

Draft, Subject to Change | July 25, 2017

Sites Project Executive Summary

FOR CALIFORNIA'S WATER STORAGE INVESTMENT PROGRAM

Providing high-quality water to enhance the environment,
the economy, and quality of life for Californians



Sites is an innovative, environmentally sound solution to California's toughest water challenges.

With broad statewide support, the Project goes above and beyond in fulfilling the clear Proposition 1 mandate from the People of California, who overwhelmingly said the state needs public benefits from new water storage.

Sites Project Executive Summary

This document summarizes how the Sites Project Authority (Authority) has addressed the California Water Commission’s requirements of the Water Storage Investment Program (WSIP), to provide water supply and eligible public benefits. WSIP funding requirements evaluate the project’s performance in years 2030 and 2070 using a unique climate change scenario.

The Sites Project will make California’s water system more efficient, flexible, and reliable, which will provide local, statewide, and national benefits.

The Project:


- Helps achieve the objectives of the California Water Action Plan
- Provides a substantial supply of high-quality water to support the economy and enhance the environment, particularly in the face of climate change
- Reflects the innovative approach mandated by the people of California under Proposition 1
- Better captures, stores and moves water for the environment, the economy and quality of life for families, farms, and businesses




The Sites Project offers the State of California a significant supply of water to improve conditions for salmon and smelt and comply with the will of California voters.

The Sites Reservoir


Adds **404,411** acre-feet of water per year to California’s water system for...




Drinking Water




Irrigation




Climate Change Resiliency




Increased Water Quality




Recreational Activities



Flood Control




Ecosystem Improvements




Renewable Energy


Preserve cold water pools in existing reservoirs later into the summer months to improve conditions for salmon spawning and rearing




Provide nutrient rich water to the Yolo Bypass to benefit smelt



Stabilize Sacramento River fall flows for salmon



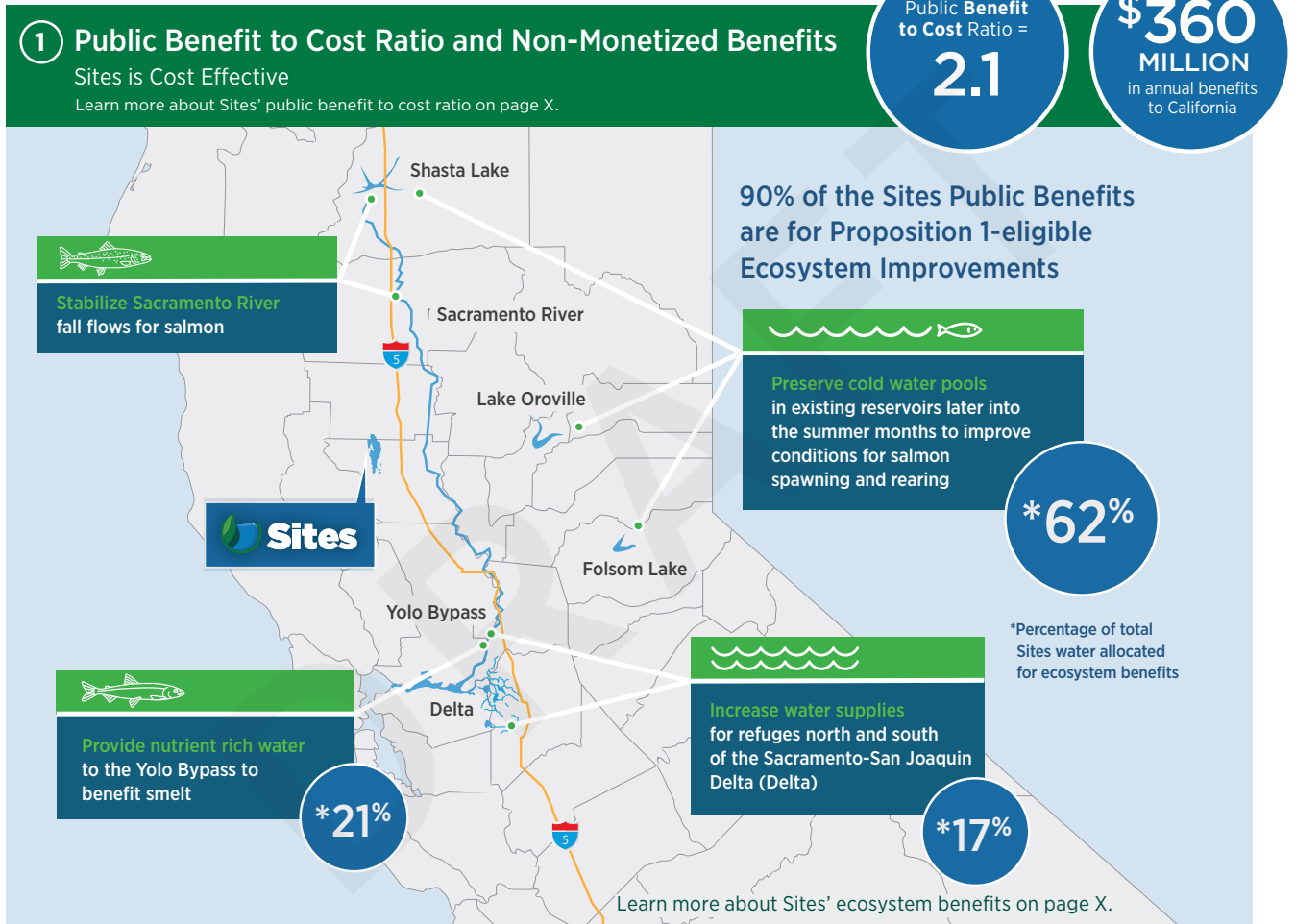
Increase water supplies for refuges and managed wetlands north and south of the Sacramento-San Joaquin Delta (Delta)



The time is NOW to implement bold and strategic water storage options in order to capture and move water for use where and when it’s needed most for the environment, families, farms, and businesses.

By investing in Sites, the California Water Commission has a unique opportunity to invest in the ecological health of the Delta and achieve the will of California Voters.

Sites Works for California and Goes Above and Beyond California Water Commission Scoring Criteria in Four Essential Ways



2 Relative Environmental Value
 Sites Provides Substantial Ecosystem Benefits

No other project provides these **critical environmental enhancements**

Learn more about Sites' relative environmental value on page X.

3 Resiliency
 Sites is Resilient

Sites provides **dedicated water storage** for environmental purposes, **which provides significant benefits with anticipated future climate change impacts.**

Learn more about Sites' resiliency on page X.

4 Implementation Risk
 Sites is Feasible. The real risk lies in **NOT** implementing the Sites Project.

The project meets all criteria for **technical, economic, financial, and environmental feasibility.**

Learn more about Sites' implementation risk on page X.

Why Sites? Sites is the only proposed above ground storage project that combines the public benefits of water storage with the ecosystem benefits of increased environmental flows in the Sacramento River.

Overview

California has grappled with serious water supply reliability and ecosystem challenges for decades. Voters overwhelmingly approved Proposition 1 in anticipation of more frequent drought conditions, a smaller snowpack, heavier rain and flashier storms, aging water infrastructure, and declining ecosystem conditions. **The Sites Project offers the best opportunity for meeting the will of the voters by providing a reliable source of high-quality water to benefit the ecosystem, provide needed water storage, and deliver the substantial public benefits called for in Proposition 1.**

Ideally located in California's largest watershed, Sites includes a new 1.8 million acre-foot (MAF) reservoir offshore of the Sacramento River. Sites would divert flows during major storm events and maximize the state's ability to effectively manage water resources to meet competing needs and priorities. Constructing a major reservoir north of the Sacramento-San Joaquin Delta (Delta) comes with specific benefits not achievable by other proposed storage projects. Sites would help maintain Shasta, Oroville, and Folsom's cold water pools later into the summer months, improve habitat conditions for salmon and smelt, stabilize Sacramento River flows, and enhance Pacific Flyway habitat.

As an offshore reservoir, Sites avoids environmental impacts to aquatic species common with in-stream dam construction. As such, Sites is the only proposed aboveground storage project that combines the public benefits of water storage with the ecosystem benefits of increased environmental flows in the Sacramento River during droughts, when water for the environment has the highest value, and ensures cold water is available during the late summer months to benefit fish.

Sites Project Authority (Authority)

Sites is being developed by several Northern California public agencies who are motivated to build local water sustainability in a way that helps the state meet its overall water system needs. The Authority was formed on August 26, 2010 and is governed by a 12-member Board of Directors representing Sacramento Valley leadership in government and water management.

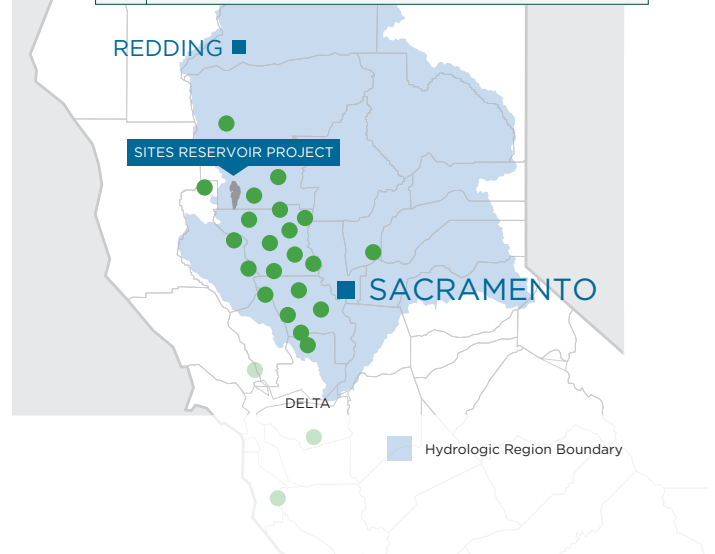
The Authority's Board of Directors is the lead agency working with regional stakeholders and water agencies statewide to advance the construction of the Sites Project. In January 2017, the Authority assumed lead agency responsibilities for ensuring compliance with the California Environmental Quality Act (CEQA) and is working with

the U.S. Bureau of Reclamation (Reclamation), the federal lead agency, to ensure compliance with the National Environmental Policy Act (NEPA). Together, the Authority, Reclamation, and the California Department of Water Resources (DWR) are working in partnership to improve the operation of the state's interdependent water system.

The Authority will be the owner of the Sites Project. It is the Authority's intent that if the state or federal government elect to invest in the Project's construction, in exchange for acquiring water for environmental benefits, the appropriate state and/or federal resource agency would become a project partner participant. By becoming a participant, state and federal agencies would have the same or equivalent status as the water agencies who are participating and funding their share of the Project's costs to improve their water supplies. In short, the Sites Project is based on the beneficiary pays principle.












Authority Board Members and Sacramento Valley Project Participants

	Authority Board Members	Other Sacramento Water Agencies
SACRAMENTO VALLEY WATER AGENCIES	Colusa County	REPRESENTED 4M Water District Cortina Water District Davis Water District Dunnigan Water District LaGrande Water District
	Colusa County Water District	
	Glenn-Colusa Irrigation District	
	Orland-Artois Water District	
	Proberta Water District	
	Reclamation District 108	
	Western Canal Water District	City of American Canyon Carter MWC Garden Highway MWC
	Westside Water District	
	Glenn County	
	Maxwell Irrigation District	
	Placer County Water Authority & City of Roseville	
	Tehama-Colusa Canal Authority	



Sites Eligibility for Proposition 1 Funding

The Sites Project complies with all eligibility requirements for Water Storage Investment Program (WSIP) funding, and achieves California’s co-equal goals of water supply reliability and ecosystem improvement.

WSIP Funding Requirement		Sites Project Compliance
	Eligible Applicant Type (CCR 6006(c)(1)(A)1a)	A Joint Powers Authority will own, govern, manage, and operate the Sites Project (CWC 79759)
	Eligible Project Type (CCR 6006(c)(1)(A)1b)	Sites is a CALFED Surface Storage project (CWC 79751(a))
	Not affect a designated Wild and Scenic River (CCR 6006(c)(2)(A))	Sites would cause no impact
	Consistent with Agricultural and Urban Water Management Plans (CCR 6013(a)(1)(C))	Sites has submitted plans for all participating water suppliers that meet the size compliance threshold
	WSIP Program Cost Share < 50% (CCR 6006(c)(1)(A)2)	The proposed WSIP funding share for Sites is 41% of the total project cost
	The project’s inclusion in an integrated regional water management plan (CWC 6003(a)(1)(A)2)	Sites is identified as a long-term regional priority in the Sacramento Valley Integrated Water Management Plan
	Monetized Ecosystem Benefits > 50% (CCR 6006(c)(1)(A)3)	The ecosystem benefits of Sites are 90% of public benefits
	Provides measurable improvements to the Delta ecosystem or to the tributaries to the Delta. (CCR 6006(c)(2)(B))	Sites provides measurable temperature and flow benefits for fish in the Sacramento River (the largest tributary to the Delta), many of whom migrate through the Delta
	State Water System Improvement (CCR 6006(c)(2)(C))	In year 2030, the operation of Sites to release water on behalf of Reclamation and DWR would add an average 83,000 AF of water in Lake Shasta and 59,000 AF of September storage in Oroville, both of which increase by year 2070
	Cost Effective (benefit cost ratio > 1) (CCR 6006(c)(2)(D))	Sites has a benefit cost ratio of 1.4 when using WSIP funding requirements. The project’s benefit cost ratio goes up to 2.1 when factoring total federal, state, and local project participation.
	Provides net improvement in ecosystem and water quality conditions (CCR (6006(c)(2)(E))	Sites increases Chinook salmon populations over and above existing conditions, including when compared to the no project alternative
	Advances the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta (CCR 6006(c)(2)(F))	Sites supports anadromous fish migration through the Delta, provides pulse flows into the Yolo Bypass to increase food sources to improve Delta smelt growth and condition as they mature into adults, and provides Delta outflows from May through September to support beneficial use. Sites also improves Pacific Flyway habitat for migratory birds and other native species.

“Sites Reservoir will play a key role in making our state drought resilient by expanding our water reserves.”

—Congressman Garamendi

“Sites provides more storage per dollar invested than any other proposed project, ensuring that California has water available for cities, farms and the environment during future droughts. It’s time to fulfill the promises made to voters, move forward on Sites, and build the infrastructure that will allow our state’s economy to continue growing for generations to come.”

—Congressman LaMalfa

“As water and environmental managers have been forced to operate under a constant regulatory hammer, Sites would provide a wrench for them to solve California’s toughest water problems collaboratively and productively”

— Senator Nielsen

“Sites is an incredibly important project for the State of California that meets many of the public benefits required by the Water Bond.”

— Assemblymember Gallagher

“Quote”

- Senator Dianne Feinstein

Need Feinstein quotes

Project Location

The Sites Project would be situated on the west side of the Sacramento Valley, approximately 10 miles west of the rural town of Maxwell, in historic Colusa County. The Sacramento Valley is a unique region, known for its farming community, rich agricultural benefits, and natural beauty. The region has been considered ideal for off-stream water storage since the 1950’s. **Today, with climate change creating a new normal (less snow-pack and flashier rainfall), Sites is ideally located to maximize the capture and storage of rain.**



Sites is widely supported by local community leaders, residents, as well as state water managers and agencies from the Bay Area to Southern California. The Sites Project footprint falls within Congressional District 03 (Garamendi), State Senate District 04 (Nielsen), and State Assembly District 03 (Gallagher). In addition, the project’s environmental flow benefits extend into Congressional Districts 01 (LaMalfa), 07 (Bera), 06 (Matsui), and Thomson (05), State Senate Districts (01) Gaines, 03 (Dodd), and 06 (Pan), as well as State Assembly Districts 01 (Dahle), 04 (Aguiar-Curry), 06 (Kiley), 07 (McCarty). These and many other elected officials from the Sacramento Valley represent bipartisan support for the Sites Project.

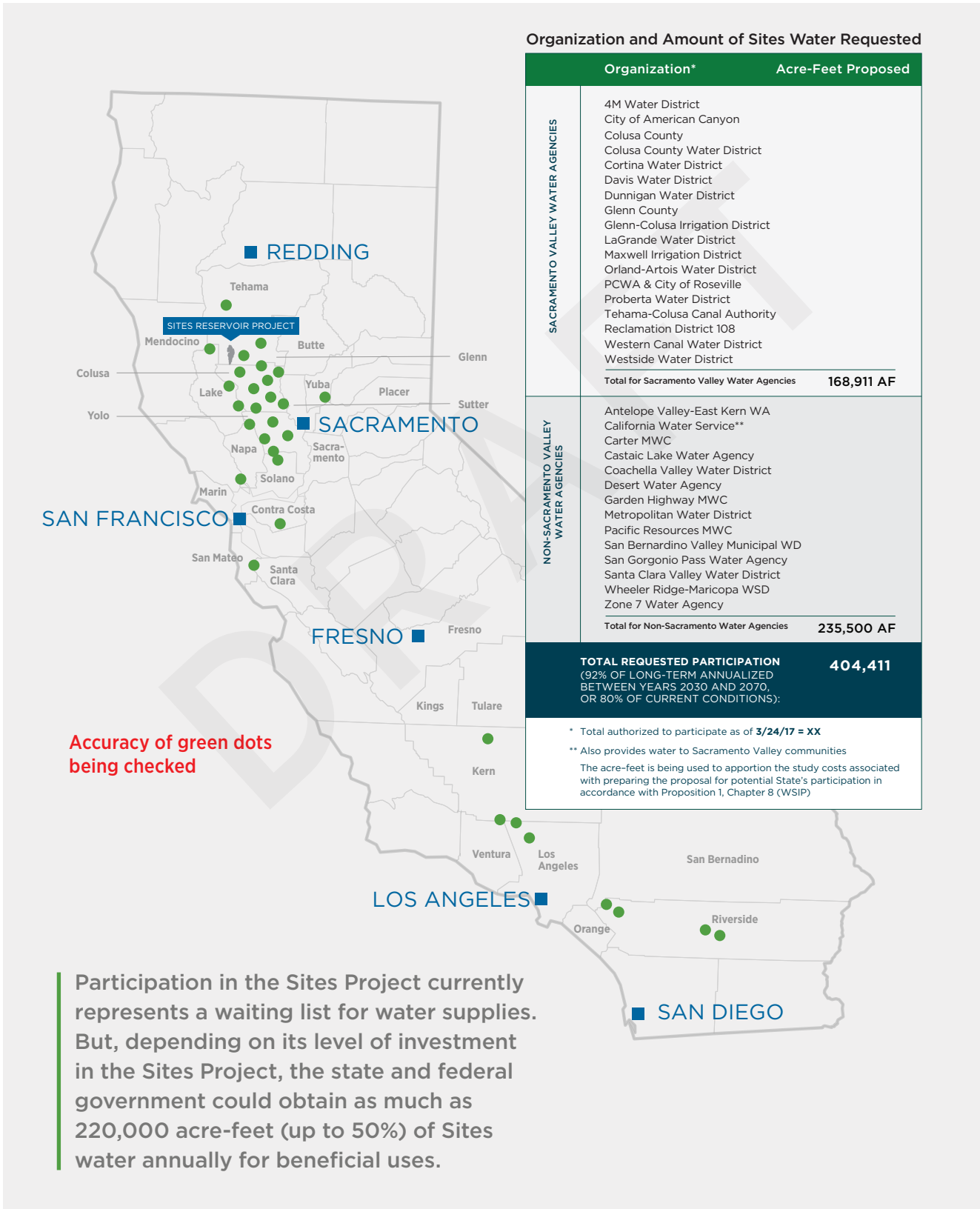
Participants in the Sites Project represent 39 of California’s 51 congressional districts.

A full list of the # supporters of the Sites Project can be found in Appendix X of the WSIP application.

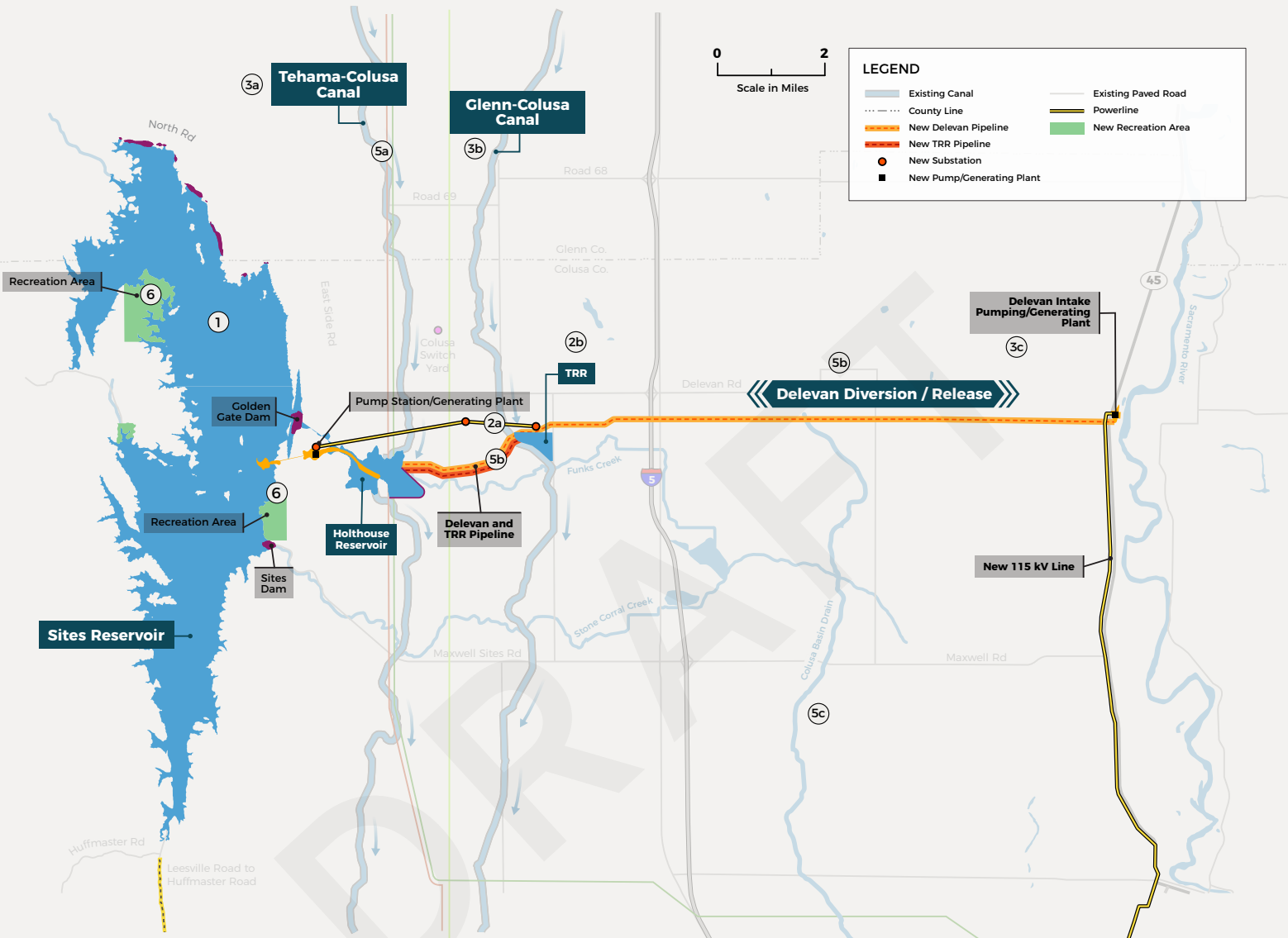


Sites Statewide Project Participation

Sites is Widely Supported by Water Agencies and Stakeholders Across the State



Sites Project Facilities



Cost Benefit Ratio

Sites Economic Benefits

Monetized Benefits and Public Benefit to Cost Ratio (BCR)

Public Benefit						Public Benefit Ratio: 2.1 to 3.3	
Monetized Benefit	Ecosystem Improvement	Water Quality	Recreation	Flood Damage Reduction	Emergency Response		TOTAL MONETIZED BENEFIT \$360 M ANNUALLY
	\$120	\$0	\$2	\$5	\$0		
Non-Monetized Benefit	Water Supply	Agricultural M&I					
		\$163	\$45	\$118			

Sites Project Facilities

The Sites Project is one of the surface storage projects identified in the 2000 CALFED Record of Decision. Water managers have long acknowledged that by creating a new source of water and adding more flexibility in the system, Sites can help California succeed in implementing 21st century water solutions—to meet human AND environmental needs. To achieve this, the Project includes the following facilities:

1 Sites Reservoir

The **1.8 MAF** off-stream reservoir would require two main dams (Sites and Golden Gate) and nine saddle dams. The resulting reservoir covers **14,200 acres**. This reservoir would also improve local flood protection as witnessed by the February 18, 2017 storm event that flooded part of Maxwell and temporarily closed Interstate 5.

2 Regulating Reservoirs

- 2a. Holthouse is an expansion of the existing Funks Reservoir, which provides flow equalization for the Tehama-Colusa Canal. Holthouse Reservoir is sized to allow pump-storage operations to generate renewable energy. Water entering Holthouse Reservoir would be pumped into Sites.
- 2b. The Terminal Regulating Reservoir will be constructed at the Glenn-Colusa Irrigation District Canal for flow equalization with flows pumped into Holthouse.

3 Diversions

Water from the Sacramento River would be diverted into Sites Reservoir from three locations:

- 3a. The existing Red Bluff Pumping Plant would divert water into Holthouse Reservoir through the Tehama-Colusa Canal.
- 3b. The existing Glenn-Colusa Irrigation District Pumping Plant would divert water into Holthouse Reservoir through the Glenn-Colusa Canal.
- 3c. A new Delevan Intake Pumping/Generating Plant would divert water into a new 13.5 mile pipeline that would convey water into Holthouse Reservoir.

Both the Glenn-Colusa and Tehama-Colusa canals utilize state-of-the-art fish screens and the Delevan Intake will include fish screens to ensure fish friendly diversions.

4 Sites Pumping/Generating Plant

This facility would have a capacity of **11,285 AF** to fill Sites Reservoir. Water released from the reservoir would flow in the reverse direction through the plant and generate seasonal **hydropower** to contribute to the state's renewable energy goals. A new substation would connect the plant to the state's electrical grid.

5 Conveyance

Water from Sites can be delivered throughout much of California. Releases from Sites include the following:

- 5a. Through the Tehama-Colusa Canal to local users south of Sites Reservoir.
- 5b. Through the Glenn-Colusa Canal to local users south of Sites Reservoir
- 5c. Through the Delevan Pipeline into the Sacramento River where it can be subsequently diverted by the North Bay Aqueduct or exported to the Central Valley, Bay Area, and Southern California.
- 5d. To the Colusa Basin Drain and either to the Sacramento River or into the Yolo Bypass through Knights Landing Ridge Cut.

Integrating local infrastructure reduces costs and ensures the Project complements the Sacramento Valley water system.

6 Recreation Areas

The Project will include the construction of two new recreation areas on the shore of Sites Reservoir for camping, picnicking, hiking, horseback riding, boating and fishing, among other activities. A separate boat ramp will also be included.

Sites Project Operations

Sites Reservoir would be filled by diverting excess Sacramento River flows originating from unregulated upstream tributaries. Diversions could potentially occur in any month or water year type, but would be greatest in the winter months with an emphasis on capturing high flows from storm events. If Sites existed during 2017’s rainy spring, 1.8 million acre-feet AF of water could have been stored as of May 3, 2017. Up to half of this critical water supply could have been dedicated to environmental flows.

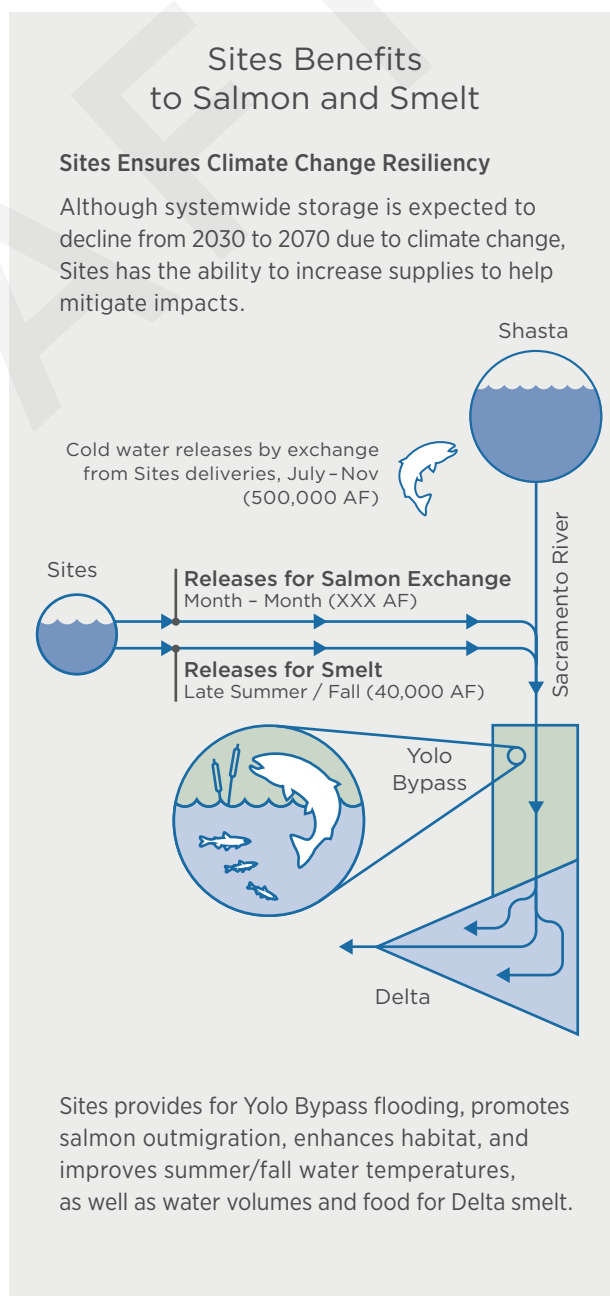
The Sites Project could operate in cooperation with Central Valley Project (CVP) and State Water Project (SWP) system facilities to produce a wide range of public and ecosystem benefits that can be flexibly managed to adapt to future changes, depending on need and priority. Sites Reservoir would provide water benefits through two primary mechanisms: (1) water stored in Sites Reservoir could be released directly to the Colusa Basin and Sacramento River, and (2) water stored in Sites Reservoir could be exchanged for water stored in Shasta Lake, Folsom Lake, or Lake Oroville.

Sites Reservoir could be used to reduce releases and increase storage in other reservoirs with downstream habitat critical to fish, while still meeting requirements for minimum instream flow objectives, Sacramento River temperature requirements, and Delta salinity control assigned to the SWP and CVP. Through this reduction in releases, storage could be conserved in Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake to significantly increase operational flexibility.

Sites provides significant environmental benefits, especially during dry and critical water year types, to benefit coldwater releases for salmon. This benefit also applies to Folsom and Oroville coldwater pools.

Diversion of excess Sacramento River flows to Sites Reservoir would only take place when flow monitoring indicates that sufficient bypass flows are present in the River due to storm event flows.

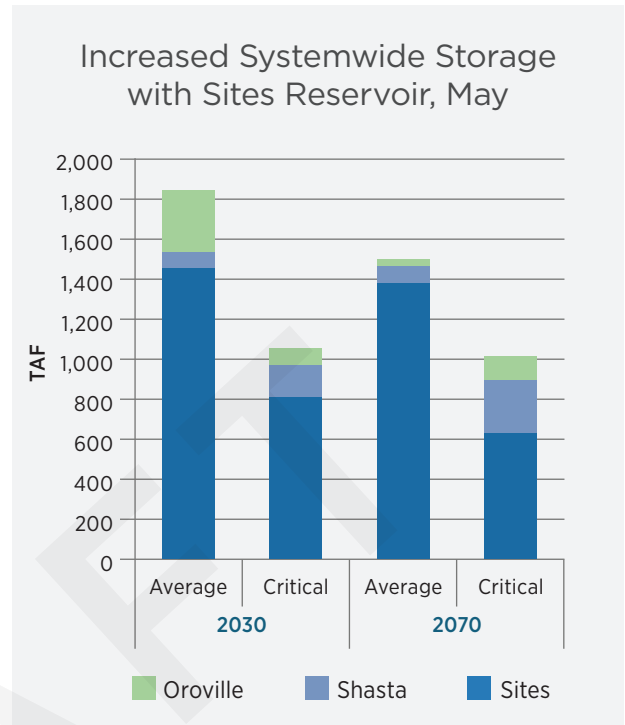
Sites would capture high, excess runoff in a future with less snowpack and higher temperatures. Approximately 220,000 AF of Sites water will be available for environmental use as a long-term average supply.



Had Sites been operational during the 2017 rainy spring season, an additional 1.8 million acre-feet of water could have been stored as of May 3, 2017.

Sites would be operated to provide a variety of environmental benefits that would be managed by the state to provide water for ecosystem and water quality purposes. This pool of dedicated water would be managed to improve cold water conservation storage, stabilize river flows during critical fishery periods, increase flows through certain watercourses and/or facilities (such as the Yolo Bypass), improve water quality, and/or enhance habitat restoration. Collectively, the state and the Authority would manage a sizable supply of water to address real-time needs and achieve both intermediate and long-term goals.

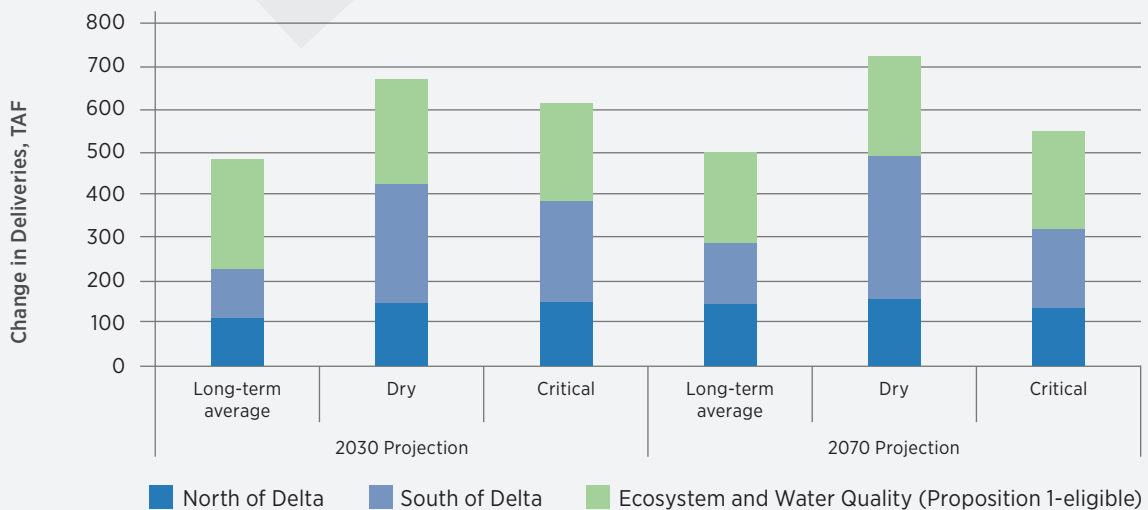
Sites Reservoir water would also be used to supplement existing municipal and agricultural supplies for use in the Sacramento Valley and south of the Delta. These operations would be conducted in cooperation with CVP and SWP operations. By making water available for Delta exports, Sites increases short-term storage releases in summer and fall, when it's needed most to benefit fish.



Sites is particularly beneficial during dry and critical years, increasing overall water supplies despite climate change impacts.

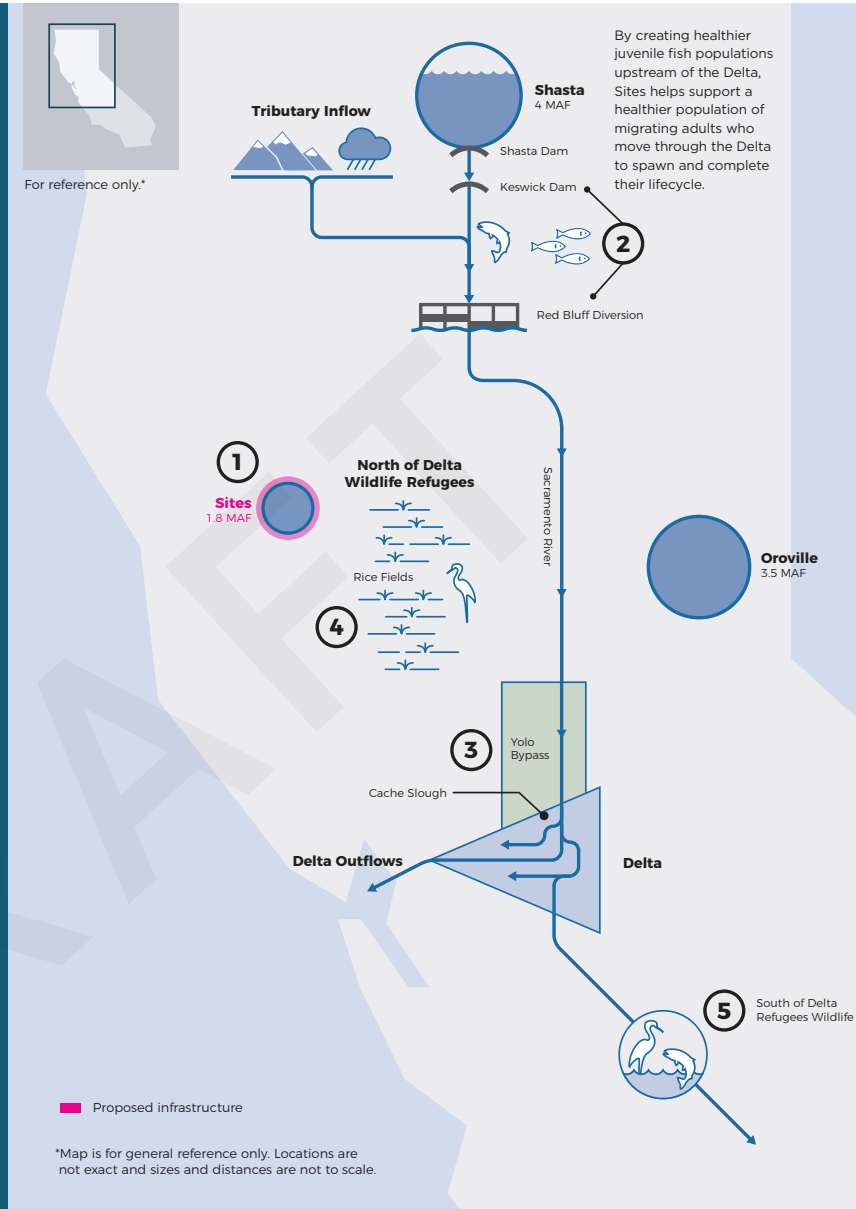
Sites Reservoir Provides Water for Public and Non-Public Benefits in All Water Year Types

Sites Reservoir Increase in Water Supply



Ecosystem Improvements

- 1** Sites Reservoir would provide on average 218,000 to 231,000 AF of water each year specifically to benefit fish and other aquatic species. The Authority would partner with the California Department of Fish and Wildlife (CDFW) and State Water Resources Control Board (SWRCB) to deliver an annual supply of high-quality water at temperatures suitable for environmental purposes. This water could be directed to meet the highest priority water needs in the state.
- 2** Most of the water dedicated to fish would be used to improve conditions in the Sacramento River watershed between Red Bluff and Keswick Dam. This portion of the Sacramento River is critical habitat for Chinook salmon (including the endangered Winter Run) and Steelhead. Water released from Sites Reservoir would meet existing SWP and CVP obligations to enable additional cold water storage at Shasta and Oroville above critical fish habitat. This storage would provide better temperature control and supplemental flows to support fish migration and reduce egg mortality (i.e. redds).
- 3** In a distinctly unique ecosystem action, Sites Reservoir would provide two pulse flows of at least 400 cubic feet per second over a two to three week period into the Yolo Bypass. These pulses would be adaptively managed by the state's designated resource agencies to push water high in phytoplankton and zooplankton directly into the Cache Slough area, the only place in the Delta where the endangered Delta smelt population is increasing. The resulting increase in desirable food sources should improve Delta smelt growth and populations as they mature into adults.



- 4** Sites water would enhance ecosystems for bird populations utilizing the Pacific Flyway during annual migration periods. An additional average of 39,000 to 48,000 AF would be provided annually to National Wildlife Refuges, State Wildlife Areas, and privately managed wetlands. This water would improve habitat conditions for a number of species, including giant garter snake, tricolored blackbird, and migrating waterfowl. Sites is the only Proposition 1 project that could provide water for north of Delta refuges.



Prop 1 Public Benefits	
✓	Improved temperature and flow for anadromous fish in the Sacramento River watershed
✓	Yolo Bypass releases for Delta smelt
✓	Recreation
✓	Local flood damage reduction
Other Public Benefits	
✓	Water supply for agricultural and municipal and industrial use
✓	Renewable energy
✓	Job creation associated with construction, operations and maintenance, and recreation

Proposition 1-Eligible Project Benefits

Water Quality Improvements. The Sites Project meets the California Water Commission’s water quality priorities of improving groundwater conditions and providing water supply to disadvantaged communities. These water supply benefits were captured under non-public benefits and were not monetized as public benefits. As shown in the Federal Feasibility Report for the North-of-the-Delta Offstream Storage (NODOS) Investigation (Reclamation and Authority, 2017), Sites Reservoir can provide water to reduce salinity and shift X2 in the Delta. This benefit has not been monetized due to anticipated climate change impacts in the Delta by year 2030.

Flood Control Benefits. The local area downstream from the Project frequently floods, including portions of Maxwell, Williams, and Colusa. Even though these are seasonal streams, the Funks Creek and Stone Corral Creek watersheds are a key source of flooding during major storms. Construction of the Sites and Golden Gate Dams will reduce the frequency of flooding, reduce river levels to avoid flood events, and relieve pressure on levees. Had Sites been operational during the 2017 spring rainy season, runoff from local creeks and streams could have been captured and stored, reducing high flows, preventing overtopping, and avoiding flood waters that caused significant economic damage in Colusa County and temporarily closed Interstate 5 to traffic.

The Sites Project advances California’s objectives of restoring ecological health in the Delta and improving water management for beneficial uses.

Emergency Response. The Authority is committed to working with state and federal water managers and emergency personnel to provide water to support firefighting, drought relief, and Delta levee failures. This benefit was not monetized and the Authority is not requesting funding for this purpose

Recreation. Two new recreation areas and a boat ramp would be created on the shore of Sites Reservoir. These areas would provide opportunities for boating, camping, hiking, and equestrian use. Sites Reservoir would also improve water levels in existing reservoirs (e.g., Shasta, Oroville and Folsom) to support water-based recreational activities at these locations.

Unmonetized Benefits. The Sites Project would provide additional benefits that have not been monetized due to lack of sufficient, tangible data and generally-accepted models that could reasonably estimate benefits to specific species. The benefits for Chinook Salmon in the Sacramento River watershed between Keswick Dam and Red Bluff (the area captured in SALMOD models) were monetized, but benefits to salmonids in the Feather River and American River were not monetized. Cold water and additional flows made possible by Sites would also benefit other species of fish in the Sacramento River watershed, including steelhead and sturgeon. **Therefore, the net environmental benefits Sites can provide are even greater than those provided in the WSIP application criteria.**

Another example of non-monetized benefits provided by Sites is the ability to improve habitat for Pacific Flyway or other species who utilize the refuge system and/or managed wetland.

Using the criteria established in the WSIP regulations, additional unmonetized benefits of Sites include the following. However, benefits were estimated in the draft Feasibility Report using a different criteria — one that is consistent with how the project has been evaluated in the draft EIR/EIS.

- Significant source of water supplies for homes, farms, and businesses
- Job creation
- Renewable energy
- Water supplies for wildlife refuges

Relative Environmental Value

the Sites Project Addresses California Department of Fish and Wildlife (CDFW) and State Water Resources Control Board (SCWRCB) Priorities

Benefits delivered by the Sites Project address the Ecosystem and Water Quality Priorities identified by CDFW and the SWRCB. Summary of Priorities:

Ecosystem			
#	Priority	Benefit	
	1 Cold water for salmonid eggs and fry	Improved temperature downstream for Shasta, Oroville, and Folsom	
	2 Provide flow for rearing and juvenile migration	Additional water from Shasta and Oroville to be released for migrating juveniles	
	3 Avoid dewatering redds and stranding juveniles	Sites puts additional water into Shasta, Oroville, and Folsom to preserve redds	
	4 Improve ecosystem water quality	Provide colder water temperatures in the Sacramento, Feather, and American Rivers	
	5 Improve dissolved oxygen and colder water	Provides colder water in the Sacramento, Feather, and American Rivers	
	6 Increase attraction flows during migration	Not included, but operations could be reprioritized for this purpose	
	7 Increase Delta outflow	Not monetized. May to December Delta outflow increased by 2.7% in 2030.	
	8 Maintain or restore groundwater and surface water interconnection	Not applicable to Sites	
	9 Enhance flow regimes for riparian and floodplain habitat	Release of water to the Yolo Bypass will improve floodplain habitat. Augmented flows to preserve redds will lead to seasonal improvement in floodplain habitat.	
	10 Improve floodplain Inundation	Benefit to Yolo Bypass	
	11 Enhance diversity of habitat for fish and wildlife	Provides 39 to 48 TAF/yr to refuges and privately managed wetlands	
	12 Eliminate barriers to migration	Not applicable to Sites	
	13 Remediate inadequately screened diversions	Not applicable to Sites. Screens were previously installed at Red Bluff and Hamilton City.	
	14 Provide water to State and Federal Wildlife Refuges	Provides 39 to 48 TAF/yr to refuges and privately managed wetlands	
	15 Implement invasive species management	Not monetized. Mitigation areas will manage/control invasive species.	
	16 Habitat for commercial, educational, etc. species	Enhanced habitat for waterfowl and gamefish (salmon, steelhead, sturgeon)	
Water Quality Priorities			
	1 Temperature	Sites provides colder water temperatures in the Sacramento, Feather, and American Rivers	
	2 Dissolved Oxygen	Operation of Sites Reservoir does not improve dissolved oxygen in water bodies deemed to be impaired by the State Water Resources Control Board	
	3 Nutrients	Operation of Sites Reservoir does not change the amounts of nitrogen introduced into the waterways	
	4 Mercury	Construction and operation of Sites Reservoir does not increase or decrease the amount of mercury in the Sacramento or Feather Rivers	
	5 Salinity	Not monetized. If Sites were operable in 2015, benefits could be provided. However, based on the WSIP requirements, any benefits would erode by 2070 due to climate change.	
	6 Groundwater	Sites Reservoir will reduce undesirable results in groundwater	
	7 Delta Tributary Flows	Operation of Sites Reservoir will not provide flows that resemble natural hydrograph patterns. However, it will provide increased flows, especially in dry and critical water year types, as well as provide pulse flows for benefits in Yolo Bypass.	
	8 Reduce Demand on Delta Watershed	Sites Reservoir helps to reduce water demand on the Delta watershed by developing local supplies in the west side of the Sacramento Valley that incrementally improves regional water self-reliance	
	9 Basic Human Needs	Water from Sites would be provided to disadvantaged communities	

Bold type = Public benefits offered by the Sites Project

Implementation Risk

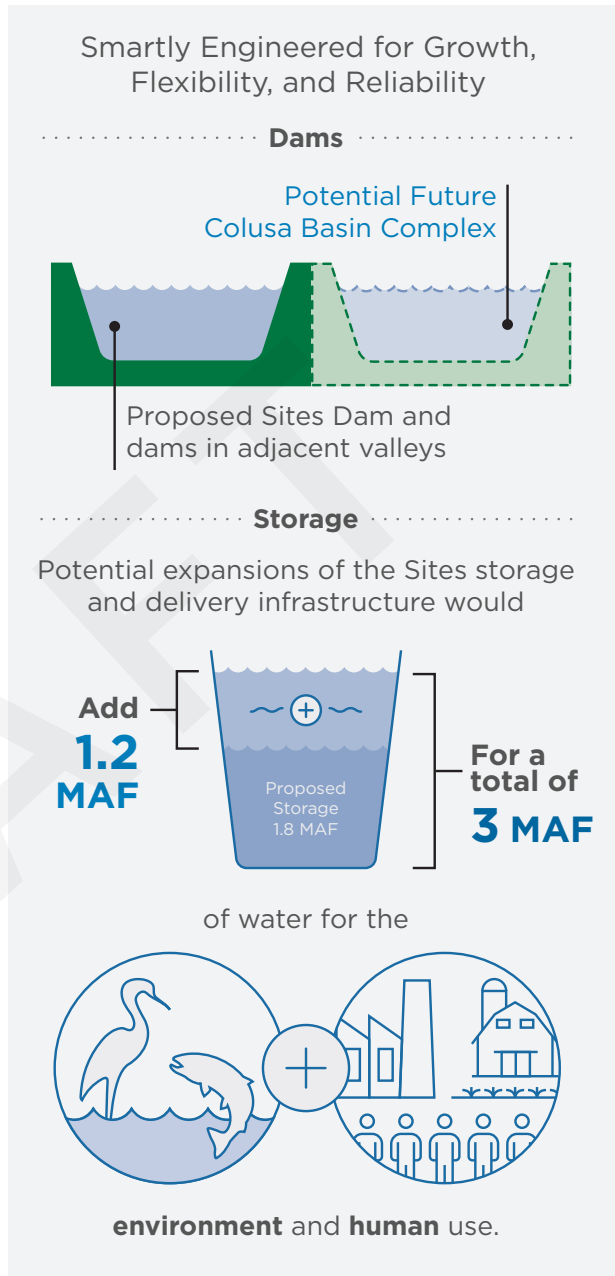
The implementation risk of the Sites Project has been characterized in accordance with the WSIP methodology in this application. Further, an independent analysis of the Project’s feasibility using federal guidelines is available in the Draft NODOS Feasibility Report. Although the federal methodology differs from the WSIP methodology (e.g., different climate change assumptions), the results of the two studies are generally consistent. This independent analysis of the project by Reclamation found the project to be feasible based on available information.

The real risk lies in NOT implementing the Sites Project.

Technical Feasibility: Reclamation, DWR, and the Authority have reviewed the engineering for the Sites Project facilities and deemed them all feasible for construction. The development of cooperative operations that cause “no harm” to SWP or CVP operations or senior water rights is currently underway in a collaborative process that includes participation by Reclamation and DWR. The operations modeled in this application are restricted to the diversion of unregulated flows. Additional protection for migrating salmonids that restricts diversions during pulse flow periods are also included in the modeling to ensure that the public benefits result in net ecosystem improvement. The real risk lies in NOT implementing the Sites Project.

Economic Feasibility: Public and non-public benefits were determined along with a “basis of estimate” report to define project costs and evaluate the economic feasibility of the Sites Project. When using WSIP’s methods for monetizing environmental benefits and acre-feet of water provided by a proposed project, the Public Benefit to Cost Ratio of Sites without federal participation is 1.0. However, the Draft NODOS Federal Feasibility Report conservatively estimates a federal cost share of \$730 million for anadromous fish, refuge water supply, and flood damage reduction benefits. This improves the Public Benefit to Cost Ratio to 1.8.

The benefits of the Sites Project far outweigh the costs. Sites is projected to cost \$4.4 billion (2015 dollars), with an estimated \$61 million to \$71 million annual return on investment.



The overall Benefit to Cost Ratio (including non-Public Benefits) for the Project is 1.4, making it an extremely viable project for California.

Financial Feasibility: There are currently 28 water agencies throughout the state that are participating in the development of the Sites Project, plus four agencies that would not receive Sites water, but have a regional interest in its adaptive management. Together, these agencies make up the Sites Reservoir Committee, which is governed by the Authority.

The operations modeled in this application propose 46% of the average available water (232,000 AF) from Sites be dedicated to consumptive use. The level of participation in the Sites Reservoir Committee would currently cover up to a maximum of 82% of the average available water. Project participants acknowledge Sites will provide long-term water supply benefits, and view that as a potential hedge against an uncertain future, where water will become increasingly scarce and its value is expected to increase at a rate greater than the consumer price index.

In addition, the Draft NODOS Federal Feasibility Report determines federal interest in Project participation for up to 12% of the Project cost.

The participation of the Sites Reservoir Committee and Reclamation in the development of the Sites Project demonstrates a strong level of financial backing and solid financial feasibility.

Environmental Feasibility: When filled, Sites will convert what has predominately been lands used for livestock grazing to create a new aquatic ecosystem. Sites will provide a significant new source of water to support existing and struggling aquatic and riparian ecosystems, increase existing cold-water pools in upstream reservoirs for salmon, and increase plankton for native estuarine fish. The Sites Project will minimally impact existing rivers and channels, and where environmental impacts do exist, a scientifically-based adaptive management program and mitigation and monitoring strategy will be implemented to protect the ecosystem.

As the CEQA and NEPA lead agencies, respectively, the Authority and Reclamation released a Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) that describes the impacts to environmental and cultural resources as a result of the Sites Project. Impacts that are significant and unavoidable are described within the EIR/EIS. Despite the significant benefits of the Sites Project, there are some anticipated impacts from construction-related effects that would be fully eliminated through mitigation, and some impacts that would remain significant and unavoidable despite proposed mitigation measures. Primary significant and unavoidable environmental impacts include impacts to existing golden eagle habitat, historical and cultural resources, disturbance of a dedicated cemetery, and conversion of prime farmland and native rangeland. The Authority is working with landowners, communities, Tribes, and government agencies to develop relocation and mitigation plans to offset these impacts.

Sites is environmentally feasible because it creates and protects aquatic and riparian habitat, improves ecosystem conditions, provides additional flows during critical periods for fish, and secures water for consumptive use. The Project is expected to receive the necessary permitting to proceed with construction.

Operational Flexibility

Sites Reservoir can provide a wide range of physical and economic benefits. The Authority, in partnership with the state's environmental and water quality resource managers, intends to adaptively manage the public benefits to meet the highest ecosystem and water quality needs. An operational scenario using the WSIP CalSim model was applied to the Project, but it should be noted that operations could be modified to redistribute the benefits.

Sustainable Groundwater Management

Although the Authority is committed to giving the state the first right of refusal on the water it would provide, Sites would also become an important asset for approximately 33 water agencies throughout California. Many of these agencies would use Sites Reservoir to help maintain long-term groundwater levels, improve salinity concentrations in groundwater basins, and comply with the Sustainable Groundwater Management Act. The key to effective groundwater management depends in large part on having surface water supplies that can be flexibly managed, which Sites offers. The Project will allow water districts in California to pursue large-scale groundwater recharge projects that work for them, and potentially delay Sacramento and San Joaquin Valley reliance on groundwater pumping during critical dry years. This will reduce subsidence, conserve groundwater for supply, and improve groundwater quality.

Sites Works: It creates significant public benefits for 12 of the 16 ecosystem priorities identified by the California Water Commission

Potential for Expansion

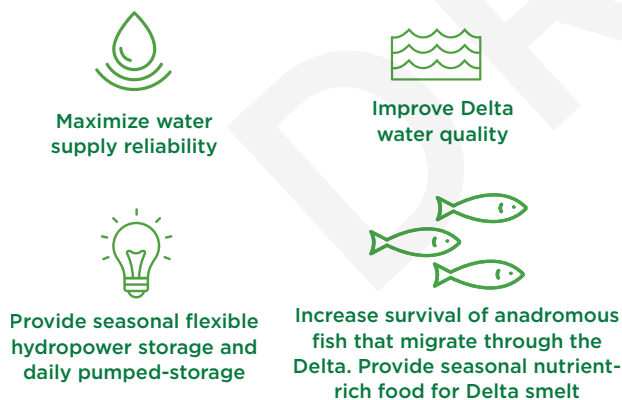
The Sites Project could be expanded to provide additional public and non-public benefits. The most likely near-term expansion includes increasing the size of the Delevan Pipeline or adding the ability to divert floodwaters into storage from the Colusa Basin Drain. This would provide water managers with the ability to divert an additional X AF of excess river flows, providing the added benefit of XYZ.

The Draft NODOS Feasibility Report, which evaluated the development of the “Colusa Basin Complex” could include raising the Sites Reservoir dams and constructing dams in the adjacent valley to produce 1.2 MAF, for a total capacity of 3 MAF.

Integration with the State’s Water System

The Authority is working with Reclamation and DWR to develop and describe cooperative operations between Sites Reservoir, the SWP, and the CVP that would improve water supply reliability throughout the state’s interdependent water system. Project operations would maximize a broad array of benefits and minimize or avoid adverse effects.

The operational scenarios are designed to concurrently:



Sites Reservoir is also an important regional initiative and was identified as a long-term regional priority in the Sacramento Valley Integrated Water Management Plan due to its water supply reliability and flood protection benefits.

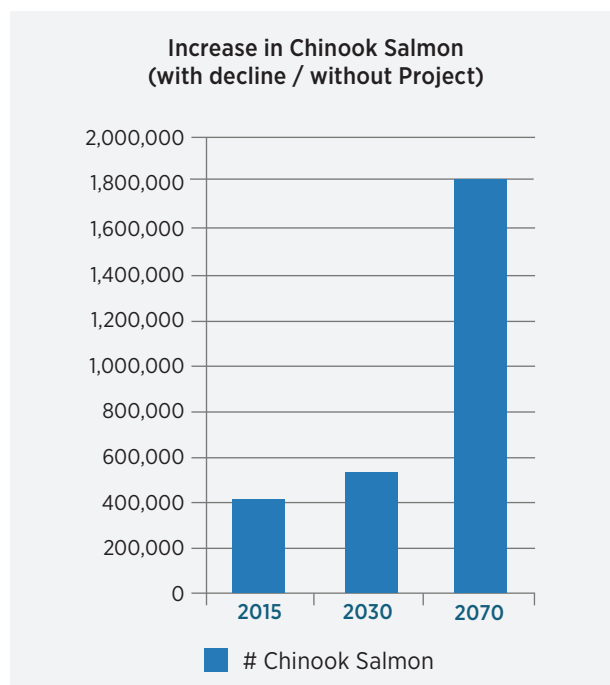
Finally, the Sites Project would also increase the value of projects that may be implemented in the future. One example is the River Arc Project on the American River under consideration by Authority members Placer County Water Agency and the City of Roseville. The River Arc Project would improve water supply reliability and groundwater quality in the lower American River watershed. Constructing Sites Reservoir could considerably enhance the potential benefits of future groundwater storage projects that could be constructed downstream.

Resiliency

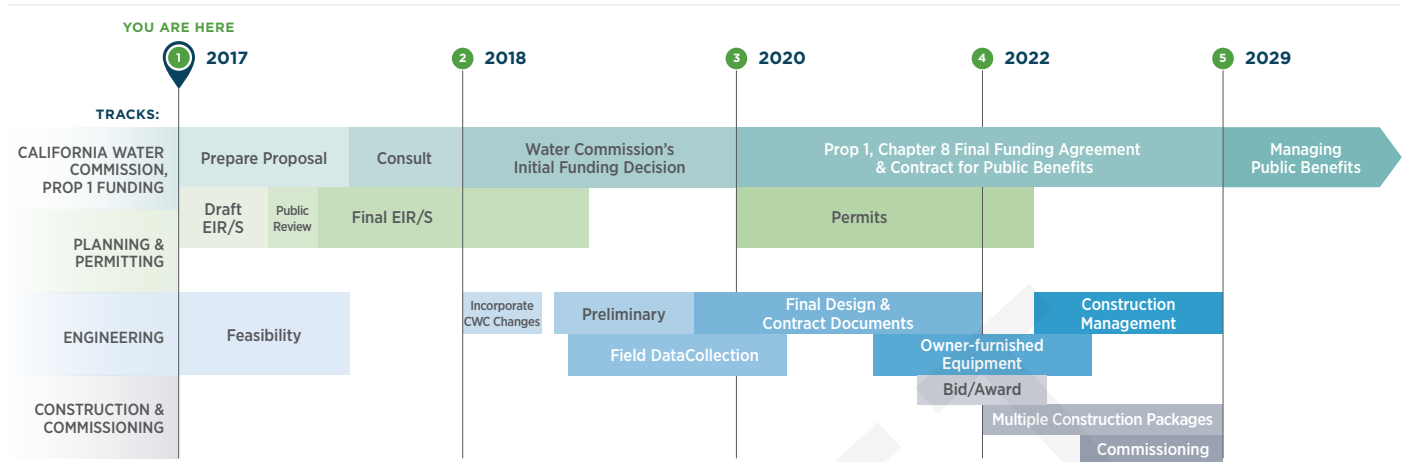
Dedicated water for the environment

Because of climate change, some public benefits decline slightly and others increase between 2030 and 2070 for the operations modeled under current WSIP application requirements. One of the most beneficial features of Sites is that it provides dedicated storage of water for environmental purposes that can be repurposed for the highest priority public benefit as future conditions change.

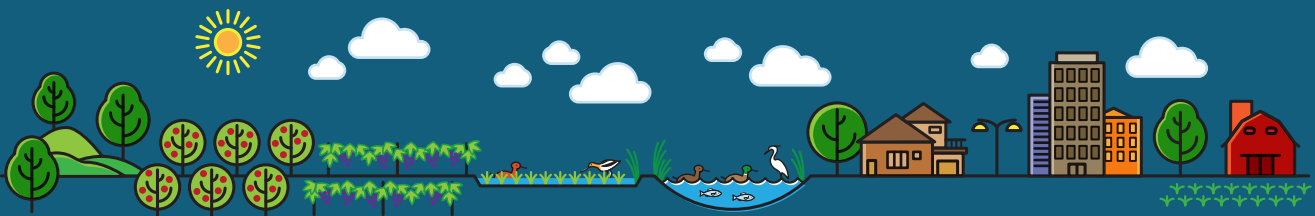
The benefits to anadromous fish from the Sites Project become even more valuable over time. Without Sites, the population of Chinook salmon declines drastically due to climate change. Modeling results for Sites Reservoir demonstrate the ability of the Project to offset some of the decline in population due to rising temperatures, improving the resiliency of salmon populations in the face of climate change.



SITES PROJECT SCHEDULE:



Sites is a smart water storage investment. The California Water Commission has an opportunity to improve the Delta ecosystem, enhance the flexible operation of our state's water system, and fulfill the will of California voters.



WATER FOR THE ENVIRONMENT, FAMILIES, FARMS AND BUSINESSES



Sites Works for California

Currently, the state does not have a significant source of water available for its environmental resource managers to use, and fluctuating climate conditions strain existing systems.

The Sites Project:

- Is a viable, reasonable and prudent project that would relieve stress on both the environment and existing water infrastructure
- Provides operational flexibility to the state's primary water system without impacting sensitive river channels and critical environmental flows.
- Is designed to give water agencies across California more flexibility to meet both customer demands and environmental needs, especially during inevitable dry and critical years

Project Benefits



Enhanced water management flexibility



Improved environmental flows



Increased water supply reliability



Improved ecosystems



Potential new renewable energy resources



New recreation opportunities



Climate change resiliency



Flood management



Enhanced water quality



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