on the SWP and CVP have utterly failed to protect these fishes. Water temperature protections for winter-run salmon are inadequate and routinely go unmet.

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[47] RDEIR/SDEIS, Chapter 10.

[48] *See*, e.g., RDEIR/SDEIS at 10-87, and 10-95 to 10-97.

[49] *See*, e.g., CDFW RDEIR/SDEIS Comments Appendix A, p. 14. The Sites project will permanently impact 14,000 acres of suitable nesting habitat for the owl. Additionally, CDFW has noted that rodenticides used for pest control could negatively impact the Burrowing Owl, especially as the project lacks an Integrated Pest Management Plan.

[50] Under the federal Endangered Species Act (ESA), spring-run Chinook salmon are listed as threatened, and winter-run Chinook salmon as listed as endangered. Both species are listed under the California Endangered Species Act (CESA).

Flow requirements are too low. Measures that seek to restrict diversions when fish "are present" are, as a category of protection measures, ineffective.

Outmigration and juvenile rearing are the principal lifestages of Sacramento River salmon and sturgeon that diversions to Sites Reservoir will most negatively affect. Recent studies, confirming older studies, directly link juvenile outmigration success of both salmon and sturgeon to flow. Additional studies show that rearing habitat, and the willingness of salmon to rear in the Sacramento River, is also related to flow.

The Sites Application proposes minimal flow protection on the Sacramento River for salmon and no explicit flow protection for sturgeon. The proposed flow requirement at the Red Bluff point of diversion on the Sacramento River is the same as the 3250 cfs year-round required release from Keswick Reservoir. The proposed flow requirement at the Hamilton City point of diversion on the Sacramento River is scarcely higher at 4000 cfs.

The proposed flow requirement at Wilkins Slough of 10,700 cfs is likely to be the controlling Sacramento River flow requirement at most times.[51] The basis for the number is Michel et al. (2021), whose study of outmigrating fall-run Chinook salmon smolts from April-June did not discern a clear increased benefit in increased survival from higher flow for that species in those months at that location.[52] However, it does not follow from the 2021 study of Michel et al. that a blanket 10,700 cfs flow at Wilkins Slough is a protective of other runs of Chinook salmon or of sturgeon, particularly at other locations and in different months. On the contrary, unpacking Michel et al. (2021) shows that the Sites Authority has chosen a flow value it can live with without sufficient protection for other runs and other lifestages of salmon.

Flows upstream of Wilkins Slough in April-June are generally higher than flows at the Wilkins gage, but the opposite is true from December through March. An April-June flow at Wilkins Slough would likely mean higher flows upstream as water stored in Shasta Reservoir is released to meet irrigation diversions along the Sacramento River. Flows in December-March, prior to the irrigation season, however, are dependent on uncaptured flow from Sacramento tributaries. Flows close to the spawning reaches of the Sacramento river, particularly upstream of Clear Creek, could well remain at or near the 3250 cfs required release from Keswick Reservoir. Migration past the points of diversion would thus receive little protection from a Wilkins Slough requirement of 10,700 cfs, which Michel et al. term as a "non-linear" threshold value below which migrating salmon exhibit reduced survival. At minimum, flows of 10,700 cfs at the points of diversion would be needed to offer equivalent protection for salmon whose downstream migration had not yet caused them to reach the Wilkins gage.

Fall-run and spring-run Chinook salmon smolts migrating in April-June in the Sacramento River between Deer Creek confluence and Feather River confluence (the focus of Michel et al. 2021) generally spend little time rearing in the Sacramento River. For the most

[51] The Application proposes 10,700 cfs from October 1 through June 15, with no diversions from June 16 through August 31. It proposes a bypass flow requirement of 5000 cfs for September. As discussed below, protestants object to the extensive season of diversion and propose limiting it, should the permit be issued, to December 1 through April 30.

[52] Michel et al., 2021, Nonlinear Survival of Imperiled Fish Informs Managed Flows in a Highly Modified River.

part, they are on the move toward the ocean. Michel et al. note these facts, but they also note that the same is not true for earlier life stages (fry and parr) of these species in earlier months of the year, which may migrate more slowly downstream, rearing in the Sacramento River.

Thus, the 10,700 cfs proposed minimum flow at Wilkins Slough is not protective of fall-run Chinook salmon in the Sacramento River in January-March, because flows upstream of Wilkins Slough prior to the start of the irrigation season are largely dependent on tributary inflow. In periods of low January-March tributary inflow, the 10,700 cfs flow would not be achieved at the points of diversion. The proposed minimum flow also is not protective of the fry and parr lifestages of fall-run Chinook, because Michel et al.'s study focused on migration and did not consider flow protection for rearing Chinook.

In contrast to Michel et al.'s lack of evaluation of rearing Chinook, Hassrick et al. (2022) observe that fry and parr winter-run Chinook salmon will utilize side-channel and other edgewater habitat in the Sacramento River at suitable flow conditions if it is available.[53] Hassrick et al. further observe, and provide data to support, the fact that such rearing habitat is present only when flows are high enough to create such habitat, such as they were in wet year 2017. Regarding migration, Hassrick et al. note that January-March pulse flows in the Sacramento River produce improved migration success for winter-run Chinook salmon in reaches from Keswick Dam to the city of Sacramento whenever, so long as the flow levels on top of which the pulse flows are released are less than 24,720 cfs. Stated differently, at least in the short term, January-March migration survival of winter-run Chinook salmon improves as flows increase, up to flow values of 24,720 cfs, in the Sacramento River, including at the proposed points of diversion for the Sites Project.

In addition, as flow levels at the point of diversion increase, the interaction of fish with the fish screen facilities is reduced.

Del Rosario et al. (2013) conducted studies that evaluated the outmigration timing of juvenile winter-run Chinook salmon on the Sacramento River.[54] Del Rosario et al. found that migrating juvenile winter-run Chinook begin their downstream migration from spawning grounds in July. It is likely that juvenile winter-run will be at the points of diversion from October through January.[55] Del Rosario et al. found that juvenile winter-run begin showing up at Knights Landing (River Mile (RM) 145) as early as October, and substantial numbers of winter-run juveniles often appear in November. The peak of the downstream migration past Knights Landing generally occurs in December.

Del Rosario et al. also found that winter-run juveniles migrate downstream in the Sacramento River on flow pulses, and specifically that "spikes" in catch in rotary screw traps at

[53] Hassrick et al. (2022), Factors Affecting Spatiotemporal Variation in Survival of Endangered Winter-Run Chinook Salmon Out-migrating from the Sacramento River.
[54] Del Rosario, R., et al. (2013), Migration Patterns of Juvenile Winter-run-sized Chinook Salmon (*Oncorhynchus tshawytscha*) through the Sacramento–San Joaquin Delta.
[55] See also Poytress et al. (2014), Compendium Report of Red Bluff Diversion Dam Rotary Trap Juvenile Anadromous Fish Production Indices for Years 2002-2012, which shows winter-run fry consistently at Red Bluff in October and November. Available at:
Compendium Report of Red Bluff Diversion **...**

Knights Landing corresponded to the first fall (water-year) flow event with flows above 14,125 cfs measured at Wilkins Slough. Del Rosario et al. also found, however, that flows of 10,594 cfs measured at Wilkins Slough did not correspond to comparable spikes in downstream migration of winter-run Chinook past Knights Landing.

The work of Del Rosario et al. thus suggests that an October-December bypass flow of 10,700 cfs at Wilkins Slough may retard the autumn outmigration of winter-run Chinook salmon. The prospective combined diversion to Sites of 4200 cfs at Red Bluff and Hamilton City could reduce flow from an identified flow threshold for large-scale winter-run migration event to a level identified as inadequate (reduction from 14,125 cfs to inadequate 10,594 cfs).

Moreover, Del Rosario et al. underscore the importance of life history diversity in general and for winter-run Chinook in particular. The identified relatively early outmigration of some winter-run Chinook in October and November has importance relative to the life history diversity of this endangered species that is uniquely found in the Sacramento River. Such fish benefit extensively from stochastic storm events and resulting flow pulses. Large-scale diversions in the Sacramento River during October and November are thus damaging, even if they do not reach identified thresholds, recalling also that winter-run Chinook also rear in edgewater habitat from Red Bluff downstream, and may migrate a limited distance on early season flow spikes.

The Sites Application proposes to protect downstream migration of Chinook salmon and other anadromous fishes by implementing "pulse protection" that would cease diversions to Sites reservoir after a "qualifying event" in which there is a natural (not from storage) flow pulse greater than 8000 cfs at Bend Bridge and "migrating anadromous fish are detected" at Red Bluff Diversion Dam.[56] Generically, this approach has proven ineffective in various iterations relating to the Sacramento-San Joaquin watershed. It relies on the judgment that a best-bang-for-the-most-fish measure is sufficient protection, ignoring the outsized significance of adverse effects on species when those species are in severely depressed condition.

More specifically to this Application, the proposed pulse protection measure focuses too heavily on impacts at Red Bluff, without consideration that diversions to Sites could affect rearing and migration of anadromous fish downstream. Rather than relying exclusively on the snapshot of fish detection at a single location at the top of 250 river miles or migration and rearing corridor, appropriate flow requirements at different points on the corridor, that assume both the presence of fish and the importance of other river functions, provides a more protective methodology.

Both the Application and the general messaging regarding the proposed Sites Project promote the project for its prospective environmental benefits, particularly to Chinook salmon and water temperature management in the Sacramento River.[57] However, there are no

[56] *See* Joint Reservoir Committee & Authority Board, Agenda Item 3.1, February 17, 2023, "Status Briefing on the Final EIR/EIS, Part 1 of 3" (Final EIR Status Briefing), p. 3. Available at: https://sitesproject.wpenginepowered.com/wp-content/uploads/2022/11/03-01-Final-EIR_EIS-Status-Update.pdf.

[57] *See, e.g.*, Petition for Partial Assignment p. 5 of 8, stating that the project "could … aid in achieving cold-water benefits in the upper Sacramento River."

requirements or proposed permit terms that would make such ascribed benefits enforceable. In conditions where the Sites Project is not able to assist Reclamation in reducing temperature dependent mortality of winter-run Chinook below 30%, impacts of diversions to Sites in the subsequent outmigration season carry additional adverse consequence.[58] Therefore, a permit term that disallows diversions to Sites during the December and January outmigration season for winter-run Chinook, following a spawning season in which temperature dependent mortality of winter-run Chinook exceeded 30%, is appropriate. Equally, a permit term that disallows diversions to Sites during the December and January outmigration season for winter-run Chinook following a season in which temperature management in the Sacramento River has not allowed egg to fry survival of winter-run Chinook salmon greater than 25%, is also appropriate.[59]

Sites Reservoir could also be operated to allow less reduction in stage height in the Sacramento River downstream of Keswick Reservoir from September through December. The purpose of such operation would be to reduce redd dewatering and stranding of fall-run Chinook salmon eggs and alevin. Redd dewatering and stranding can severely diminish the survival of wild fall-run Chinook juveniles in the Sacramento River. Therefore, a permit term that disallows diversions to Sites Reservoir in the months of December through the end of the season of diversion, following a September through December time period in which the stage height of the Sacramento River just downstream of Keswick Dam has dropped more than 1.5 feet, is also warranted.[60]

Such permit terms would convert the Sites project's representations of environmental benefits to Sacramento River salmon into enforceable requirements.

The Sites Application provides no explicit protections for sturgeon.

In his seminal reference book Inland Fishes of California, Peter Moyle states that white sturgeon do not reproduce every year, and that white sturgeon tend to increase spawning activity in years with abundant flow.[61] Moyle also notes that white sturgeon tend to spawn in the Sacramento River between Knights Landing (RM 145) and Colusa (RM 231), and that spawning takes place from late February through early June.[62]

Green sturgeon generally spawn later in the season in April and May, and move farther upstream to spawn than white sturgeon. Moyle noted in 2002 that green sturgeon were present at times as far upstream as Red Bluff.[63] Despite the partial blockage of sturgeon by the old Red Bluff Diversion Dam, juvenile green sturgeon were detected in rotary screw traps at that Dam in most years from 2002-2012.[64] Detection began in May, and in some cases continued into

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[58] 30% temperature dependent mortality was a key threshold identified by the National Marine Fisheries Service (NMFS) in the Proposed Amendment to the Reasonable and Prudent Alternative of the 2009 Opinion (January 17, 2017), pdf p. 13. Available at:
NMFS's Draft Proposed 2017 RPA Amendment
[59] 25% egg to fry survival was identified as a key threshold in *Id.*
[60] 1.5 feet is a frequent depth for Chinook salmon redds.
[61] Peter Moyle, Inland Fishes of California (2002), p. 108.
[62] *Id.*
[63] *Id.*, p. 111.
[64] Poytress et al. (2014), *op. cit.*

August. Since the 2013 dismantling of the Red Bluff Diversion Dam, upstream passage of green sturgeon has become much less difficult; juveniles continue to be captured in rotary screw traps at Red Bluff.[65]

Juvenile sturgeon are poor swimmers, and larval sturgeon are very small. Larval green sturgeon that pass the intake to the Tehama-Colusa Canal at Red Bluff or the intake to the Glenn-Colusa Canal at Hamilton City are susceptible to entrainment. The Sites project would also have less direct impacts to both species of sturgeon downstream of the points of diversion. These would consist of reduction of flow by up to 2200 cfs between Red Bluff and Hamilton City and up to 4200 cfs downstream of Hamilton City, when irrigation diversions to these canals are not occurring. Otherwise, the flow impact of diversions to Sites Reservoir would be the difference between the rates of diversion for irrigation and the combined capacity of the canals.

The Sites project's season of diversion through June 15 of each year extends through just about the complete spawning window for both green and white sturgeon. Shortening the season of diversion is the best protection for sturgeon in the Sacramento River.

In summary, the proposed bypass flows proposed in the Sites application are inadequate to protect salmon and sturgeon in the Sacramento River. It is misleading to consider the percent reduction in streamflow that the Sites diversions would make, on average, relative to the monthly total Sacramento River flow. Measures that rely on fish detection have both general and specific limitations in effectiveness. A more appropriate methodology is to disallow diversions that reduce flows below identified key thresholds and also to disallow diversions that would occur following known mortality thresholds for these species. It is also important to shorten the season of diversion to protect important and diverse lifestages of salmon and sturgeon.

2. Releases from Sites Reservoir Could Have Adverse Impacts to Water Temperature in the Sacramento River.

Releases from Sites Reservoir to the Sacramento River could increase the water temperature of the river. Sites Authority has represented that this would not occur for two reasons: the variable depths available for release of water from the outlet works on the proposed reservoir, and the likelihood that water temperature in the Tehama-Colusa Canal and in the Sacramento River would likely have reached an identical equilibrium at the point of discharge into the Sacramento River.

Nonetheless, it is conceivable that under some circumstances the water temperature of the discharge could exceed the water temperature of the receiving Sacramento River. Protestants therefore recommend a permit term that would prohibit releases from Sites Reservoir to the Sacramento River when the water temperature of the water thus discharged exceeds the water temperature of the Sacramento River at the point of discharge.[66]

[65] T. Cannon, pers. comm.

[66] *See also* discussion in Section V(D) below of water temperature impacts due to diversions to Sites Reservoir.

3. The Sites Reservoir Project Will Have Adverse Effects on Wetlands along the Sacramento River.

Operation of the project will also impact wetlands downstream of the project along the Sacramento River and in the Sutter and Yolo bypasses, by reducing the area of inundation at both bypasses and in Sacramento side channel habitat.[67]

The withdrawal of any water from the normal flows of the Sacramento River will have ecological consequences, with those impacts being largely a matter of degree. The Sacramento River riparian ecosystem is flow-driven. Flow changes caused by Sites could significantly impact riparian habitat and riparian-dependent species.

In 1988, as little as two percent of the riparian forests along the Sacramento River remained. These forests support a wide variety of fish and wildlife species, many of which are declining towards extinction due to the loss of habitat. While the river's threatened and endangered salmonids depend on riverside forests to provide shaded riverine habitat and large woody debris for cover, threatened and endangered wildlife dependent on the Sacramento River will also suffer as a result of extremely reduced flows from Sites. During pumping operations, Sites could take 30% or more of the flows from the upper Sacramento River alone.[68] Such a reduction in flows could have serious consequences for sensitive riparian habitat and the threatened and endangered species that rely on it.

4. The Sites Project Will Adversely Affect Riparian Species and Habitats along the Sacramento River.

Many riparian-dependent species could be impacted by Sites-induced flow changes to the Sacramento River both upstream and downstream of the project. Protestants object to all such impacts, but focus on several species of concern to provide a representative sample of potential impacts. These species include the western yellow billed cuckoo, Swainson's hawk, bank swallow, and the valley elderberry longhorn beetle.

Originally listed in 1971, the western yellow-billed cuckoo (ESA: threatened, CESA: endangered) nests in willow-dominated riparian woodlands and forages in expansive stands of cottonwood and willows. Continuing riparian succession is incredibly important to sustain breeding populations. Continued operation of dams and diversions dampens hydrologic events and functional flows that are essential to induce riparian succession and replenish riparian habitats. This cuckoo was historically found throughout the Central Valley, but is now constrained to portions of the Sacramento River and Sutter Bypass. Sites would further reduce flows and dampen the hydrograph, reducing the western yellow-billed cuckoo's little remaining habitat.

[67] EPA comments on RDEIR/SDEIS, pp. 5-6; *see also* RDEIR/SDEIS, Appendix 11M, Chapter 9.

[68] Sites diversions have minimum bypass flow criteria of 3,250 cfs at Red Bluff Pumping Plant and 4,000 cfs at Hamilton City Pumping Station (see RDEIR/SDEIS Chapter 2. Project Description and Alternatives. Pg. 2-33). Any and all flows in addition to the controlling minimum bypass flow would be diverted.

The Swainson's hawk (CESA: threatened) has experienced a precipitous decline in California over the last century. Although historic populations may have been up to 17,136 breeding pairs, the population had shrink to 425 pairs by 1980.[69] The hawk relies heavily on riparian habitat for nesting, with a preference for cottonwoods,[70] a major riparian tree species that has drastically declined, especially where it has existed downstream from dams.[71] Cottonwoods are dependent on streamflow and groundwater;[72] thus, reduced and altered flows from Sites could reduce critical nesting habitat for the hawk. CDFW has also noted that the Sites project "will result in the significant loss of foraging habitat"[73] for the Swainson's Hawk, which could ultimately reduce range and abundance of this threatened species.

The bank swallow (CESA: threatened) relies heavily on riparian ecosystems for much of its needs. It nests in eroded banks along the Sacramento River, which are a result of dynamic functional flows, and evolution of river systems. The Sacramento River and its major tributaries are core habitat for the swallow, and most important for long term recovery of the species. CDFW has noted numerous potential impacts that Sites Reservoir could have on bank swallow populations, including flooding burrows and habitat loss.[74] The loss of nesting habitat from changes to flow regime on the Sacramento River will be compounded by the loss of 15,664 acres of foraging habitat due to the Project.[75] Opportunities for recovery diminish as remaining nesting habitat along the Sacramento River and its major tributaries disappears. By reducing and dampening flows, Sites will further jeopardize the little remaining habitat and ecosystem processes that support this threatened bird.

The valley elderberry longhorn beetle (ESA: threatened) is completely dependent on riparian ecosystems because its host plant, the elderberry shrub, relies on rivers or high groundwater tables for survival. Sites-induced flow changes could further reduce connectivity

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[69] Bloom, Peter H., The Status of the Swainson's Hawk in California, State of California, Natural Resources Agency, Department of Fish and Game, 1979. Link: https://web.archive.org/web/20180425010648/https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=4031&inline.

[70] *Id.*

[71] Rood, S.B. and J.M. Mahoney. 1990. Collapse of riparian poplar forests downstream from dams in western prairies: probable causes and prospects for mitigation. Environ. Manage. 14:451–464.

[72] *Id.*

[73] Comments of the California Department of Fish and Wildlife on the Sites RDEIR/SDEIS, Pg. 13.

[74] CDFW Comments on the Sites Reservoir RDEIR/SDEIS, Appendix A, Pg. 15, California Department of Fish and Wildlife, 2022. Available at: https://sitesproject.org/wp-content/uploads/2023/06/SRP_RSD_0077_CDFW.pdf

> Timing of flow releases can have both direct and indirect impacts to bank swallow populations. Direct impacts and potential take can occur if high flows during the late spring and summer nesting season cause inundation of burrows or loss of nests caused by localized bank sloughing. Indirect impacts could occur with changes in flow regimes as bank swallows need winter and early spring flows to allow refreshing of erosional banks. Therefore, a change from current operations of flows on the Sacramento River as a result of the Proposed Project could beneficially or adversely impact bank swallows depending on the timing, duration, and volume of flows. CDFW recommends the FEIR/FEIS include the consideration of bank swallow life cycle in any changes in flows as a result of the Proposed Project, especially during nesting season (April 1 - August 31).

[75] RDEIR/SDEIS Ch. 10, Table 10-2d. Acreages of Permanent and Temporary Impacts on Modeled Special-Status Bird Habitats in the Study Area.

between surface and groundwater, and further fragment riparian habitat, and therefore populations of the shrub and beetle.

Riverine ecosystems are governed by patterns of temporal variation in river flows and are particularly susceptible to flow changes. Even without Sites, flows will be modified due to climate change and the near-ubiquitous human control of river flow, with severe effects on fish and wildlife species. Riverine ecosystems are particularly susceptible to flow changes. A scientific study summarized the sensitivity of riparian ecosystems:

> …even slight modifications to the historic natural flow regime had significant consequences for the structure of riparian plant networks. Networks of emergent interactions between plant guilds were most connected at the natural flow regime and became simplified with increasing flow alteration. The most influential component of flow alteration was flood reduction, with drought and flow homogenization both having greater simplifying community-wide consequences than increased flooding. These findings suggest that maintaining floods under future climates will be needed to overcome the negative long-term consequences of flow modification on riverine ecosystems.[76]

Riparian ecosystems and species are highly sensitive to even small changes in flow. Even a single hour of flow increase could destroy burrows of bank swallows. At the opposite end of the spectrum, extended large diversions could reduce connectivity between ground and surface water, threatening groundwater-dependent ecosystems with impacts to the elderberry shrub and cottonwood trees, and to the species that depend on them. Riparian-dependent species along the Sacramento River have continued to decline under the extensively modified flow regime caused by dam operations and will likely continue to decline under flow modifications, both minor and major, caused by diversions to Sites. This outcome is unacceptable due to the countless protected species that rely on the Sacramento River's riparian habitat.

C. Sites Reservoir Will Have Adverse Environmental Impacts on Pelagic and Anadromous Fish in the Sacramento-San Joaquin Bay-Delta Estuary and San Francisco Bay.

The Sites Application proposes to conform to the Delta protections for fish and other aquatic species given in Water Rights Decision 1641 (D-1641), which has utterly failed to protect Delta fisheries. Even worse, the Sites project will substantially reduce inflow to the Bay-Delta estuary in the key winter and spring months, by capturing up to 4200 cfs of otherwise uncaptured flow. Reis et al. (2019)[77] describe the controlling factors of actual Delta outflow from 2010-2018. Reis et al. found that, "Taken together, [Additional Uncaptured Outflow] and those outflows needed to maintain the [Hydraulic Salinity Barrier] accounted for the vast

[76] Flow regime alteration degrades ecological networks in riparian ecosystems, Jonathan D. Tonkin, et al., Nature Ecology & Evolution, published online Nov. 27, 2017.

[77] Gregory J. Reis, Jeanette K. Howard, and Jonathan A. Rosenfield, Clarifying Effects of Environmental Protections on Freshwater Flows to—and Water Exports from—the San Francisco Bay Estuary, San Francisco Estuary Institute and Watershed Science, March 2019, https://escholarship.org/uc/item/8mh3r97j.

majority of actual Delta outflow."[78] Uncaptured inflow, far more than D-1641 requirements, is what sustains Delta fisheries to the degree these fisheries are sustained at all. The Sites project will adversely affect pelagic fish in the Delta and anadromous fish migrating through the Delta, precisely by reducing otherwise uncaptured Delta inflow and outflow.

In 2010, the State Water Board, as required by the Delta Reform Act, conducted a hearing on the flow needs of fish in the Bay-Delta watershed. The resulting Delta Flow Criteria Report concluded that fish need up to 75% of the unimpaired flow into and out of the Delta to thrive.[79] In 2018, the State Water Board published a Framework for the development of an update to the Bay-Delta Plan, outlining the State Water Board's Plan to consider a requirement that would limit diversions in the Bay-Delta watershed such that Delta outflow would be no less than 55% of the unimpaired outflow, with an adaptive range of between 45% and 65% of the unimpaired outflow.[80]

The precipitous collapse of pelagic and anadromous fish populations in the Sacramento-San Joaquin Bay-Delta estuary since construction of the State Water Project 1967 has been documented at considerable length. Since the State Water Project began exporting water from the Delta, the Department of Fish and Wildlife's (CDFW) Fall Midwater Trawl indices (1967-1971 versus 2016-2020) for striped bass, Delta smelt, longfin smelt, splittail, and threadfin shad have declined by 98.1, 99.9, 99.8, 99.3 and 94.3 percent, respectively.[81] The U.S. Fish & Wildlife Service's (USFWS) Anadromous Fisheries Restoration Program documents that, since 1967, in-river natural production of Sacramento winter-run Chinook salmon and spring-run Chinook salmon have declined by 98.2 and 99.3 percent, respectively, and are only at 5.5 and 1.2 percent, respectively, of doubling levels mandated by the Central Valley Project Improvement Act, California Water Code, and the California Fish and Game Code.[82]

CDFW's Memorandum of December 29, 2022 reported the 2022 Fall Midwater Trawl annual fish abundance and distribution summary. Regarding ESA "endangered" Delta smelt, the Memorandum stated:

> The 2022 abundance index was zero and continues the trend of no catch in the FMWT (Fall Midwater Trawl Survey) since 2017. (Fig. 2). No Delta Smelt were collected from

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[78] *Id.*, p. 17.

[79] *See* State Water Board (2010), Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (Delta Flow Criteria Report), p. 5. Available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

[80] *See* State Water Board (July 2018), Framework for the Sacramento/Delta Update to the Bay-Delta Plan (Framework), p. 2. Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf.

[81] In the 3 years since 2020, none of these indices has qualitatively improved. *See* CDFW Fall Midwater Trawl Memorandum, Dec. 29, 2022, available at: 2022 FMWT Annual Memo. We incorporate this document by reference, including specifically the figures cataloguing the decline in abundance of pelagic species, including Delta smelt and longfin smelt, since 1967. It is attached hereto as Exhibit E.

[82] Part of the decline of salmon is, as suggested above, attributable to inadequate flow in the Sacramento River upstream of the Delta. In this section, we discuss salmon survival and mortality from Freeport into San Francisco Bay.

> any stations during our survey months of September-December. An absence of Delta Smelt catch in the FMWT is consistent among other surveys in the estuary.[83]

The condition of longfin smelt also continues to deteriorate, and the U.S. Fish and Wildlife Service (FWS) announced on October 6, 2022, that it is processing a petition now to list longfin smelt under the federal ESA as endangered.[84] The slight uptick in the longfin smelt index based on Fall Midwater Trawl capture of longfin smelt in 2021 and 2022 still leaves the index at two orders of magnitude below its historical levels in 1967.[85] Longfin smelt are already listed as threatened under CESA.

The abundance of Delta smelt has diminished dramatically since the Pelagic Organism Decline of the early 2000s, and more particularly since the implementation of weakened Delta salinity standards under Temporary Urgency Change Orders for Delta operations in 2014 and 2015. Since the almost total crash of the Delta smelt population in 2014 and 2015, critical flow thresholds for Delta smelt have become virtually impossible to define based on recent data. As a general matter, Delta smelt survival improves with the location of the low salinity zone in Suisun Bay rather than in the Delta. This both provides increased volume of habitat with suitable salinity, greater access to food, less likelihood of entrainment at the south Delta export facilities, and cooler water temperatures toward the end of spring.

One of the alleged benefits of the Sites project is that it will release flow through the Tule Canal and Toe Drain on the east side of the Yolo Bypass that will discharge into the Cache Slough complex. The Cache Slough complex is known to contain a small population of Delta smelt. The theorized but unproven benefit would be an increase in nutrients discharged to the Cache Slough complex that would provide additional food available to Delta smelt. This mitigation should at minimum include a monitoring program to evaluate its effectiveness. There should also be a permit term that disallows such discharges when water temperatures of the discharged water exceed 20ºC or the temperature of the receiving water.

There are, however, identified critical thresholds for Delta outflow for the survival of longfin smelt.

The State Water Board's 2017 Scientific Basis Report developed in support of the update of the Bay-Delta Plan described the importance of flow for longfin smelt:

> The population abundance of longfin smelt in fall is positively correlated to Delta outflow or X2 as its proxy during the previous winter and spring (Jassby et al. 1995; Rosenfield and Baxter 2007; Kimmerer 2002b; Thomson et al. 2010; Maunder et al. 2015; Stevens and Miller 1983; Nobriga and Rosenfield 2016). Statistically, the strongest relationship is with outflow between January and June.[86]

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[83] 2022 FMWT Memo, *op. cit.*

[84] See FWS, announcement of proposed listing of longfin smelt. Available at: https://baykeeper.org/sites/default/files/image_upload/images/FW%20longfin%20ESA%20listing.pdf

[85] 2022 FMWT Memo, *op. cit.*

[86] State Water Board (2017), Scientific Basis Report in Support of New and Modified Requirements for Inflows from the Sacramento River and its Tributaries and Eastside Tributaries to the Delta, Delta Outflows, Cold Water Habitat, and Interior Delta Flows (Scientific Basis Report), p. 3-55. Available at:

The Scientific Basis Report found: "The flows in the State Water Board analyses associated with a 50 percent probability of positive population growth was 42,800 cfs between January and June, respectively."[87]

CDFW's 2020 Incidental Take Permit for Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta (ITP) identified a slightly higher threshold for the protection of longfin smelt, as well as Delta smelt, in the months of April and May. The ITP requires limitations on April and May Delta export operations until Delta outflow exceeds 44,500 cfs.[88]

Flow into and out of the Delta is also a strong factor in the survival of salmon and sturgeon migrating through the Delta.

Perry et al. (2018) used acoustic tracking data to find that a flow of 35,000 cfs measured at Freeport, where the Sacramento River enters the Delta, was an inflection point above which survival of juvenile salmon migrating through the Delta increased.[89] This finding is remarkably consistent with earlier studies by Martin Kjelson (1987) that used coded-wire tag data to find that April-June survival of fall-run Chinook salmon smolts topped out at flows of 30,000 cfs in the Sacramento River at Rio Vista.[90]

The Board's Scientific Basis Report, relying heavily on a study by Martin Gingras of CDFW, set a flow threshold of 37,000 cfs Delta outflow for sturgeon, stating: "Average Delta outflows of less than 30,000 cfs had a small probability of producing strong year classes and outflows of 37,000 cfs or larger between March and July were associated with a 50 percent probability of producing a good year class."[91]

In summary, the proposed bypass flows proposed in the Sites application are inadequate to protect Delta smelt, longfin smelt, salmon, and sturgeon in the Bay-Delta estuary. The State Water Board should disallow diversions to Sites Reservoir when the flow thresholds for Delta inflow and outflow identified in the dismissal terms below are not met or exceeded.

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https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2022/201710-bdphaseII-sciencereport.pdf.

[87] *Id.*, p. 3-56.

[88] CDFW (2020), Incidental Take Permit for Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta (2081-2019-066-00), p. 103. Available at: Incidental Take Permit for Long-term SWP Operations.

[89] Perry, R. W., Pope, A. C., Romine, J. G., Brandes, P. L., Burau, J. R., Blake, A. R., ... & Michel, C. J. 2018. Flow-mediated effects on travel time, routing, and survival of juvenile Chinook salmon in a spatially complex, tidally forced river delta. Canadian Journal of Fisheries and Aquatic Sciences, 75(11), 1886-1901.

[90] Martin Kjelson, The Needs of Chinook Salmon in the Sacramento-San Joaquin estuary, FWS Exhibit 31 in Bay-Delta flow hearings (1987), pdf p. 52 ("Maximum survival was reached at flows of about 30,000 cfs at Rio Vista.")

[91] Scientific Basis Report, p. 3-64.

D. Absent an Appropriate Permit Term, Sites Reservoir Will Have Adverse Impacts on the Trinity River and its Fisheries.

The Bureau of Reclamation diverts water from the Trinity River to the Sacramento River through Reclamation's Shasta/Trinity River Division of the Central Valley Project. As one of the Sites project partners, Reclamation thus has the ability to deliver water sourced in the Trinity River to the intakes of the Glenn-Colusa Canal and the Tehama-Colusa Canal for rediversion to Sites Reservoir.

Modeling in support of the 2021 RDEIR/SDEIS for the Sites Project showed no apparent effect on the Trinity River, or use of water sourced in the Trinity River, by the Sites project. However, there is no existing constraint in Reclamation's water right permits that precludes such effect or such use. Moreover, the modeling for the RDEIR/SDEIS relied on assumed, rather than required, operations of Trinity Reservoir and other aspects of the Shasta/Trinity River Division.

Sites Reservoir could negatively impact the Trinity River through Bureau of Reclamation operations that either reduce cold water storage in Trinity Lake and/or change the timing of diversions to the Sacramento River, which could cause warming of Trinity River releases and failure to meet Trinity River temperature requirements and objectives protective of salmon. Thus, operation of Sites Reservoir could adversely affect natural and hatchery runs of state and federally threatened Coho salmon, state threatened spring-run Chinook salmon, federally listed green sturgeon, fall-run Chinook salmon, and steelhead in the Trinity River and the Lower Klamath River.

At present, none of these species has a population that is anywhere near a level that achieves the recovery mandated in the 2000 Trinity River Record of Decision, an agreement between the Interior Secretary and the Hoopa Valley Tribe to restore the Trinity River's fisheries to meet Congressional fishery restoration goals.

Diversions of Trinity River water to Sites Reservoir, and resulting impacts to the Trinity's fisheries, could adversely impact the federally reserved fishing and water rights of the Hoopa Valley and Yurok Tribes, who are entitled to half of the harvestable surplus of Klamath and Trinity fisheries. Other tribal beneficial uses that could be adversely affected include commercial (Yurok only) and subsistence fishing, and cultural beneficial uses.

The Trinity River also supports in-river and ocean recreational and commercial fisheries. The lack of Klamath-Trinity fall-run Chinook has led in part to a ban on recreational and commercial fishing of salmon in California in 2023, with an extremely limited subsistence take for the two Tribes. Impacts of diversions of Trinity River water to Sites Reservoir could further restrict recreational, commercial, and tribal harvest of salmon in California.

A permit term precluding the rediversion to Sites Reservoir of water sourced in the Trinity River is necessary to protect the Trinity River, the Lower Klamath River, their fisheries, and tribal, recreational, and commercial uses of these rivers.

III. The Construction and Operation of Sites Reservoir Would Not Best Conserve the Public Trust.

A. Construction and Operations of Sites Reservoir Would Not Best Conserve Public Trust Resources.

The public trust responsibilities of the State Water Board are well understood and well documented. "The State Water Board is responsible for the protection of resources, such as fisheries, wildlife, aesthetics, and navigation, which are held in trust for the public. … The State Water Board must consider these public trust values in the balancing of all beneficial uses of water, in accordance with the Water Rights Mission Statement and Water Code §1253."[92] The State Water Board is responsible for ensuring that diversions for consumptive use are sustainable and for protecting the instream flows needed for both the restoration and ongoing preservation of public trust resources. These responsibilities are profoundly important in our era of climate change, as the State Water Board has a duty to protect the rights of future generations to enjoy the state's public trust resources as well.

As has been documented in detail above, the Sites Reservoir project will adversely affect public trust resources such as plants, fisheries, and wildlife because, non-exhaustively, it will cause changes in flow, temperature, and water quality in the Sacramento River and the Bay-Delta estuary.

The public trust responsibilities of the State Water Board extend beyond mitigating the impacts of a new water development project. As is documented below, the DWR and Reclamation, and their contractors, propose to add storage to their statewide portfolios without adding any requirements to their responsibilities under their existing water rights to protect the public trust resources they have to date utterly failed to protect. The State Water Board has an "affirmative duty" to require more of those entities seeking new water rights when those entities have failed to protect the public trust under their existing water rights.

B. Construction and Operations of Sites Reservoir Would Not Best Conserve Public Trust Resources Used by and Essential to Tribes.

The Bay-Delta Plan applies to the Sites project area.[93] The Bay-Delta Plan establishes water quality control objectives for the reasonable protection of water quality and beneficial uses. As such, the water quality objectives and beneficial uses contained in the Bay-Delta Plan constitute State water quality standards. The State Water Board is currently developing its Staff Report for the Bay-Delta Plan, and expects to release a draft Report in September 2023. Early in summer 2023, the State Water Board released a notice informing the public that "tribal beneficial uses are being considered as part of the upcoming draft staff report,"[94] and held an informational

[92] *See* State Water Board Division of Water Rights webpage at: https://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.html.
[93] See Sites Water Rights Application, Petition for Release from Priority, p. 6 of 11.
[94] Notice on Tribal Beneficial Uses, May 11, 2023. Available at: https://www.waterboards.ca.gov/board_info/calendar/docs/2023/notice_tbu_051123.pdf.

meeting. The explicit consideration of the protection of tribal beneficial uses in areas covered by the Bay-Delta Plan is therefore dependent in part on the update of the Bay-Delta Plan.

The Sites project will affect the traditional tribal territories of Miwok, Nisenan, and Patwin people in the lower reaches of the Sacramento River and the North Delta.[95] The Sites project will also affect the traditional tribal territories of the Nomlaki, Pomo, Miwok, Patwin, Konkow Maidu, and Nisenan Maidu in the mid and upper reaches of the lower Sacramento River.[96] Tribes have spoken out about the failure to conduct adequate consultation.

Tribes have relied on water systems to provide resources since time immemorial. Because of the way the water rights system was created, water rights for Tribes have been limited. This has limited the continuation of traditions, cultural practices, and access to tribally significant resources. The Sites project will have an impact on fisheries, including tribal subsistence fisheries. Aquatic resources, such as tule, are used to weave baskets and tools, and for consumption. There are Tribes that have creation stories around salmon that live in the waterways that will be affected by the project;[97] those Tribes deserve to have their cultural histories protected.

In addition, Sites Reservoir will result in reduction of floodplains and inundated wetlands along the Sacramento River and in the North Delta.[98] Floodplains are critical to the growth, production, and survival of tribal trust fisheries and cultural plants. Plants that are tribally significant include tule, willow, and mugwort, whose uses include basket weaving, boatmaking, consumption, medicines, and ceremonies.[99] These aquatic plants need adequate high-water events that provide floodplain and wetland inundation. Reduced frequency and magnitude of such inundation may reduce the quality and quantity of resources available for tribal uses.

The Application concludes that there may be surface water degradation during construction and operation, which could lead to increases in methylmercury concentrations in the water and in fish tissue.[100] This could adversely affect tribal beneficial uses.

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[95] *See* Highlights, Central Valley Flood Protection Plan, p. 20. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Flood-Management/Flood-Planning-and-Studies/Central-Valley-Flood-Protection-Plan/Files/CVFPP-Updates/2022/a0000-CVFPP_U22_layout_Highlights_vFINAL_online.pdf.
[96] *Id.*, p. 21.
[97] Run4Salmon, "Mini-Lesson 1: the Winnemem Wintu," slide 3. Available at: https://docs.google.com/presentation/d/e/2PACX-1vS2mX-OT6z7E-XycrMv1DZeahc8vDU1kAbkuOwyc1J-_Y8scf5SYs7s0h2ksth00QgWZ6QtNTVnxWgz/embed?start=false&loop=true&delayms=60000&slide=id.g35f391192_057.
[98] RDEIR/SDEIS, Chapter 11, Appendix 11M, Chapter 9.
[99] https://www.parks.ca.gov/pages/486/files/plantreferenceguide2014_03_03_14.pdf.
[100] Sites Water Rights Application, Request for Release from Priority, p. 7 of 11.

IV. The Construction and Operation of Sites Reservoir Would Not Best Conserve the Public Interest.

A. Contrary to the Sites Application Petition for Assignment of a State Filing, the State Water Board Has an Affirmative Duty to Evaluate whether the Assignment Would Be Consistent with a Coordinated Plan for the Conservation of California's Water (Water Code § 10504).

The Sites water rights Application is simultaneously a petition for assignment of a state-filed application under Water Code § 10500 et seq. As such, it must meet the requirements of Water Code § 10504, and not be in conflict with a "such general or coordinated plan" that is "looking toward the development, utilization, or conservation of the water resources of the state." (Water Code § 10500.)

The Sites Petition for Assignment argues that because the Sites project is consistent with the 2018 California Water Plan update, the project therefore complies with Water Code § 10504: "Sites Reservoir does not interfere with or prevent the development of a coordinated plan because it is 'substantially in accord' with the project described in A025517 and is part of the State Water Plan and related water planning efforts."[101]

Protestants object to this interpretation of Water Code §§ 10500 and 10504. The State Water Board's obligation in making the evaluation of consistency is much more than a check-the-box exercise to ascertain consistency with this or that existing document.

In 1955, the attorney general discussed the language in Water Code § 10500, and determined:

> [S]ection 10500 continues to authorize the filing of applications on unappropriated water which, in the judgment of the Department of Finance, "is or may be required" for "the whole or any part of a general or coordinated plan." In the light of the background and the date of enactment of this section, it is not confined in its application to any particular "plan,". as, for example, the specific "State Water Plan" defined. in section 10000 and adopted and approved by section 10002.

25 Op. Atty. Gen. 8, 16.

It is the view of protestants that the Board thus has an affirmative and ongoing obligation under Water Code § 10504 to determine whether any petition for assignment of a state-filed application is consistent with "such coordinated or general plan" that, as described in Water Code § 10500, "…in its judgment is or may be required in the development and completion of the whole or any part of a general or coordinated plan looking toward the development, utilization, or conservation of the water resources of the state." This is the standard to which the Board must hew and the exercise it must independently undertake in responding to and evaluating the Sites Application and Petition for Assignment.

[101] Sites Water Right Application/Petition for Partial Assignment (hereinafter, Petition for Assignment), p. 3 of 8.

B. Sites Reservoir Is Founded on, Will Expand, and Will Prolong the Overallocation of the State's Water, and Is Thus Not Consistent with a Coordinated Plan for the Conservation of California's Water (Water Code § 10504).

Water in California, and in particular in its Central Valley, is overallocated and overappropriated. The unmistakable evidence of the overappropriation of surface water in California is ecosystem collapse. The unmistakable evidence of the overappropriation of groundwater in California is sinking groundwater levels, shallow wells running dry, and land subsidence, due to overpumping of groundwater in the San Joaquin Valley and in some other regions. Further unmistakable evidence of the overappropriation of groundwater is also, as with surface water, ecosystem collapse.

The Sites project seeks to capture one of the last remaining unallocated large volumes of water that is susceptible to capture in California's Central Valley. In addition to the woeful state of Central Valley and Bay-Delta fisheries as described above, the scarcity of remaining water supply options is testament to the existing overallocation of Central Valley water. The elaborate nature of the hypothetical mechanisms by which the Sites project purports to provide environmental benefits, not to mention water supply benefits, is testimony to how far water developers will go to dredge the bottom of the barrel to eke out the last usable assets of a system that is fundamentally tapped out.

The State Water Project (SWP) and Central Valley Project (CVP), to which the Sites Project presents itself as fundamentally an opt-in augmentation,[102] have made full contract deliveries only in 2023, the wettest of water years.

The 2018 California Water Plan Update, which the Sites Application cites as the "coordinated" plan with which the Application is consistent,[103] contains the following definitions:

> "**Sustainability**: Sustainability of California's water systems means meeting current needs — expressed by water stakeholders as public health and safety, healthy economy, ecosystem vitality, and opportunities for enriching experiences — without compromising the needs of future generations."
>
> "**Water demand:** The desired quantity of water that would be used if the water were available and if a number of other factors, such as price, did not change. Demand is not static."

[102] *See, e.g.,* the proposed places of use, which the Petition for Assignment summarizes at p. 2 of 8 as "generally consistent with the SWP and CVP places of use."
[103] Petition for Assignment, p. 2.

"**Water supply reliability**: Percentage of the time water supplies meet demands." [104]

Thus, in this "Plan," "reliability" does not mean having a demand for water that "California's water systems" can reliably meet. It means meeting demand as often as possible even if that demand is beyond the means of the systems to consistently provide it. It is a plan for managing water debt whose foundational definitions assume overallocation of California's water.

And so it is with Sites. The Sites project is the water equivalent of burning the furniture for heat in order to stave off a day of reckoning.

The Application also claims consistency with the 2020 "Water Resilience Portfolio,"[105] a document that also assumes as a given condition the systemic overallocation and overappropriation of California's water.[106] As cited in the Application, the 2020 Portfolio promotes the Sites project. This promotion has a twisted logic. If one accepts the need to feed demand that can never be fully met, then one arrives at the conclusion that capturing more water is always a net benefit.

In August 2022, the Newsom administration published "California's Water Supply Strategy: Adapting to a Hotter, Drier Future.[107] This latest vision of management of California's water includes some mention of demand management, but only for municipal, industrial, and domestic use, at most a quarter of California's use of developed water. Regarding agricultural demand, the 2022 "Strategy" acknowledges reductions indirectly due to attrition in response to the 2014 Sustainable Groundwater Management Act (SGMA), but proposes no further regulatory measures or policies, leaving the market to randomly and stochastically weed out individual water users.[108] This market approach is the opposite of a coordinated plan. It provides nothing to rationalize future water use. It also cruelly and irresponsibly offers no planning for providing alternative economic pathways for the communities most affected by constriction of the farm economy.

The Application and Petition for Assignment are also entirely consistent with this third flawed 2022 "Strategy." Most notably, the Sites Project is in substantial part a market-based project where "partners" buy shares of reservoir storage and then deploy those shares at their

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[104] DWR, *California Water Plan Update 2018: Managing Water Resources for Sustainability*, definitions shown on pp. xiv-xv. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf.

[105] State of California, 2020 Water Resilience Portfolio in Response to the Executive Order N-10-19 (July 2020). Available at: https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Water-Resilience/Final_California-Water-Resilience-Portfolio-2020_ADA3_v2_ay11-

[106] For analysis, see http://calsport.org/news/wp-content/uploads/CSPA-response-Draft-Water-Portfolio-020620.pdf.

[107] Available at: https://cawaterlibrary.net/document/californias-water-supply-strategy-adapting-to-a-hotter-drier-future/

[108] *Id.*, pp. 13-15.

individual discretion.[109] Deciding how to use scarce water resources based on an every-entity-for-itself operating regime is neither coordinated nor in the public interest.

In sum, none of the plans with which the Sites project is consistent can be rationally described as "a general or ***coordinated*** plan looking toward the development, utilization, or *conservation* of the water resources of the state." (Water Code § 10500; emphasis added.)[110]

A plan that accepts a situation in which water demand is far beyond the ability of the state's resources to supply it is not a coordinated plan at all. It is the avoidance of a plan.

A plan that leaves the market to randomly weed out water use without consideration of the social consequences is, equally, not a coordinated plan. It is the avoidance of a plan. It is also inequitable.

A plan that supports developing water at the expense of the environment in preference to reducing aggregate agricultural demand in a well-considered, organized, systematic, and socially responsible manner is not a coordinated plan. It is a deferral of an absolutely necessary plan to achieve some semblance of a balanced state water budget and to make sure that the uses of water that continue achieve the greater social good. Adding new massive diversions of water to feed an already overallocated water budget does not look toward the conservation of the water resources of the state, even in the old-timey sense in which conservation meant to make water available for use. It's more like using a home equity line of credit to pay the mortgage. While such a strategy makes resources available in the short term, it only increases the long-term debt.

The State Water Board should deny the Application and Petition for Assignment for the Sites Project because they are inconsistent with a coordinated plan for the conservation of the state's water resources (Water Code § 10504,)

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[109] See RDEIR/SDEIS at ES-10: "Water would be held in storage in the reservoir until requested for release by a Storage Partner. Water releases would generally be made from May to November but could occur at any time of the year depending on the Storage Partner's need and system conveyance capacity."

[110] We note that the Attorney General's 1955 Opinion on state-filed applications analyzed how Water Code § 10500 does not refer to any *specific* plan, but rather to "a plan:"

> [S]ection 10500 continues to authorize the filing of applications on unappropriated water which, in the judgment of the Department of Finance, "is or may be required" for "the whole or any part of a general or coordinated plan." In the light of the background and the date of enactment of this section, it is not confined in its application to any particular "plan,". as, for example, the specific "State Water Plan" defined. in section 10000 and adopted and approved by section 10002.

C. The State Water Board Should Reject the Application and Petition for Assignment Because They Will Perpetuate the Overallocation of the State's Water, Reward Poor SWP and CVP Reservoir Management, and Provide SWP and CVP Contractors with Water Supply Benefits Exempt from Requirements to Protect the Public Trust.

Even if, in the Orwellian world of California's water, the State Water Board accepts the three plans cited above as "coordinated" plans, the Board should nonetheless reject the Application ***as well as*** the Petition of Assignment because granting them would not be in the public interest. They are part of a vision for California's water in which capturing more water is purportedly part of the solution to the structural imbalance between demand and supply. In fact, they would, if granted, perpetuate and compound the overallocation of the state's water. Meeting unreasonable demands of some entities near the front of the line, slightly more frequently or slightly more fully, in any given year, just whets the appetite of those who miss out.

There is an overwhelming public interest in aligning water demand with the responsible management of what nature provides. Scalping some of the few remaining high flows left in the Central Valley system, in order to backfill dry-year deficits created by excessive water deliveries in all years, is not responsible management. It is also not a reasonable use of water under Article X, Section 2 of the California Constitution (Water Code § 100).

Stated differently, the irresponsible depletion of storage in SWP and CVP reservoirs supplies an unsustainable level of agricultural water deliveries. Such poor management will not be solved by creating additional storage. Even less will it be solved by making such storage available as private shares to (primarily) SWP and CVP contractors that can afford the high cost of water stored in Sites Reservoir. On the contrary, more storage for SWP and CVP contractors would reward and valorize the SWP and CVP's bad management of existing storage.

In part, the Sites project will shift the costs for such bad management of existing reservoirs to urban agencies that the SWP and CVP cannot reliably supply.

In other part, the Sites project will be a water supply slush fund for DWR, Reclamation, and the state and federal water contractors: a dry-year and drought water supply with no ***requirements*** to share the benefits of increased storage to better manage the protection of public trust resources. The claimed benefits of Sites Reservoir to fish and wildlife are thus speculative and without basis in fact.[111] The ascribed benefits could be achieved by the Board's exercise of existing authority under the reasonable use and public trust doctrines, to require the SWP and CVP to operate their reservoirs to protect fish and wildlife, without construction of a harmful new reservoir.

[111] See, e.g., Petition for Assignment, p. 5 of 8: "The Project could result in an improvement in water quality in parts of the Project area. Such improvements could assist with Delta outflow and seawater intrusion, aid in achieving cold-water benefits in the upper Sacramento River, provide flows to move fish food into the Sacramento River and Delta, and create in-reservoir habitat for warm-water fish species." There is nothing in the Application that requires any of the measures that "could" provide benefits, except perhaps the experimental token release of small amounts of water into the Yolo Bypass for the purported benefit of Delta smelt.

As of May 19, 2023, DWR and Reclamation have a combined allocation of 26.4% of Sites storage. Metropolitan Water District has an allocation of 22.1% of Sites storage. Altogether, DWR, Reclamation, and their contractors have well over 90% of the storage allocation in Sites Reservoir.[112] Any hypothetical benefit would be achieved by joint reoperation of, or exchange between, Sites and a SWP or CVP reservoir, with the goal of no net loss of water to water contractor deliveries. And unlike the SWP and CVP, which have extensive (though still inadequate) responsibilities for protection of public trust resources and Delta salinity control, almost all the alleged "environmental benefits" of Sites are wholly discretionary.[113]

The voluntary paradigm of Sites Reservoir and its touted "flexibility" is neither specifically nor generally in the public interest. It is consistent with the sorry fact that the State Water Board is considering permitting the Sites project potentially using a proposed (but incomplete) "voluntary agreement" as a surrogate for a water quality control plan in evaluating water availability. In some regards, allowing voluntary mitigations using Sites is worse, because a water rights permit is a long-term regulatory requirement that has no requirement for periodic review. Allowing the massive Sites project to deliver environmental protection on a discretionary basis without clear enforceability would carry the current Board's policy of preferring voluntary solutions to a new low. It would be far, far outside the public interest. It would also unlawfully delegate the Board's public trust and reasonable use responsibilities to other entities.

D. Sites Reservoir Will Institutionalize a Speculative Water Market, Contrary to the Public Interest.

As the latest and perhaps the last major addition to surface storage in California's Bay-Delta watershed, the Sites Project is set up to be the stored water supply of last resort. It is designed for deliveries in dry years and dry year sequences. Various commenters have described Sites as an "insurance policy" for dry years. However, it is not set up as a reserve that public officials allocate in dire circumstances based on need or on the public good. Sites, rather, is structured as a series of private holdings, with limited general governance of the Authority, available for use based on private economic decisions.

The Sites Project is explicitly structured to facilitate water transfers (sales). Appendix C to the January 6, 2023 Water Right Application Supplement describes the goals as follows:

> The Authority seeks a water right permit that will provide the Authority and its Storage Partners as much flexibility as possible to (1) allow for changes in Sites Storage Partners and (2) allow for Storage Partners to sell their water, to other Storage Partners and/or entities within the place of use, to assist in paying for their investment.[114]

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[112] See Sites Joint Reservoir Committee & Authority Board Agenda item 2.1, May 19, 2023. Available at: https://sitesproject.org/wp-content/uploads/2023/05/02-01-Allocations-of-Storage-Space.pdf.

[113] *See, e.g.*, list of purported project benefits and how many are hypothetical or related to process in Joint Reservoir Committee & Authority Board, Agenda Item 3.1, May 19, 2023, Status Briefing on the Final EIR/EIS, Part 3, Att. A, p. 1. Available at: 03-01 Final EIR-EIS Status Update Findings and SOC.

[114] Appendix C to the January 6, 2023 Water Right Application Supplement (Supplement App. C), p. 2.

In part, speculative water sales by Sites would be assured simply because they are assumed as part of the repayment mechanism for a $4.8 billion project. This use of water sales to pay for water infrastructure is in itself not in the public interest.

The extensive place of use proposed in the Sites Application is specifically designed to support water sales:

> Although they will be encouraged to sell to other Storage Partners first, and possibly to wait listed agencies second, these sales may extend to water users that are not Storage Partners but are located within the Authority's water right place of use. This is part of the justification for including the extent of the Central Valley Project (CVP) and State Water Project (SWP) service areas and the associated Points of Diversion and Points of Rediversion for the projects.[115]

As with the general emphasis on voluntary measures to provide Sites's alleged "environmental benefits", the Sites place of use also proposes the benefits of SWP and CVP structure without accompanying responsibilities. Sites thus would get the benefits of an enormous place of use and points of diversion, effectively building water transfers into the water right itself. The inclusion, as the place of use, of approximately 32,691,036 acres of land in 31 counties[116] facially conflicts with Water Code § 1260's requirements for a water right application to state the proposed place of diversion (subsection (e)) and the place and time where it is intended to use the water (subsection (f)). Such subversion of basic elements of water rights administration is contrary to law and not in the public interest.

Moreover, by its very existence, Sites Reservoir will increase the cost of water generally. The cost of Sites water per acre-foot of water delivered to the project's outfall into Sacramento River is estimated at $800.[117] With a calculated 23% water loss of carriage water alone for water delivered south of Delta,[118] the price tag to the turnouts of water buyers south of Delta is close to $1100 per acre-foot. Even water provided at cost or at small percentage markups will price many agencies out of the market, including urban agencies in less wealthy areas. This high-end market will inequitably place new storage benefits of Sites out of the reach of disadvantaged communities.

Equally if not more concerning is how the water market created by Sites would place upward pressure on the costs of transfer water generally.

For example, the Sacramento River Settlement Contractors are at present one of the major sources of water transfers. The Sites project will allow Sacramento River Settlement Contractors a convenient mechanism to continue the abusive business model of selling substantial amounts of water in (primarily) drier water years. It will give them more water to

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[115] *Id.*, p. 3.
[116] *See* Sites Water Right Application, January 6, 2023, p. 41.
[117] Sites Authority presentation to NGOs, confirmed by independent analysis by protestants.
[118] *See* Sites Authority, Joint Reservoir Committee & Authority Board, Agenda Item 3.2, April 21, 2023, "Reservoir Losses and Available Storage." Available at: https://sitesproject.org/wp-content/uploads/2023/04/03-02P-Conveyance-Storage-Loss.pdf.

sell, increasing an existing overallocation of water that is facially evident from their substantial serial water sales.[119] The Sites project will also reduce the administrative requirements for transfers by the Sacramento River Settlement Contractors, since, as noted above, the place of use for the Sites water rights is largely identical to the combined places of use of the SWP and CVP.[120] Sites will yield a further systemic windfall to the Sacramento River Settlement Contractors.

The institutionalization of a water market due to the structure of a water right, and the pressure such structure would place to increase revenues from water sales, are not in the public interest.

E. The Sites Reservoir Project Will Favor Wealthy Water Districts over Disadvantaged Communities.

The cost of the Sites Reservoir project is currently estimated to be $4.8 billion, with 27% of that amount coming from State and Federal funds contributed by taxpayers.[121] Even with the taxpayer subsidies, the high cost of building the reservoir, the ongoing debt service, operations and maintenance costs, combined with the uncertain water availability, indicates the average cost per acre-foot of water for the subscribers will be high, and will almost certainly increase during times of shortage.

The project members were able to obtain participation percentages by contributing to the enormous cost of the Project. The users that will benefit the most from the Project will be municipal and industrial agencies that can afford the cost. In addition to municipal and industrial uses, there are also large allocations going towards agricultural users with high returns on investment. The crops that will be irrigated are some of the top exports for the state, so the water that is being used is not necessarily going to be used to feed the people of California.[122] Poorer, historically underserved areas, which often have large disadvantaged communities, cannot afford

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[119] The Sacramento River Settlement Contractors would not serially sell large quantities of water if they actually needed the water for use in their service area.

[120] In this context, it is already unclear, in Critically Dry years and in dry year sequences, what the basis in right for Sacramento River Settlement Contractors diversions (and transfers) actually is. There is no clear accounting of whether their diversions are under CVP water rights or under the Sacramento River Settlement Contractors' underlying riparian and/or pre-1914 rights. Since one of the proposed aspects of the Sites project is "exchanges" with the SWP and the CVP, future water sales conducted by the Sacramento River Settlement Contractors will be further clouded as to their basis in right and their regulatory path.

[121] Sites Project 2023 Draft Plan of Finance Update, p4 Table 2 Sources of Financing https://sitesproject.org/wp-content/uploads/2023/05/03-02-Plan-of-Finance-Update.pdf

[122] *See* California Department of Food and Agriculture (CDFA) statistics on farm exports. Available at: https://www.cdfa.ca.gov/Statistics/PDFs/2022_Exports_Publication.pdf. *See also* Application, Purposes of Use (unnumbered pages), which provide a breakdown of "Irrigation uses," as follows (2022 export ranking from CDFA stated at the end of each line):

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- Rice, 237,100 acres, 1,185,535 af/yr (top 10 ag commodity) (#6 export)
- Nuts/Deciduous, 167,300 acres, 721,029 af/yr (top 10 ag commodity) (#1 almonds, #3 pistachios, #5 walnuts)
- Dates/Citrus 99,000 acres, 433,620 af/yr (#9 oranges, #17 lemons #28 tangerines)
- Grapes 74,000 acres, 210,160 af/yr (top 10 ag commodity) (#7 table grapes)

to buy into the Sites project. They will continue to suffer as the wealthy districts, agencies, and other water users store, and buy and sell, water.

For example, Coalinga, California is a city in the Central Valley that ran out of water in the last major drought that affected the state. It is a small town in which over 50% of the residents are people of color. In 2022, Coalinga paid $1.1 million to get 600 acre-feet of water from another water district, after Coalinga's allocation from San Luis Reservoir was cut by 80%.[123] Fortunately, the Department of Water Resources stepped in to help the community, so that its water users did not have to pay the extreme cost of having water imported for essential needs like drinking water and bathing.[124] Coalinga does not have the resources to buy into the projects like Sites Reservoir and acquire water for its citizens despite the extreme need.

For small towns and cities like Coalinga, where there are large populations of people of color and/or disadvantaged communities, the inability to pay shuts them out of projects like Sites. Sites allocates no water to entities that do not have the resources to afford a portion of Sites Reservoir's expensive water. New water supply projects, which for reasons of cost as well as environmental impacts should not include massively expensive new surface storage, should prioritize water users that who are suffering most at the hands of inequitable statewide water distribution.

F. Granting Sites Water Rights Would Violate Board Policy on Racial Equity.

The water rights system in California was established during a time in history when the ability to obtain water rights was limited by race and property status, and specifically excluded indigenous peoples and people of color. The water rights system is largely based on the "first in time, first in right" doctrine of property law. However, this doctrine has created a system intertwined with racist and inequitable methods of distribution. Tribes of California who are the indisputable first occupants of the land and first users of the water have been largely excluded from owning water rights.

The water rights system has carried on its inequitable distribution for generations. A recent analysis estimates that 92% of leaders of California water agencies are white, and that 91% of water rights holders are likely white.[125] The State Water Board has acknowledged that its programs were "established over a structural framework that perpetuated inequities based on race."[126] This is a major issue for disadvantaged communities, Tribes, and fish-dependent people

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[123] *See* https://www.cnn.com/2022/11/01/us/california-water-cost-profiteering-climate/index.html#:~:text=The%20restriction%20left%20Coalinga%20short,300%20Olympic%2Dsized%20swimming%20pools.

[124] https://water.ca.gov/News/News-Releases/2022/Nov-22/DWR-Provides-Funding-to-City-of-Coalinga-for-Emergency-Water-Purchase.

[125] *See* "Who makes decisions about California's water?: A data-based look at the race and gender of the people who control California's water at the state, local, and individual level," Fidell and Shipman, 2023. Available at: https://www.restorethedelta.org/wp-content/uploads/2023-Fidell-Who-Makes-Decisions-about-Californias-Water.pdf

[126] *See* State Water Board Resolution 2021-0500, p. 2. Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2021/rs2021_0050.pdf.

who are excluded from decision-making processes that will impact the land, water, and species that they rely on.

In November 2021, the State Water Board adopted its Racial Equity Resolution, which directed staff to develop a plan of action to advance racial equity within the Water Boards.[127] The resulting Racial Equity Action Plan was presented to the Board in January 2023. It is a compilation of goals, actions, and metrics intended to advance efforts to create a future where the Board equitably preserves, enhances, and restores the state's water resources and drinking water for all Californians, regardless of race.[128] The Board committed to making racial equity, diversity, inclusion, and environmental justice central to its work, and committed to center in its work and decision-making on black and indigenous people of color, who are disproportionately represented in the most vulnerable communities, while ensuring the full benefits of the Board's programs for all people.[129]

The water rights system in California is institutionally racist. Granting new water rights before making Tribes and other groups whole would perpetuate this institutional racism and violate the Board's Policy on Racial Equity.

Sites Reservoir water would be controlled by a privileged few, with little or no benefits directed to black people, indigenous people, and other peoples of color. It would also further harm these and other disadvantaged groups by commodifying water through water sales that the project's proponents claim are integral to project feasibility. Granting Sites water rights would violate the State Water Board's Policy on Racial Equity because it would perpetuate and, given its magnitude, solidify the historic imbalance of power in the use of California's water.

G. Sites Reservoir Will Incentivize the Construction of the Delta Conveyance Project.

Sites Reservoir will incentivize the construction of DWR's proposed Delta Conveyance Project because the proposed Delta tunnel would create conditions more favorable for movement of water from Sites Reservoir to project partners or transfer recipients south of Delta.

The Sites project assumes a conveyance loss of 23% for "carriage water" through the Delta.[130] Carriage water is a reduction of water allowed for export in order to account for water lost as it crosses the Delta. Water that did not cross the Delta to reach the head of Delta export facilities in the south would at least presumably not be subject to carriage water reductions. Water conveyed through a north Delta diversion facility would thus increase the yield for Sites water moved south of Delta by about 30%.

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[127] *Id.*
[128] *See* State Water Board, Racial Equity Action Plan (2023).
[129] *See* State Water Board Resolution 2021-0500, p. 7.
[130] *See* Sites Authority, Joint Reservoir Committee & Authority Board, Agenda Item 3.2, April 21, 2023, "Reservoir Losses and Available Storage," *op. cit.*

In addition, the requested season of allowed deliveries from Sites to points south of Delta is July through November,[131] consistent with the transfer window allowed in the 2019 LTO BiOp. Construction and operation of the proposed Delta Conveyance Project would allow an expansion of this window for Sites south of Delta deliveries, for two reasons. First it would add conveyance capacity for south Delta exports generally. Second, it would allow exports without constraints that limit the season of deliveries, because those constraints are largely tied to impacts of the south Delta export facilities on fish in the Delta.

In 2016, Jeffery Kightlinger, at the time General Manager of the Metropolitan Water District of Southern California (which has the single largest allocation of water among all Sites project partners), opined that Sites Reservoir without a north Delta intake for DWR export facilities had minimal value for exporters, stating:

> Sites Reservoir from the MWD perspective looks like a good sound project. The problem is, for us, it's north of the Delta. And right now we can't move water through the Delta because we were so restricted in our ability to move water, that it wouldn't provide any real benefits to anyone south of the Delta. ... I say well, the problem is I don't know why I would fund it unless I could get some of that water and I can't actually get the water unless we build a conveyance system.[132]

Perhaps as important as the physical opportunities that the proposed Delta Conveyance Project would provide deliveries from Sites Reservoir to points south of Delta is the supply-side way of approaching California's water issues that both projects promote. Construction of one mega-project with the illusory goal of increasing water supply reliability in a grossly overallocated water supply system creates momentum to construct another mega-project, because it frames the goal as achievable in the absence of large-scale demand reduction.

H. It Is Not in the Public Interest to Grant New Water Rights for Use by the SWP, the CVP, and their Contractors while Petitions to Extend Time for Existing SWP and CVP Water Rights Permits Have Lain Dormant for Thirteen Years.

DWR petitioned for extension of time on its existing water rights permits for the SWP in 2010. Reclamation petitioned for extension of time on its existing water rights permits for the CVP in 2009. Neither entity has issued a Notice of Preparation for CEQA review of the requested extensions or demonstrated any other progress in completing environmental review for the requested permit extensions. Neither entity has released any public accounting of water used under each individual permit. Neither entity has pursued protest dismissal since informing protestants more than a decade ago that progress would come in the form of completing environmental review for the Bay-Delta Conservation Plan, which never happened.

Now, as partners in the Sites project, DWR, Reclamation, and their contractors ask the State Water Board to go to the head of the line in processing the Application for a new reservoir.

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[131] Final EIR Status Briefing, p. 3.
[132] Interview with Jeffery Kightlinger, Maven's Notebook, January 31, 2016. Available at: https://mavensnotebook.com/2016/07/31/a-conversation-about-water-with-jeffrey-kightlinger/.

The jump in line is inequitable. It also fails to consider that it is within the purview of State Water Board to require additional permit terms for the SWP and the CVP as part of permit extensions. New permit terms on the existing SWP and CVP permits may limit the availability, and/or increase the cost of water for the Sites project.

The State Water Board should not preferentially devote its limited administrative resources to holding hearings on the Sites Project until the State Water Board has completed proceedings to address the petitions to extend time on the permits for the SWP and the CVP.

V. The Application and Petitions Are Contrary to Law.

A. Unless Conditioned to the Contrary, the Application and Petition Are in Conflict with a Water Quality Control Plan Established Pursuant to Law (Water Code § 10504).

Temporary urgency change petitions (TUCPs) for Delta operations have become the default in sequential dry years.[133] As currently proposed, the Sites project would allow collection of water to storage by state and federal contractors, and would allow augmented water supply deliveries to state and federal contractors, during conditions when Delta water quality standards are weakened due to a TUCP.

Water Code § 10504 allows assignment of a state-filed application only if it is "not in conflict … with a water quality control plan established pursuant to law." It is DWR and Reclamation that request routine TUCPs for Delta operations in Critically Dry years and in dry year sequences. It is DWR, Reclamation, and the state and federal contractors that are both the beneficiaries of such TUCPs and the overwhelming holders of storage rights in Sites Reservoir. A Sites permit issued without limitations on Sites operations when TUCPs for Delta operations are in effect would effectively allow the SWP and CVP and their contractors an instant avoidance mechanism, negating compliance with the Bay-Delta Plan and thus with this aspect of Water Code § 10504.

It is also the contention of protestants that the Sites Application and Petition for Assignment must be evaluated under different prospective outcomes of the update of the Bay-Delta Water Quality Control Plan that is currently underway. The Board has acknowledged since at least 2010 that flows into and through the Bay-Delta estuary are inadequate to support native fish.[134] The Board must at least evaluate the Sites Application and Petition for

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[133] See State Water Board's TUCP webpage, which shows TUCPs in 2014, 2015, 2016, 2021, 2022, and even 2023. https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/index.html. Moreover, it is our understanding that pending biological opinions for the operations of the SWP and CVP will assume TUCPs in dry-year sequences.

[134] *See, e.g.*, Delta Flow Criteria Report, p. 5. ("Recent Delta flows are insufficient to support native Delta fishes for today's habitats.")
See also Scientific Basis Report, p. 1-4. ("It is widely recognized that the Bay-Delta ecosystem is in a state of crisis.")
See also Framework, pp. 5-6. ("Populations of native aquatic species in the Bay-Delta watershed have shown significant signs of decline since the last major update and implementation of the Bay-Delta Plan in the 1990s. …

Assignment under requirements that are more likely to protect fish and wildlife, and public trust resources generally. The State Water Board partially acknowledged this need in a letter from Erik Ekdahl, Deputy Director, Water Rights to Alicia Forsyth, Sites Authority, dated August 26, 2022, requesting, "quantitative estimates of the amount of water that could be reasonably diverted given the proposed project's diversion capacity and other known or reasonably foreseeable operational constraints and instream flow requirements, including proposed updates to instream flow and Delta outflow objectives in the Bay-Delta Plan."[135]

Protestants further note that while the immediate concern of Mr. Ekdahl's letter was the accuracy of a water availability analysis, this issue did not go exclusively to whether there was ***some*** water available for appropriation. Rather, it went to the public interest in the economic viability of the project, "which could have implications for the economic viability of the project for investors, including the State of California."[136]

B. The Petitions for Releases from Priority Require either Denial or Conditioning to Comply with Water Code § 10505.

The Sites Authority has submitted Petitions for Release from Priority of State Filed Applications A025513, A025514, A025517 (Remaining), A022235, A023780, and A023781 in favor of the portion of State Filed Application A025517 assigned to Sites Project Authority (hereinafter, collectively, Petitions for Release from Priority).

The Petitions for Release from Priority affirm that the Sites Authority has entered into an MOU with Colusa County to assure that the Sites Project will not deprive Colusa County of water needed for that county's development. In addition, several Colusa County entities have purchased allocations of storage in the Sites Project.

However, regarding the other counties from whose state filings the Sites Authority seeks release from priority (Glenn, Tehama, and Shasta), the Petitions for Release from Priority present no assurances that such release would not deprive those counties of water needed for their development. There is also no provision, as for Colusa County, that water in Sites would be made available at a reasonable price for such development.

To conform with Water Code § 10505, any release from priority in favor of the Sites project would require either a term that allowed the Board to revisit such release upon a showing of need for water originating in Glenn, Tehama, and/or Shasta counties for the respective development of those counties, or else a clear mechanism and terms that would make water from Sites Reservoir available for such development.

The Petitions for Release from Priority rely on an estimate that alternative sources of water would be available to Glenn, Tehama, and/or Shasta counties even if Sites is built. While

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While there are also other factors involved in the decline of these species, water diversions and the corresponding reduction in flows those diversions cause, are significant contributing factors.")

[135] Letter is included as part of the Sites Application Package posted on the State Water Board's eWrims web feature. Quote is from p. 3.

[136] *Id.*, p. 2.

that addresses water availability, it does not address the proper priority of water for counties of origin in preference to water for use outside counties of origin, and most pointedly, of water for export. Priority is, after all, the point of a release from priority.

If the State Water Board denies the assignment of State-Filed Application A025517 to the Sites Authority, it should deny the Petitions for Release from Priority. If the Board grants the assignment of State-Filed Application A025517 to the Sites Authority, it must comply with Water Code § 10505 by either denying the Petitions for Release from Priority from state-filed applications filed for Glenn, Tehama, and/or Shasta counties, or by conditioning such releases from priority to assure the eventual priority of any state-filed applications for water that may be needed for the development of those counties.

C. The Sites Project Would Violate Delta Reform Act by Increasing Reliance on the Delta for California's Water Supply.

Water Code § 85021 (part of the 2009 Delta Reform Act) states:

> The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts.

As discussed above, a substantial majority of the water supply benefits of the Sites project are allocated to and destined for entities south of Delta. Conveyance to these entities requires export through the SWP and CVP export facilities. The Sites project is a massive export scheme that will increase Delta exports primarily in drier years, when under existing and likely future requirements environmental protections in the Delta are weak. Sites's reliance on exports stands in clear opposition to the Delta Reform Act's stated policy of reducing reliance on the Delta.

D. Unless Conditioned, Diversions to Sites Reservoir Could Violate the Basin Plan and the Clean Water Act.

The Central Valley Basin Plan requires that water temperature in the Sacramento River between Red Bluff and the City of Sacramento not exceed 68ºF to the extent feasible.[137] Diversion to Sites Reservoir when the water temperature at Hamilton City exceeds 65ºF is likely to increase the length of river that exceeds the Basin Plan's numeric standard. It is feasible not to divert water to Sites Reservoir. Thus, diversions that increased the frequency with which, or length of river in which, water temperatures downstream of Hamilton City exceeded the Basin

[137] The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, Fifth Edition, Revised May 2018 (with Approved Amendments), p. 3-14: ("The temperature shall not be elevated above 56°F in the reach from Keswick Dam to Hamilton City nor above 68°F in the reach from Hamilton City to the I Street Bridge during periods when temperature increases will be detrimental to the fishery.")

Plan standard of 68ºF would violate the Basin Plan. Such diversions would also violate anti-degradation requirements of the Clean Water Act.

Such effects to water temperature would likely not occur until May or June in any given year. This is an additional reason why the season of diversion for the Sites project should end on April 30 of each water year. The specific beneficial uses this would protect would be to maintain suitable (COLD) water temperatures for migrating juvenile fall-run and spring-run Chinook salmon, adult winter-run salmon, adult and juvenile green sturgeon, and adult and juvenile white sturgeon.

E. The Bureau of Reclamation's Participation in Sites Would Not Conform to Executive Order 13990.

The Bureau of Reclamation is a federal agency participating in the Sites project. As a federal agency, Reclamation must adhere to federal laws, including federal executive orders. Executive Order 13990 requires federal agencies to prioritize environmental justice as part of agency actions.[138] The RDEIR/SDEIS noted that all action alternatives will have substantial adverse effect on minority populations and low-income populations.[139] As described above, the Sites Project would have adverse impacts on tribal uses, would be inaccessible due to cost to disadvantaged communities, would tend to increase costs for water generally, and would directly and indirectly fail to promote environmental justice for numerous other reasons. Project impacts to minority and low-income populations would thus violate federal Executive Order 13990.

VI. Conclusion: The State Water Board Should Deny the Application and Petitions.

The State Water Board should deny the Application and the Petitions. In the event that the State Water Board issues a permit for the Sites Reservoir project, it should condition the permit as described in the conditions for protest dismissal below.

VII. Conditions under Which the Protest May Be Dismissed.

A. The application and petitions should be denied.

B. If the application is granted, the petitions should be denied.

1. If the application is granted, the priority date assigned should be 2022. For the reasons stated above, Application if granted would be in conflict with a general and coordinated plan for the use of the state's waters. Thus, this application does not qualify for assignment of a state filing.
2. If the application is granted, the petitions for release from priority should be denied. There is no basis to give priority in perpetuity to a project

[138] *See* Executive Order 13990, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (Jan. 25, 2021), section 1. Available at: https://www.federalregister.gov/documents/2021/01/25/2021-01765/protecting-public-health-and-the-environment-and-restoring-science-to-tackle-the-climate-crisis.

[139] RDEIR/SDEIS, "Ch. 30: Environmental Justice and Socioeconomics," p. 2-5.

founded largely on water deliveries and water sales south of Delta over any future applications for water rights for local use.

C. If the application is granted, permit terms should include the following:

1. The season of diversion shall be from December 1 through April 30. If the requested season of diversion from September 1 through June 15 is granted, the flow requirements for December shall apply in the months of September, October, and November, and the flow requirements for April shall apply in May and June 1-15.
2. No diversions to Sites Reservoir shall be allowed when the Net Delta Outflow Index is less than 65% of the total calculated unimpaired outflow from the Delta.
3. No diversions to Sites Reservoir shall be allowed unless each of the following flow values are met or exceeded in the specified months at the designated compliance points on the Sacramento River. In cases where requirements overlap, all requirements must be met before diversions may occur.
    a. During the months of December and January, the minimum flow value at the Red Bluff gage, Hamilton City gage, and Wilkins Slough gage shall be 14,125 cfs.
    b. During the months of January, February, and March, the minimum flow value at the Red Bluff gage, Hamilton City gage, and Wilkins Slough gage shall be 24,720 cfs.
    c. During the month of April, the minimum flow value at the Red Bluff gage, Hamilton City gage, and Wilkins Slough gage on shall be 10,700 cfs.
    d. At no time shall diversions occur unless flow at the Freeport gage meets a minimum flow value of 35,000 cfs.
4. No diversions to Sites Reservoir shall be allowed when the Net Delta Outflow Index is less than 44,500 cfs in April and 42,800 cfs in January through March.
5. No diversions to Sites shall be allowed in December and January in a water year that follows a season in which temperature dependent mortality of Sacramento River winter-run Chinook salmon eggs was greater than 30%, or in which egg to fry survival of winter-run Chinook salmon was less than 25%.
6. No diversions to Sites shall be allowed in a year that follows a season in which releases from storage cause a total stage change in the Sacramento River at the Keswick Dam gage from October 1 through December 31 greater than 1.5 vertical feet.
7. No diversions to Sites shall occur when TUCPs for Delta water quality are in effect.
8. No deliveries from Sites south of Delta, except for reasons of health and safety, shall occur when TUCPs for Delta water quality are in effect.

9. The Department of Water Resources and the Bureau of Reclamation shall prioritize the use of the water they have stored in Sites Reservoir to achieve the requirements and intent of Water Right Order 90-5, in preference to making water available for delivery to project partners.
10. The Sites Authority has proposed a permit term to preclude diversion or rediversion to Sites Reservoir of water sourced in the Trinity River.[140] Protestants submit modifications to the proposed permit term, shown in strikethrough for proposed deletions and underlined for proposed additions.

    The Sites Project's diversions to storage under this Permit shall not include the diversion or rediversion of Trinity River water (water diverted by the Bureau of Reclamation from the Trinity River watershed into the Sacramento River watershed pursuant to its water rights) unless the Trinity River water is abandoned in the Sacramento River and all other diversion criteria in this Permit are met.

    Furthermore, the Sites Project's diversions to storage under this Permit shall not negatively impact <u>current and future</u> Trinity River obligations of the Bureau of Reclamation, including but not limited to those obligations specified in the 1959 Contract between the United States and Humboldt County, the Trinity River Mainstem Fishery Restoration Record of Decision, and the Long-Term Plan to Protect Adult Salmon in the Lower Klamath River, and related obligations in the Bureau of Reclamation's water right permits 11966, 11967, 11968, 11969, 11970, 11971, 11972, and 11973.

11. No diversions to Sites Reservoir shall be allowed at any time that releases from Sites Reservoir are occurring.
12. No diversions to Sites Reservoir shall occur when water temperatures at either point of diversion exceed 65ºF.
13. No releases from Sites Reservoir to the Sacramento River or the Cache Slough complex shall occur when the water temperature of the water discharged exceeds the water temperature of the receiving water.
14. No releases from Sites Reservoir through the Yolo Bypass to Cache Slough shall be allowed when the temperature of the water discharged to Cache Slough exceeds 68ºF.
15. The permit holder must develop a HABs monitoring program in Sites Reservoir and downstream of its discharge to the Sacramento River. The program must be developed jointly with CDFW and staff from the State Water Board. The plan must develop requirements that prohibit discharge of water from Sites to the Sacramento River that increases the concentration in the river of the cell counts of HAB-forming organisms are greater than those in the receiving water.

[140] *See* Sites Water Rights Application Supplement (Jan. 6, 2023), App. H.

16. The permit holder must develop a water quality monitoring and reporting program to continuously monitor and report the metal constituents present in inflows to the reservoir, in the reservoir itself, and in outflows from the reservoir,
17. To reduce methylation of mercury in Sites Reservoir, the permittee shall limit annual reservoir fluctuations according to a schedule developed with staff from the State Water Board, based on the stage/storage curve for the reservoir.
18. The permittee must update its accounting of reservoir greenhouse gas emissions using the best available science and tools, and implement concrete mitigation measures that achieve net zero emissions consistent with the updated accounting, without relying on the purchase of carbon credits or offsets.
19. In order to protect wetlands and terrestrial and avian species in the project area, the permittee, prior to commencement of construction, shall, in consultation with staff from the State Water Board and CDFW, provide accurate species distribution, focused bird surveys, a wildlife connectivity assessment, and aquatic wetland delineations. The permittee shall also, prior to commencement of construction, develop detailed plans to fully mitigate all temporary and permanent impacts of the construction and operation of Sites Reservoir on golden eagles, giant garter snakes, vernal pools, and other species and habitats according to law, including appropriate assurances and performance standards, and implement these plans during and after construction.
20. Prior to commencement of construction, permittee shall submit to the State Water Board plans for the decommissioning of the facilities associated with the project, including a funding plan.

D. If the Petition for Assignment is granted, the Petitions for Release from Priority should either be denied or conditioned. Conditions must either assure the eventual priority of any state-filed applications for water that may be needed for the development of Glenn, Tehama, and Shasta counties, or require availability of water from the Sites project to such counties at a reasonable price.

E. The Applicant shall submit a Reservoir Operations Plan to the State Water Board no less than 60 days prior to commencement of any hearings on the Application and Petitions. Protestants reserve the right to add protest dismissal terms following the release of a Reservoir Operations Plan.

1. The Reservoir Operations Plan shall describe the priorities among project partners, including priorities for timing of releases.
2. The Reservoir Operations Plan shall include an inventory of all expected system losses and the proposed allocation of such losses among project partners

F. Protestants reserve the right to add protest dismissal terms following the release of Final Environmental Impact Report/Environmental Impact Statement, and following the release of a Reservoir Operations Plan for Sites Reservoir.