

**File Provided Natively**

## Maxwell Public Utility District

Incorporated February 23, 1934

P.O. Box 294, Maxwell, CA 95955.....Phone: (530) 438-2505

Email: [maxpud@frontiernet.net](mailto:maxpud@frontiernet.net)

[maxwellpud.myruralwater.com](http://maxwellpud.myruralwater.com)

"This Institution Is An Equal Opportunity Provider"

January 4, 2022

Sites Project:

Re: Response to study provided by your project

From: Kurt Chambers, General Manager

In your study it states "the WWTP has capacity to service approximately 1,000 new connections."

The District was not contacted for information and I do not know where this information came from. At this time, the District is not capable of servicing that many more connections.

I have attached the Districts Engineering Report for the WWTP date November 2008. Please look it over and contact me if you have any further questions or concerns.

Please include the MPUD in any of your information ascertained in regard to the District. This information was brought to my attention by Maxwell's Fire Chief. I am willing to work with your project to the fullest.

Sincerely,



Kurt Chambers,  
General Manager

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**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/4/2022 10:51:35 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** FW: Maxwell Fire Department DEIR/EIS comment  
**Attachments:** Maxwell Fire Department\_DEIR-EIS comment\_4Jan2022.pdf

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**From:** Kevin Spesert <kspesert@sitesproject.org>  
**Sent:** Tuesday, January 4, 2022 10:49 AM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** Maxwell Fire Department DEIR/EIS comment

Ali & Laurie...

Attached is a DEIR/EIS comment from the Maxwell Fire Protection District Kenny Cohn....he brought it by the office before the Christmas break.

Kenny was concerned that the text in the document regarding the District's service area was incorrect and want to clarify it.

We will be receiving additional comment from the District before the close of the comment period.

Thanks!

Kevin

## Kevin Spesert

External Affairs Manager  
Sites Project Authority  
Phone: 530.632.4071  
Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)  
Web: [www.SitesProject.org](http://www.SitesProject.org)  
P.O. Box 517  
122 Old Hwy 99W  
Maxwell, CA 95955

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To whom it may concern

The Maxwell Fire protection district covers 208 Square miles {LAFCO} we cover from Glenn Colusa county line to Lurline rd and as far west as Rail Canyon rd and to the 2047 canal to the east.

We have 3 full time personal and 34 volunteer. MFPD is the only fire department in Colusa County that has an ambulance for patient transport to the hospital.

Part of the MFPD is within the state response area for wild fires and MFPD is the first to respond to all fires in the SRA until Cal fire arrives to assume command of the incident. MFPD is responsible for all non-fire emergency call within our district.

Thank you

Kenny Cohen Maxwell Fire Chief

A handwritten signature in black ink, appearing to read 'Kenny Cohen', with a long horizontal flourish extending to the right.

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**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/4/2022 10:55:10 AM  
**To:** Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Maxwell Fire Department DEIR/EIS comment

Thanks Kevin – I have forwarded this to [eir-eis-comments@sitesproject.org](mailto:eir-eis-comments@sitesproject.org) address so it gets added to the RDEIR/SDEIS comments.

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**From:** Kevin Spesert <kspesert@sitesproject.org>  
**Sent:** Tuesday, January 4, 2022 10:49 AM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** Maxwell Fire Department DEIR/EIS comment

Ali & Laurie...

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We will be receiving additional comment from the District before the close of the comment period.

Thanks!

Kevin

**Kevin Spesert**  
External Affairs Manager  
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**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/4/2022 10:55:31 AM  
**To:** Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Maxwell PUD

Thanks Kevin – I have forwarded this to [eir-eis-comments@sitesproject.org](mailto:eir-eis-comments@sitesproject.org) address so it gets added to the RDEIR/SDEIS comments.

---

**From:** Kevin Spesert <kspesert@sitesproject.org>  
**Sent:** Tuesday, January 4, 2022 10:49 AM  
**To:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** FW: Maxwell PUD

Here is a DEIR/EIS comment from the Maxwell Public Utilities District...Kurt is the General Manager...he also brought a hard copy version to the office.

I informed him that the comment period had been extend to January 28<sup>th</sup>....we may receive some additional comments from the PUD before the deadline.

Thanks!

Kevin

## Kevin Spesert

External Affairs Manager  
Sites Project Authority  
Phone: 530.632.4071  
Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)  
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---

**From:** kurt.maxwellpud kurt.maxwellpud <[kurt.maxwellpud@frontier.com](mailto:kurt.maxwellpud@frontier.com)>  
**Sent:** Tuesday, January 4, 2022 9:37 AM  
**To:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>  
**Subject:** Maxwell PUD

Good morning Kevin,

here is our response to the sites project from your office. Please let me know if you have any further questions or concerns. I am here to work with your project.

*Kurt Chambers*  
*General Manager*  
*Maxwell Public Utilities District*  
**<http://www.maxwellpud.myruralwater.com>**  
*P.O. Box 294 Maxwell Ca. 95955*  
*Office:(530)438-2505 Cell:(530)902-1529*  
*Email:kurt.maxwellpud@frontier.com*



**Field Activity Advisory**  
**Bald Eagle and Golden Eagle Surveys**  
**January 2022**

The Sites Project Authority is preparing to conduct bald and golden eagle surveys within and adjacent to the anticipated area of the proposed Sites Reservoir. Surveys are needed to identify if any bald eagle and/or golden eagle nests are located within, or adjacent to, the proposed project areas, to understand the potential for the project to impact bald and golden eagles during construction and operation. The surveys will include visual observation, both from a helicopter and from public roads.

**Who:** Sites Project Authority

**What:** Sites Project Authority consultant staff, during a 4-day period, will conduct visual surveys by helicopter to identify the location of any bald eagle and/or golden eagle nests within the proposed project area and up to about 4 miles outside of the proposed project area. Flights will occur at an average height of about 500 feet, with some time spent below this altitude, only as needed, for specific nest site observation and/or safety considerations. Most overflights will occur at speeds of 60 miles per hour. Extended periods of hovering are not anticipated, but may occur periodically for a period of 1 to 2 minutes, to evaluate a potential nest location. Generally, the helicopter will fly rounded/looping transects that follow topography and trend from north to south, and from east to west. Transect routes may be influenced by visibility, vegetation density, presence of nests, wind conditions, and fuel availability. The field crew will be comprised of one helicopter with a pilot, and two wildlife biologists, who will perform the surveys.

Separately, consultant staff will also be conducting visual surveys by public roads to identify possible nest locations and observe eagle use of the proposed project area and up to about 4 miles outside of the proposed project area.

**When:** Aerial surveys are proposed to occur for up to 4 days beginning on or around January 24, 2022, weather permitting. If conditions are not suitable, surveys would occur the following week. Flights will occur during daylight hours between 8 a.m. and 5 p.m. Following the January surveys, an additional 2 to 3 days of helicopter surveys are proposed in both April and July 2022, to confirm eagle nesting activity, and complete the required survey protocol.

Ground surveys by biologists working from a vehicle would occur simultaneously with the helicopter surveys and would continue for up to 2 days after the aerial surveys are complete. The survey team would use binoculars and/or spotting scopes and support the helicopter survey team by briefly viewing accessible nests that have been identified by the helicopter survey team.



**Where:** Helicopter flights will focus on nesting habitat consisting of woodlands and cliffs. Surveys will include the proposed project area, and nesting habitat within 4-miles of the project boundary. Ground surveys by biologists working from a vehicle would be limited to public roads and roadway right of ways. Using binoculars and/or spotting scopes, the biologists would work in concert with the helicopter survey team by briefly viewing the accessible nests that have been identified by the helicopter survey team.

Should you have any questions regarding Sites Reservoir Project field activities, please contact Kevin Spesert or Conner McDonald of the Sites Project Authority Team.

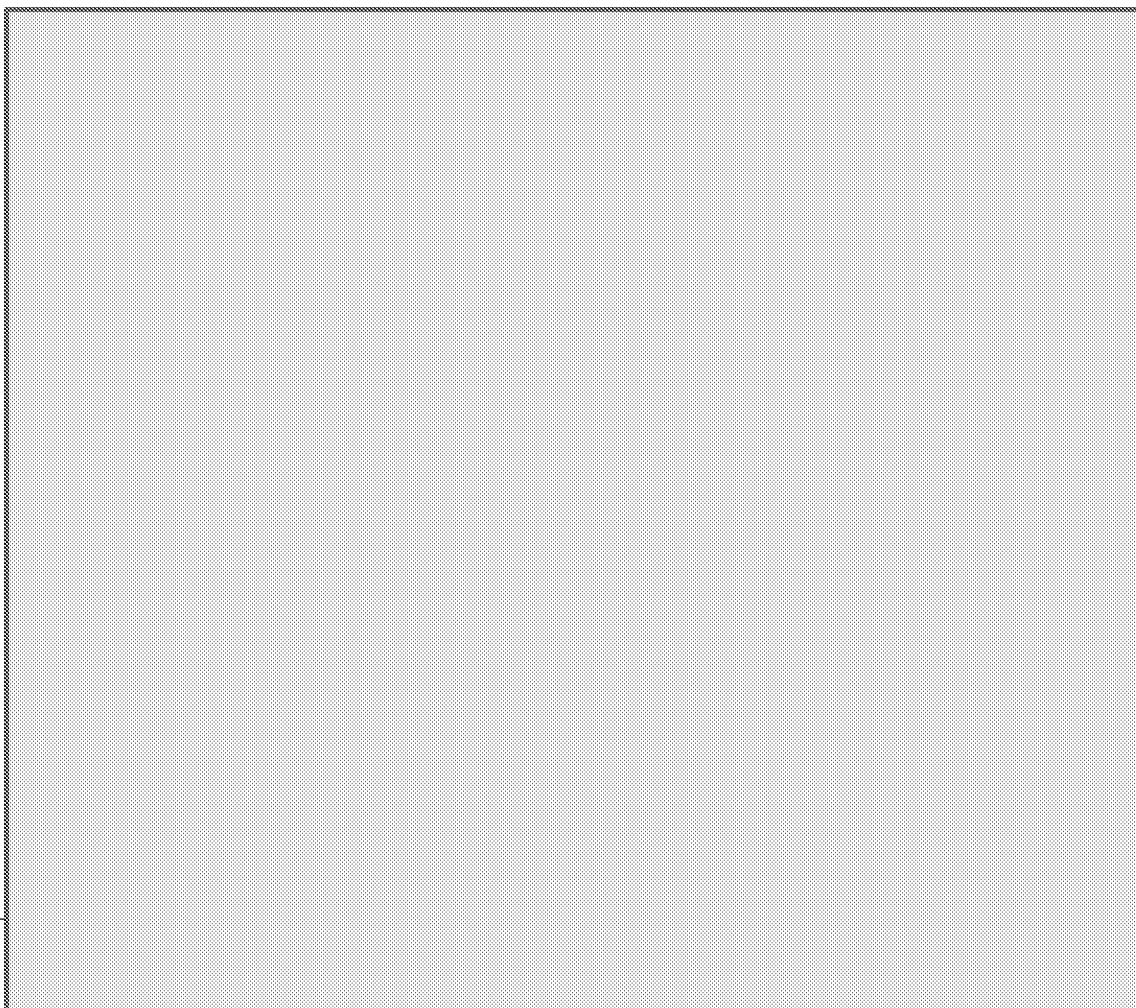
**Kevin Spesert**  
External Affairs Manager  
Phone: 530-632-4071  
E-Mail: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

**Conner McDonald**  
Landowner Coordinator  
Phone: 530-750-9912  
E-Mail: [conner@cmdwest.com](mailto:conner@cmdwest.com)

**For additional information regarding the Sites Reservoir Project,  
please contact us, or visit our website at [sitesproject.org](http://sitesproject.org)**

Proposed Aerial Survey Area

[Map Graphic of: “Green” Nesting Habitat; “Yellow” Foraging Habitat; “Pink” Project Features Boundary]



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**From:** EIR-EIS-Comments [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=000495187B364C8FB0DBFD9614D990BA-EIR-EIS-COM]  
**Sent:** 1/4/2022 12:53:47 PM  
**To:** Fisher, Linda [Linda.Fisher@hdrinc.com]  
**Subject:** FW: Sites Reservoir Public Comment

-----Original Message-----

**From:** Margo Wixsom <wixword@sbcglobal.net>  
**Sent:** Friday, December 17, 2021 12:15 AM  
**To:** EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Subject:** Sites Reservoir Public Comment

Dear CA Reservoir Commission Members,  
We can no longer appropriate lands from Native peoples without their approval. Please do not move forward with this Sites Project without the full support of Yurok and other impacted tribal leaders.

We must put our efforts into conservation and mandate that every home and business install a water meter, be charged for water use and rationed during drought. These are easy and responsible measures for every Californians to take to be responsible for water use and conservation.

Sincerely,  
Margo Wixsom  
375 Aberdeen Way # 665  
Inverness, CA 94937-0665

Sent from my iPhone

The Sites Project Authority is preparing to conduct bald and golden eagle surveys within and adjacent to the anticipated area of the proposed Sites Reservoir. Surveys are needed to identify if any bald eagle and/or golden eagle nests are located within, or adjacent to, the proposed project areas, to understand the potential for the project to impact bald and golden eagles during construction and operation. The surveys will include visual observation, both from a helicopter and from public roads.

**What:** Sites Reservoir Project consultant staff, during a four-day period, will conduct visual surveys by helicopter to identify the location of any bald eagle and/or golden eagle nests in the proposed project area. Flights will occur at an average height of about 500 feet, with some time spent below this altitude only as needed for specific nest site observation and/or safety considerations. Most overflights will occur at speeds of 60 miles per hour. Extended periods of hovering are not anticipated but may occur periodically for a period of one to two minutes to evaluate a potential nest location. Generally, the helicopter will fly rounded/looping transects that follow topography and trend from north to south, and from east to west. Transect routes may be influenced by visibility, vegetation density, presence of nests, wind conditions, and fuel availability. The field crew will be comprised of one helicopter with a pilot and two wildlife biologists, who will perform the surveys.

Separately, consultant staff will also be conducting visual surveys by public roads to identify possible nest locations and observe eagle use of the proposed project area and up to about four miles outside of the proposed project area.

**When:** Aerial surveys are proposed to occur for three to four days beginning on or around January 24, 2022, weather permitting. If conditions are not suitable, surveys would occur the following week. Flights will occur between the hours of 8 a.m. and 5 p.m. Following the January surveys, an additional two to three days of helicopter surveys are proposed in both April and July 2022, to confirm eagle nesting activity and complete the required survey protocol.

Ground surveys by biologists working from a vehicle would occur simultaneously with the helicopter surveys and would continue for up to two days after the aerial surveys are complete. The survey team would use binoculars and/or spotting scopes and support the helicopter survey team by briefly viewing accessible nests that have been identified by the helicopter survey team.

**Where:** Helicopter flights will focus on nesting habitat consisting of woodlands and cliffs. Surveys will include the proposed project area, and nesting habitat within four miles of the project boundary. Ground surveys by biologists working from a vehicle would be limited to public roads and roadway right of ways. Using binoculars and/or spotting scopes, the biologists would work in concert with the helicopter survey team by briefly viewing the accessible nests that have been identified by the helicopter survey team.

Should you have any questions regarding Sites Reservoir Project field activities, please contact Kevin Spesert or Conner McDonald of the Sites Project Authority Team.

**Kevin Spesert**

External Affairs Manager  
Phone: 530-632-4071  
E-Mail: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

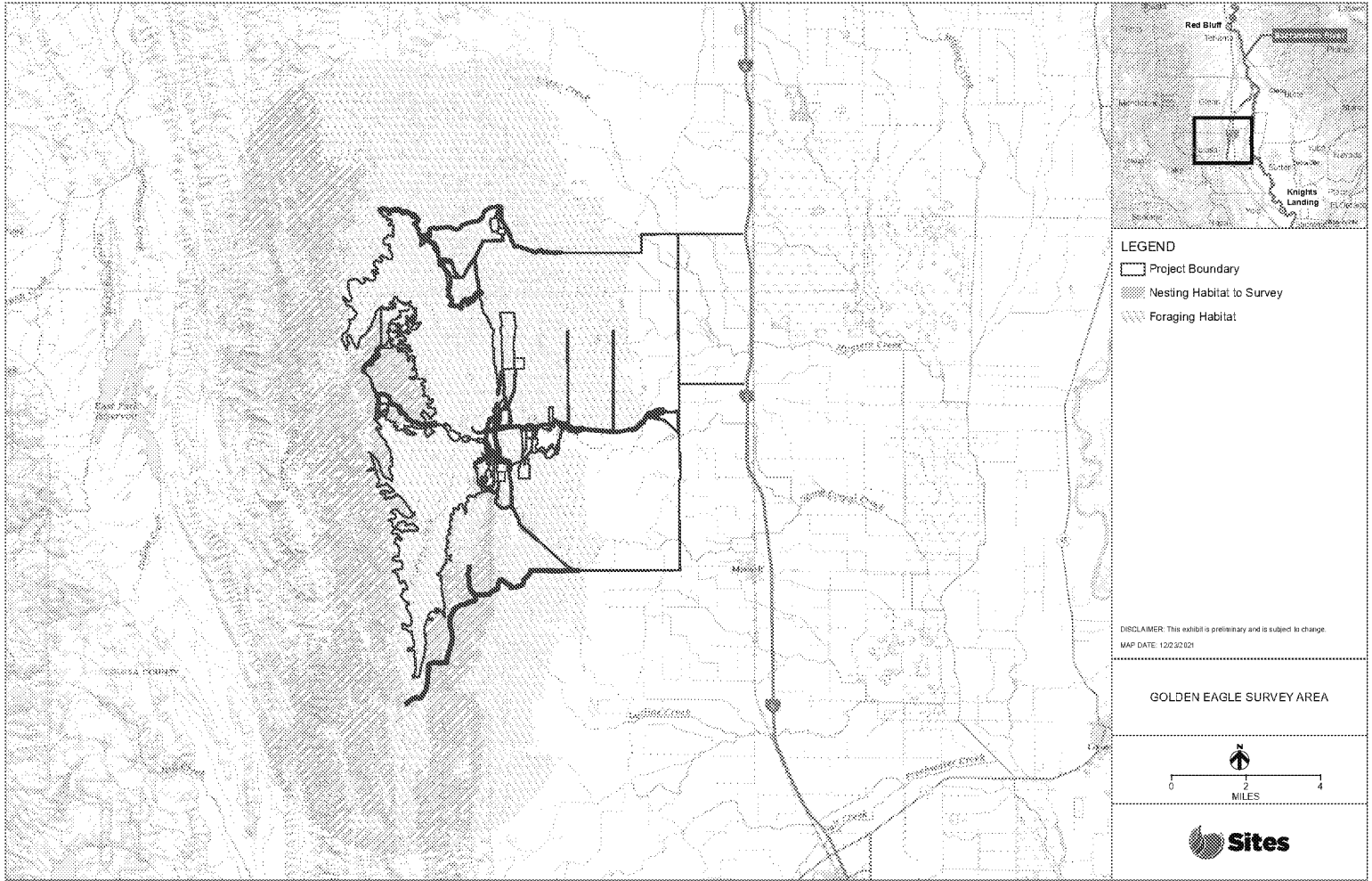
**Conner McDonald**

Landowner Coordinator  
Phone: 530-750-9912  
E-Mail: [conner@cmdwest.com](mailto:conner@cmdwest.com)



For additional information regarding the Sites Reservoir Project, please contact us, or visit our website at [sitesproject.org](http://sitesproject.org)

## Proposed Aerial Survey Area



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**From:** Jerry Boles [chicojerry@yahoo.com]  
**Sent:** 1/5/2022 1:54:30 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Comments on Sites Reservoir Project Revised Draft EIR/Supplemental Draft EIS  
**Attachments:** Sites DEIR 2.docx

Attached are my comments on the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.

Jerry Boles

The Draft EIR is an improvement from the 2017 version in that it at least acknowledges some water quality issues, but continues to ignore other water quality issues, makes inaccurate and misleading statements, and offers conflicting and contradicting strategies to attempt to lessen significant and substantial adverse impacts.

The data in the WDL for the Sacramento River and Cottonwood Creek demonstrate that high concentrations of metals can be expected during the high flow months of winter (December through March) when diversions would be occurring to the proposed Sites Reservoir. Higher concentrations of metals are likely during the higher flows that can occur during these months. Such higher flows were not targeted by the limited sampling effort presented in the WDL. The high concentrations of metals in the source water will adversely impact water quality in the proposed reservoir for most, if not all, the proposed beneficial uses of the stored water.

Some metals from both the Sacramento River and Cottonwood Creek, whose concentrations did not exceed criteria in the limited sampling effort, had concentrations that nearly exceed the criteria and standards. These and other metals whose concentrations did not exceed the criteria may have higher concentrations during the higher flow periods that the proposed project would be diverting. Again, these higher flow periods were not targeted during the limited sampling effort.

Even some of the minimum concentrations of metals found in the source waters exceed criteria and standards, which means that the source waters never meet these goals and standards – the criteria are always exceeded and the water is never suitable for the beneficial use or uses the criteria or standards were designed to protect. Water quality in the proposed reservoir for these parameters will exceed the criteria and standards all the time.

Since water quality in the proposed reservoir will reflect that of the source waters, the reservoir will have concentrations of numerous metals, including aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc, that exceed a number of criteria and standards developed to protect beneficial uses. In addition, other metals that may not exceed criteria and standards in the source waters may adversely affect reservoir water quality due to synergistic effects. The State Water Resources Control Board (SWRCB 2011) states that “when multiple constituents have been found together in groundwater or surface waters, their combined toxicity should be evaluated” and that “theoretical risks from chemicals found together in a water body shall be considered additive for all chemicals having similar toxicologic effects or having carcinogenic effects.” Thus, the adverse effects from the metals delivered to the proposed reservoir from the source waters may have an even greater adverse impact and pose an unacceptable level of risk. Beneficial uses potentially impacted by metals in the proposed reservoir include agricultural water supply (direct toxicity or uptake by crops making the crops unsuitable for use), wildlife (such as fish-eating birds), fisheries, recreation (including sport fishing and water contact activities such as swimming), and drinking water supplies for communities that divert water from the Sacramento River.

Releases from the proposed reservoir would occur during the summer when metals concentrations in the Sacramento River are much lower due to the majority of flow being from Shasta Reservoir, with much better water quality, though still carrying a metals load. High

metals concentrations in the proposed reservoir releases could adversely affect water quality in the Sacramento River during the summer months by increasing metals loads beyond acceptable limits and adversely impact beneficial uses.

Though high concentrations of metals that exceed water quality criteria exist in source waters to the proposed project, they cannot be regulated by governmental entities since they are natural occurrences. However, once contained artificially in a reservoir, they are subject to jurisdictional control by regulatory agencies. Any releases of water from the proposed reservoir will likely be subject to review by water quality regulatory agencies to ensure that such releases do not adversely affect downstream resources due to the heavy metals loads in the releases. The SWRCB has an antidegradation policy that prohibits discharges that would degrade water quality to a level below water quality objectives because no capacity would exist for degradation that will be caused by the next downstream or downgradient uses – the ability to beneficially use the water would have been impaired, even though water quality objectives would not yet have been exceeded (SWRCB 2011). The contribution of additional metal loads from releases from the proposed Sites Reservoir during the summer could cause concentrations of metals in the Sacramento River to exceed criteria and standards or at least be subject to the antidegradation policy due to an incremental increase in metals in the Sacramento River from the proposed project. Thus, the proposed project may face prohibition of releases if stored water does not meet water quality criteria or standards or if releases can cause criteria or standards to be exceeded by downstream inputs (i.e., antidegradation policy).

During dry years, the adverse impacts associated with the project can be expected to be even greater. Flows in the Sacramento River from upstream reservoirs on the Sacramento River (i.e., Shasta Reservoir, Whiskeytown Reservoir) will be minimized during the winter months in an effort to restore water storage levels in those reservoirs. Likewise, during wet or even normal runoff years, releases from the upstream reservoirs during the winter will be curtailed during high runoff periods to prevent downstream flooding. In any of these scenarios, tributary influences, such as Cottonwood Creek, on water quality in the Sacramento River will be much greater. The proposed project would still attempt to capture as much runoff from the Sacramento River as possible, but the water diverted to the proposed project will have even greater concentrations of metals due to the majority of flow being from tributary streams (e.g., Cottonwood Creek) during dry and possibly even wet or normal runoff years.

Similarly, during the summer in dry years, releases from upstream reservoirs (i.e., Shasta Reservoir, Whiskeytown Reservoir) will be minimized. Releases to the Sacramento River from the proposed project (whether directly to the Sacramento River or indirectly through the CBD or GCID) will have a greater impact on water quality in the Sacramento River due to less dilution being available due to curtailed flows in the river from upstream reservoirs (i.e., Shasta and Whiskeytown reservoirs).

The limited data that are available are sufficient to show that water quality in the proposed reservoir will have concentrations of a large number of metals that exceed many water quality criteria and standards, including those established for the protection of agricultural water supply, wildlife and fisheries, and drinking water. Metals bioaccumulation in the reservoir food web could produce adverse impacts to fish-eating birds and other animals, as well as humans, and

adversely affect any potential recreational benefit from the project. Releases from the proposed reservoir could adversely affect downstream resources, including agricultural water supply, wildlife and fisheries, and drinking water supplies for communities that divert water from the Sacramento River.

The Basin Plan lists other chemicals that adversely affect water quality in the Sacramento River, including chlorpyrifos and diazinon. The California State Water Resources Control Board lists a number of other “constituents of concern” in the study area, including chlordane, DDT, mercury, PCBs, and dieldrin. In addition, sewer outfalls from the cities of Redding and Red Bluff contribute other contaminants, such as pharmaceuticals, to the Sacramento River. Other than diazinon and a brief discussion of chlorpyrifos, DDT, and dieldrin, no information is provided in the EIR about effects to the proposed project from these chemical contaminants.

## Chapter 6. Surface Water Quality

p. 6-2 and 6-3: Table 6-1b summarizes operation impacts for surface water quality resources. Impact WQ-2 (Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality during operation) is identified as CEQA significant and unavoidable (SU) and NEPA substantial adverse effect (SA) for all alternatives. Yet, somehow this is deemed as not conflicting with or obstructing implementation of a water quality control plan (Impact WQ-5). Since, as identified as Impact WQ-2, the project will violate water quality standards of the Central Valley Water Quality Control Plan (Basin Plan), this is obviously a significant impact and substantial adverse effect which conflicts with the Basin Plan.

p. 6-19: “Mean mercury concentrations in Shasta Lake and in the Sacramento River at Red Bluff and Hamilton City are substantially lower than the CTR criterion for mercury in freshwater (50 nanograms per liter [ng/L]).” The Sites Reservoir project will not be diverting “mean” concentrations of mercury (or any other constituent), but rather the higher concentrations of constituents generally associated with the higher flows from which the project will be diverting. In the Sacramento River at Hamilton City, Table 6-5 shows that total mercury concentrations have been measured as high as 54 ng/L, which are higher than the CTR criterion of 50 ng/L, and raise concern for significant and substantial adverse effects when waters with these types of concentrations are diverted into the reservoir.

Table 6-5 also shows that total mercury concentrations have been measured as high as 14.4 ng/L in the Sacramento River at Red Bluff but only 0.52 ng/L in Lake Oroville. Yet these relatively low concentrations of total mercury from the water in Lake Oroville have been sufficient to cause fish from this reservoir to exceed the numeric criterion and objectives for all trophic levels of fish, including both sport and prey fish, for the protection of human health and wildlife as contained in the Sacramento–San Joaquin River Delta Estuary TMDL for Methylmercury and Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. Fish tissue concentrations as high as 0.7 mg/kg have been found in fish from Lake Oroville (DWR 2007). 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 DEIR on page 6-17 states that “in newly constructed reservoirs, the initial inundation of soils and vegetation can cause higher net methylmercury production in early years after filling, when organic carbon is relatively abundant, relative to long-term average production. This initial spike in mercury methylation can increase the concentrations of water column methylmercury to double or triple the long-term average concentrations for up to 10 years.” It also states that “the literature suggests that fish tissue concentrations of methylmercury may peak 3–8 years after filling, with concentrations slowly declining to a lower steady-state after 10–35 years.” 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.

The DEIR states on page 6-22 states that “the effects of mixtures of metals on organisms in the Sacramento River are poorly understood.” Nonetheless, the SWRCB states that when multiple constituents are found together, the combined toxicity of the multiple constituents should be evaluated. “In the absence of scientifically valid data to the contrary, Section 2550.4(g) of Chapter 15, Article 5 regulations referenced in the SWRCB’s Site Investigation and Cleanup Policy requires that theoretical risks from chemicals found together in a water body shall be considered additive for all chemicals having similar toxicological effects or having carcinogenic effects. This requirement is also found in the California hazardous waste management regulations (Title 22 of CCR, Section 66264.94(f) and in the USEPA Risk Assessment Guidance for Superfund (RAGS).” This DEIR did not consider the combined effects of metals and is therefore deficient.

The DEIR states on page 6-22 that metal concentration measurements are shown in Appendix 6E but that “this is not an exhaustive presentation of all measurements, but instead is provided to show patterns of metal concentrations at the Sites Reservoir intake locations (near Red Bluff and Hamilton City), in the CBD, and upstream of one of the potential release locations (upstream of the CBD).” The DEIR should not selectively filter the available data in order to support its contentions, but should show all data even though the data may prove contentions incorrect.

The DEIR states on page 6-23 that “for most metals there is little difference in concentration between upstream and downstream locations on the Sacramento River.” This is not true at all. Data in WDL show substantial differences between upstream and downstream locations. For example, comparing the data for the Sacramento River at Keswick to that at Red Bluff show total aluminum as 492 ug/L vs. 3,630 ug/L, total copper as 4 ug/L vs. 14.7 ug/L, total iron as 294 ug/L vs. 4,160 ug/L, and total lead as 1.56 ug/L vs. 3.14 ug/L, all substantial differences. The differences in concentrations for these and other constituents is attributed to tributary stream inflows, with the most significant in terms of both flow and contribution of these constituents being Cottonwood Creek.

The DEIR states on page 6-31 that “contaminated sediments could move into Sites Reservoir as suspended sediments during high flows, but the main supplies of contaminated sediments and their potential effects would remain in the Sacramento River channel because the amount of sediment contained in the diversions to Sites Reservoir would be small compared to what is contained in the Sacramento River channel.” The concentration of contaminated or suspended sediments would be exactly the same in the water diverted to Sites Reservoir and that in the Sacramento River at the point and time of diversion – there is no difference in sediment load. The only difference is that the Sacramento River will carry a substantially greater load of sediment due to the substantially greater flow in the Sacramento River than the amount of water diverted to the proposed reservoir.

The DEIR states on page 6-31 that “wind, rain, and wave action commonly erode bare soil adjacent to reservoirs and could cause erosion along the edge of Sites Reservoir when it is not full. These phenomena may temporarily increase turbidity along the reservoir’s edge prior to settling of the sediment, but this increase would not markedly affect beneficial uses of the reservoir (i.e., recreation, water supply, fisheries and wildlife).” Erosion of soils in the exposed inundation zone will re-suspend soils laden with metals and other contaminants, which may then contribute to impacts in the reservoir or downstream releases.

Page 6-33 states that “when Sites Reservoir would release water to the Sacramento River, it would constitute 6%–7% of the Sacramento River flow on average and 12%–13% when discharges are relatively high compared to river flow,” and therefore “water quality in Sites Reservoir would have limited effect on the water quality in the Sacramento River.” However, page 6-32 states that evapoconcentration could increase constituent concentrations in Sites Reservoir by up to 48%. Therefore, water released from Sites Reservoir to the Sacramento River could contribute higher concentrations of constituents such as metals. The DEIR does not evaluate the effects from these higher concentrations on water quality and beneficial uses of the Sacramento River. Also, during “operational exchanges” when additional water is released from Sites Reservoir and water is held back in Shasta or Oroville reservoirs, the percent of water from Sites Reservoir constituting the total flow in the Sacramento River will be increased, potentially adversely affecting water quality in the river and impacting downstream water users.

Page 6-37 discusses Harmful Algal Blooms in relation to “whether cyanobacteria and cyanotoxins may be released from the reservoir with dead pool withdrawals” and “the elevation of the low-level intake from which dead pool withdrawals would be released.” “Dead pool” usually refers to water in a reservoir that cannot be drained by gravity through a dam’s outlet works. How is the project planning on withdrawing water from the dead pool?

Page 6-42 states that the “metals analysis relies on best available data provided by DWR’s WDL” and that “these data were collected intermittently over multiple years, with measurements representing a wide range of flow conditions.” This is not true. The statement of “best available data” is an attempt to portray the WDL data as robust, which it is not. While the data were collected “intermittently over multiple years,” the data are better described as “spotty.” Sample collection for this sparse data did not target a “wide range of flow conditions,” but rather were based on a fixed schedule regardless of flow conditions. The metals data from DWR’s Water Data Library (WDL) “provide a general understanding of how metal and pesticide concentrations

may vary with flow and location, allow the identification of trends, and support the impact analysis and conclusion.” Water quality data in the WDL for diversion locations of the project are extremely limited. From the Sacramento River below the Red Bluff Diversion Dam, only 26 samples were collected by DWR between the years of 2000 and 2020 (Table 1) during the project’s primary months of diversion to storage (January through March, p. 6-32). In eight of the 20 years of data collection from this monitoring station, only one sample was collected during the primary months of diversion to storage; only two years saw four samples collected (both were drought years); in the remaining years only two to three samples were collected during the months of January through March. This pattern of data collection is even more sparse for the Sacramento River at Hamilton City (Table 2). Only 20 samples were collected from the Hamilton City monitoring site during the project’s primary months of diversion to storage. Only one sample was collected from this site in 10 of the 20 years of data collection; three samples were collected in two of the monitoring years, and four samples were collected in one year (which was a drought year). This scant yearly data collection does not “provide a general understanding of how metal and pesticide concentrations may vary with flow and location, allow the identification of trends, and support the impact analysis and conclusion.” Collection of these 26 samples was not timed to address variations in concentrations due to variations of flow, but were grab samples collected on a more or less set schedule without the intent to provide sufficient data for impact analysis for any type of storage project. Concentrations of many of the metals analyzed from these samples were found to be higher when flows were higher during sample collection. However, variation in concentrations due to flow was not considered during sample collection, and even higher concentrations of metals may be found with flows higher than those during the limited sample collection.

The project proposes to collect additional samples for metals at a frequency sufficient to better understand the relationship with variations in flow, but this is only after the project has been constructed. These post-project data would “refine the understanding of metals as more data would likely improve the accuracy of equations used in this analysis for estimating metal concentrations,” which is commendable but too late to better understand the adverse effects prior to construction of the project. The project proponents have been pursuing this project for over 20 years. They were also made aware of water quality issues related to this project from comments on the 2017 DEIR, providing ample time for additional data collection to further elucidate the issues prior to preparation of the current DEIR, but no data were collected by the project proponents. Failing this, now they propose to collect this needed data but only after the project is completed to determine the severity of the problems. This is backwards. CEQA requires impact analysis prior to approval and construction of a project, not afterwards. This project should not be constructed and then data collected to see if it will work or to determine the adverse impacts, but rather data should be collected and evaluated prior to approval of this project to determine adverse impacts and potential mitigation.

Based on the limited available data, the project focuses on only four metals (aluminum, copper, iron, and lead) considered to be of greatest concern due to seasonal changes in concentration and concentrations above standards (p. 6-42). The only “standards” considered are a “California MCL,” “California Secondary MCL,” and Freshwater Chronic Standard for Aquatic Life Protection. There are a large number of other numeric water quality thresholds applicable to this project, including California and Federal Drinking Water Standards (MCLs), California Public

Health Goals (PHGs), California State Notification and Response Levels for Drinking Water, Suggested No-Adverse-Response Levels (SNARLs), Cancer Risk Estimates, Health-based criteria from USEPA Integrated Risk Information System (IRIS), Proposition 65 Safe Harbor Levels, California Toxics Rule Criteria to Protect Human Health and Aquatic Life, USEPA Recommended Criteria to Protect Human Health and Aquatic Life, Agricultural Use Protective Limits, and Taste and Odor Based Criteria. These assessment thresholds have been summarized by the SWRCB and are presented below in Tables 3 and 4. These are the thresholds to which the proposed project should be compared, but apparently not utilized in the DEIR analyses.

In addition to the four metals considered in the DEIR, arsenic, cadmium, manganese, nickel, and zinc concentrations in water from the Sacramento River below the Red Bluff Diversion Dam as well as at Hamilton City exceed various criteria (Tables 3 and 4). The tables also show potential metal concentrations in Sites Reservoir due to evapoconcentration, as discussed on page 6-32 of the DEIR.

Cottonwood Creek is the main tributary contributor to winter flows in the Sacramento River at Red Bluff and is primarily responsible for elevated metals concentrations in the river. As an example of the influence of Cottonwood Creek on metals concentrations in the Sacramento River at Red Bluff, on March 1, 2006 when the total aluminum concentration in Cottonwood Creek was measured as 3,739 ug/L, the concentration in the Sacramento River was 2,240 ug/L (Table 5). But, similar to previous monitoring in the Sacramento River, monitoring of Cottonwood creek did not target higher flows and even higher concentrations of metals are likely to be found with the higher flows. Nor did monitoring in Cottonwood Creek always coincide with sample collection in the Sacramento River. For example, on May 5, 2005, a total aluminum concentration of 14,345 ug/L was analyzed from Cottonwood Creek, but no corresponding sample was collected from the Sacramento River. Estimating the total aluminum concentration using the concentration reported from Cottonwood Creek multiplied by the ratio of concentrations in the Sacramento River and Cottonwood Creek ((Cottonwood Cr) x (Sacramento River/Cottonwood Creek)) from March 1, 2006 yields an estimated concentration in the Sacramento River of 8,594 ug/L for May 5, 2005. This total aluminum concentration is much higher than the few measured analyses from the Sacramento River, and serves to reiterate the likelihood that even higher concentrations of metals would undoubtedly be found with more frequent monitoring and targeting of higher flows, which are the flows that would be diverted to the proposed reservoir. This same relationship applies to other metals and demonstrates that the analysis in the DEIR was not “conservative” but used the little available data to underestimate metal concentrations likely to occur. Since the project proponents have failed to collect any water quality data in the 20 years they have been promoting this project, using data projections such as that discussed above is the most appropriate measure to arrive at a reasonable evaluation.

The concentration of metals in Sites Reservoir was then calculated using the projected maximum Sacramento River concentration and applying the 48 percent evapoconcentration factor described in the DEIR. Using the “conservative” approach of the DEIR, the projected metals concentrations in the Sacramento River at Hamilton City during the May through September release period was next calculated using the maximum metal concentrations in the Sacramento River at Hamilton City (from WDL). The projected metals concentrations in the river at Hamilton City were calculated using 13 percent of the Sites Reservoir concentration after

evapoconcentration (Table 5) and 87 percent of the Sacramento River at Hamilton City concentration (WDL). The Sacramento River at Hamilton City site was used with the assumption that water quality in the river at Hamilton City would be similar to downstream water quality near Dunnigan, the river release site for Alternative 2. The projected metals concentrations in the Sacramento River at Hamilton City, even with dilution of Sites Reservoir releases with Sacramento River water, exceed various water quality objectives or promulgated criteria (Table 6).

Similar results can be expected for discharges from Sites Reservoir to the Colusa Basin Drain. Table 6 shows that concentrations of metals in the CBD, when mixed with 13 percent of water from Sites Reservoir and assuming average metal concentrations in the CBD (p. 6E-10), exceed water quality objectives or promulgated criteria for aluminum, arsenic, copper, iron, lead, manganese, and nickel. Introduction of water from Sites Reservoir to the CBD results in even higher concentrations in the CBD of most metals, including aluminum, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, and zinc.

The “evaluation of concentration assuming no settling of suspended sediment” starting on page 6-44 used data from the “November–May period of higher flows and concentrations to better focus on the range of flows that may occur when Sacramento River water would be diverted to Sites Reservoir.” This is inconsistent with other statements in the DEIR that state that the project’s primary months of diversion to storage would be January through March (page 6-32).

The DEIR states the settling of sediment entering the reservoir would substantially reduce the concentration of metals (page 6-45). Though settling of sediment (and organic matter) entering the reservoir would reduce total metal concentrations, the DEIR does not take into account resuspension of settled sediments by winds or inundation zone erosion when the reservoir level is reduced. In addition, dissolution of metals from the bottom sediments under the anoxic conditions expected to occur in the reservoir can substantially increase metals concentrations in the hypolimnion, which will become distributed throughout the water column following fall turnover. “Settling in the reservoir of 95% or more of the sediment that enters the reservoir” would create a significant source for metals in the reservoir from resuspension or dissolution during certain times of the year.

Table 1. Water Quality Data from the Sacramento River below Red Bluff during the Primary Diversion Period of January through March (D=dissolved, T=total)

Sample Date	D-Aluminum ug/L	T-Aluminum ug/L	D-Arsenic ug/L	T-Arsenic ug/L	D-Cadmium ug/L	T-Cadmium ug/L	D-Chromium ug/L	T-Chromium ug/L	D-Copper ug/L	T-Copper ug/L	D-Iron ug/L	T-Iron ug/L
1/10/05	212	322	1.11	1.18	<0.011	<0.007	1.1	1.14	1.93	2.5	143	358
2/2/05	50.1	134	0.893	0.976	<0.011	<0.066	1.35	2.42	1.67	2.04	39.8	185
3/9/05	11	97.3	1.29	1.33	<0.033	<0.011	1.21	1.23	1.39	1.84	8.1	150
1/4/06	1081	2851	1.3	1.65	0.018	0.081	2.48	7.68	6.99	9.42	811	3925
1/24/06	173	347	0.94	1.05	0.018	0.036	1.26	1.32	1.74	2.23	166	394
2/21/06	131	154	0.702	0.789	0.013	0.016	0.97	0.98	1.08	1.21	76	162
3/1/06	1459	2240	0.857	1.06	0.017	0.055	2.75	6.1	2.59	6.09	878	2854
1/10/07	41.7	91.4	1.42	1.5	<0.1	<0.1	0.55	0.59	0.92	1.01	34.9	54.3
2/26/07	212	322	0.929	0.987	<0.1	<0.1	1.2	1.61	2.55	2.8	293	376
3/21/07	9.58	51	1.41	1.46	<0.1	<0.1	0.44	0.59	1.47	1.74	21.5	85.5
1/22/08	6.82	284	1.5	1.71	<0.1	<0.1	0.53	1.15	1.45	2.04	9.5	259
2/26/08	14.2	846	0.799	0.932	<0.1	<0.1	0.33	2.49	1.97	3.88	14.6	790
3/25/08	2.25	35	1.31	1.37	<0.1	<0.1	0.42	0.55	1.7	2.09	7.8	62
2/23/09	55.6	3630	0.519	1.33	<0.1	<0.1	0.4	6.67	2.54	9.81	88.5	3740
1/25/10	127	3375	0.567	1.51	<0.1	<0.1	0.51	10.3	3.55	14.7	132	4160
2/1/10	25.5	426	0.635	0.727	<0.1	<0.1	0.3	1.07	2.14	3.34	24.1	442
3/1/10	34.0	485	0.596	0.768	<0.1	<0.1	0.33	1.6	1.55	3.03	27	574
3/23/10	1.86	13.2	1	1.06	<0.1	<0.1	0.41	0.45	1.48	2.01	8.8	33.4
1/19/11	6.75	175	0.913	1.03	<0.1	<0.1	0.57	1.22	1.54	2.42	18.6	214
1/31/11	6.26	61.4	1.17	1.18	<0.1	<0.1	0.44	0.61	1.57	1.75	9.8	69.2
2/5/13	6.69	152	1.07	1.31	<0.1	<0.1	0.33	0.56	1.23	1.66	11.4	157
2/3/14	8.61	19.3	1.92	1.93	<0.1	<0.1	0.44	0.49	0.79	0.93	31.3	46
2/3/15	4.64	169	1.29	1.62	<0.1	<0.1	0.3	0.72	1.55	3.26	10	207
2/8/16	18.7	78.8	1.23	1.33	<0.1	<0.1	0.51	0.62	1.33	1.81	23.6	104
2/6/17	130	761	0.857	1.11	<0.1	<0.1	0.46	2.11	1.64	4.67	126	729
2/13/18	4.59	23.2	1.55	1.61	<0.1	<0.1	0.58	0.71	0.96	1.22	13.2	51.2
2/18/20			1	1								
Count	26	26	27	27	4	4	26	26	26	26	26	26
Minimum	1.86	13.2	0.52	0.73	ND	ND	0.30	0.45	0.79	0.93	7.8	33.4
Average	151	659	1.07	1.24	0.02	0.05	0.78	2.11	1.90	3.44	117	776
Maximum	1459	3630	1.92	1.93	0.018	0.081	2.75	10.3	6.99	14.7	878	4160

Table 1. Continued

Sample Date	D-Lead ug/L	T-Lead ug/L	D-Manganese ug/L	T-Manganese ug/L	T-Mercury ng/L	D-Nickel ug/L	T-Nickel ug/L	D-Selenium ug/L	T-Selenium ug/L	D-Silver ug/L	T-Silver ug/L	D-Zinc ug/L	T-Zinc ug/L
1/10/05	0.045	0.144	1.38	10.5	ND	1.02	1.6	0.29	0.3	<0.003	0.003	1.67	3.91
2/2/05	0.021	0.075	1.11	7.66	ND	0.9	1.32	ND	ND	<0.001	0.003	1.64	3.15
3/9/05	0.012	0.072	0.64	6.24	ND	0.77	1.2	ND	0.22	<0.001	ND	0.41	2.48
1/4/06	0.575	1.51	10.7	113	ND	2.94	12.2	ND	0.35	<0.001	0.015	7.63	18.8
1/24/06	0.048	0.147	7.25	15.6	ND	1.46	2.11	ND	0.19	<0.005	ND	2.49	3.76
2/21/06	ND	0.049	2.37	5.71	ND	1.53	1.82	ND	0.15	<0.009	ND	1.45	1.99
3/1/06	0.274	1.1	13.5	78.9	ND	2.84	8.57	ND	0.16	<0.009	ND	4.49	13.2
1/10/07	ND	ND	1.37	3.13	0.59	0.97	1.02	ND	ND	<0.03	ND	0.71	2.82
2/26/07	0.149	0.234	6.41	10.2	2.6	1.14	1.49	0.2	0.28	<0.03	ND	3.09	5.68
3/21/07	ND	0.04	1.27	4.8	ND	0.84	0.97	ND	0.2	<0.03	ND	0.38	3.58
1/22/08	ND	0.13	0.73	12.9	ND	0.91	1.08	ND	ND	<0.03	ND	1.33	4.59
2/26/08	ND	0.388	0.58	23.4	ND	1.58	3	ND	0.21	<0.03	ND	0.97	6.85
3/25/08	ND	ND	0.36	6.12	ND	0.71	0.95	ND	0.25	<0.03	ND	0.44	3.11
2/23/09	ND	2.25	1.33	133	ND	1.44	9.9	ND	ND	<0.03	ND	1.28	26
1/25/10	0.069	3.14	1.93	144	ND	13.2	15.7	0.26	0.88	<0.03	0.099	0.76	0.88
2/1/10	ND	0.245	0.74	17.2	ND	1.9	2.01	ND	ND	<0.03	ND	2.09	8.08
3/1/10	ND	0.338	0.88	23.1	ND	0.96	2.44	0.2	0.21	<0.03	ND	0.98	6.09
5/23/10	ND	ND	0.52	3.24	ND	0.6	0.67	0.51	0.61	<0.03	ND	0.19	1.95
1/19/11	ND	0.172	0.86	12.2	ND	1.17	1.38	0.22	0.24	<0.03	ND	1.62	4.38
1/31/11	ND	ND	0.58	5.32	ND	0.81	0.96	ND	ND	<0.03	ND	2.32	4.08
2/5/13	ND	0.055	0.32	4.75	1.2	0.52	0.8	ND	ND	<0.03	ND	1.13	2.84
2/3/14	ND	ND	2.88	4.57	0.7	0.43	0.5	ND	ND	<0.03	ND	0.65	1.09
2/3/15	ND	0.166	0.19	4.75	3.4	0.93	1.3	ND	ND	<0.03	ND	0.88	4.43
1/8/16	ND	0.065	0.32	6.73	1.5	0.82	1.19	0.25	0.28	<0.03	ND	0.94	2.53
2/6/17	ND	0.575	2.78	31.1	ND	1.41	3.89	ND	0.26	<0.03	ND	0.78	7.37
2/13/18	ND	ND	0.34	3.16	ND	1.32	1.7	ND	ND	<0.03	ND	0.29	0.56
2/18/20													
Count	8	20	26	26	6	26	26	7	18	0	4	28	26
Minimum	ND	ND	0.15	3.13	ND	0.43	0.50	ND	ND	ND	ND	0.19	0.56
Average	0.149	0.54	2.35	27	1.7	1.7	3.0	0	0	ND	0	1.56	6
Maximum	0.575	3.14	13.5	144	3.4	13.2	15.7	0.5	0.88	ND	0.099	7.63	26

Table 2. Water Quality Data from the Sacramento River at Hamilton City during the Primary Diversion Period of January through March (D=dissolved, T=total)

Sample Date	D-Aluminum µg/L	T-Aluminum µg/L	D-Arsenic µg/L	T-Arsenic µg/L	D-Cadmium µg/L	T-Cadmium µg/L	D-Chromium µg/L	T-Chromium µg/L	D-Copper µg/L	T-Copper µg/L	D-Iron µg/L	T-Iron µg/L
1/10/05	352	413	1.48	1.55	<0.011	<0.007	1.06	1.44	1.98	2.45	225	443
2/2/05	77.5	163	1.42	1.51	<0.011	<0.066	1.67	1.88	1.53	1.73	71.5	223
3/10/05	11	75.7	2.03	2.08	<0.033	<0.011	1.29	1.39	1.09	1.37	<3.34	118
1/4/06	866	3462	1.61	2.35	0.014	0.092	2.61	9.74	2.47	11.2	569	4787
1/24/06	359	709	1.41	1.49	0.011	0.042	1.51	2.4	1.62	2.92	214	923
2/21/06	222	733	1.3	1.47	0.014	0.029	1.18	2.34	1.12	2.55	139	913
3/1/06	2887	4955	1.36	1.85	0.021	0.087	4.99	11.2	4.26	11.5	1773	6116
1/9/07	61.6	138	2.08	2.23	<0.1	<0.1	0.66	0.69	0.9	1.04	46.3	79.1
2/26/07	478	657	1.31	1.42	<0.1	<0.1	1.81	1.91	2.99	3.9	591	916
3/20/07	16.1	91.6	2.17	2.36	<0.1	<0.1	0.41	0.71	1.22	1.55	26.6	154
2/20/08	5.62	85.8	2.04	2.27	<0.1	<0.1	0.49	0.78	1.09	1.26	7.4	105
2/24/09	51.1	3110	1.62	4.07	<0.1	<0.1	0.47	7.07	2.03	8.21	68.6	3210
2/2/10	12	340	1.37	1.43	<0.1	<0.1	0.36	1.05	1.76	3.65	17.1	383
2/1/11	5.73	53.6	1.9	1.96	<0.1	<0.1	0.43	0.55	1.29	1.41	12	59.6
1/31/12	178	276	2.04	2.2	<0.1	<0.1	0.52	0.6	1	1.33	94.1	162
2/6/13	3.6	127	1.98	2	<0.1	<0.1	0.32	0.75	1.1	1.32	8.2	124
2/4/14	0.19	6.03	2.7	2.88	<0.1	<0.1	0.52	1.31	0.72	0.85	6.2	26.2
2/10/15	21.2	1960	1	2.14	<0.1	<0.1	0.33	5.3	1.96	8	63.2	2100
2/3/16	39.7	352	1.26	1.49	<0.1	<0.1	0.44	1.73	1.15	2.14	42.8	349
2/6/17	136	1020	1.16	1.67	<0.1	<0.1	0.52	3.85	1.79	5.78	138	1100
Count	20	20	20	20	20	20	20	20	20	20	20	20
Minimum	0.19	6.03	1.00	1.42	0.011	0.029	0.32	0.55	0.72	0.85	6.2	26.2
Average	289	936	1.66	2.02	0.02	0.06	1.08	2.83	1.65	3.71	216	1115
Maximum	2887	4955	2.7	4.07	0.021	0.092	4.99	11.2	4.26	11.5	1773	6116



Table 2. Continued

Sample Date	D-Lead µg/L	T-Lead µg/L	D-Manganese µg/L	T-Manganese µg/L	T-Mercury ng/L	D-Nickel µg/L	T-Nickel µg/L	D-Selenium µg/L	T-Selenium µg/L	D-Silver µg/L	T-Silver µg/L	D-Zinc µg/L	T-Zinc µg/L
1/10/05	0.064	0.168	2.22	12.4	N/A	1.39	1.98	0.3	0.34	<0.003	<0.002	1.54	3.1
2/2/05	0.029	0.084	2.54	10.6	N/A	1.02	1.53	<0.222	0.27	0.002	0.003	0.95	1.96
3/10/05	0.008	0.049	0.98	6.37	N/A	0.87	1.24	<0.245	<0.19	<0.001	<0.036	0.36	1.06
1/4/06	0.191	1.89	9.75	134	N/A	2.67	15.4	<0.149	0.22	<0.001	0.021	2.24	20.8
1/24/06	0.062	0.306	9.24	32.4	N/A	1.68	3.32	<0.186	0.19	<0.005	<0.005	1.55	4.71
2/21/06	0.046	0.299	5.83	27.5	N/A	1.53	3.32	<0.149	0.3	<0.009	<0.009	1	3.94
3/1/06	0.648	2.04	23.2	146	N/A	4.69	15.7	<0.149	0.29	<0.009	<0.009	5.79	21.7
1/9/07	<0.04	<0.04	2.22	5.24	0.68	1.01	1.08	<0.2	<0.2	<0.03	<0.03	0.64	2.57
2/26/07	0.262	0.581	10.3	28.8	2.8	2.22	2.99	<0.2	0.23	<0.03	<0.03	3.68	8.39
3/20/07	<0.04	0.056	2.01	8.22	1.6	0.85	1.22	<0.2	<0.2	<0.03	<0.03	0.31	2.82
2/20/08	<0.04	0.041	0.7	8.15	N/A	0.88	0.95	<0.2	0.22	<0.03	<0.03	0.71	3.31
2/24/09	<0.04	1.47	1.28	101	N/A	2.59	11	0.2	0.25	<0.03	<0.03	0.52	14.3
2/2/10	<0.04	0.188	1.01	17.1	N/A	1.78	2.08	<0.2	<0.2	<0.03	<0.03	1.39	5.43
2/1/11	<0.04	<0.04	0.67	6.4	N/A	0.71	0.9	<0.2	<0.2	<0.03	<0.03	0.76	2.68
1/31/12	<0.04	<0.04	1.87	9.58	N/A	0.68	1.11	<0.2	<0.2	<0.03	<0.03	1.17	2.32
2/6/13	<0.04	<0.04	0.35	5.45	1.3	0.44	0.65	<0.2	<0.2	<0.03	<0.03	0.93	1.45
2/4/14	<0.04	<0.04	0.35	2.17	0.8	0.54	0.69	<0.2	0.21	<0.03	<0.03	0.21	0.97
2/10/15	<0.04	1.52	0.96	59.6	29.1	1.36	6.88	0.26	0.31	<0.03	0.037	0.38	13.9
2/3/16	<0.04	0.204	0.62	17.7	3.5	1.26	2.47	0.21	0.28	<0.03	<0.03	0.75	2.98
2/6/17	<0.04	0.945	3.35	43	N/A	1.08	5.36	0.36	0.37	<0.03	<0.03	0.86	9.16
Count	20	20	20	20	20	20	20	20	20	20	20	20	20
Minimum	0.008	0.041	0.35	2.17	0.68	0.44	0.65	0.2	0.19	0.002	0.003	0.21	0.97
Average	0.16	0.66	3.97	34.08	5.68	1.46	3.99	0.27	0.27	0.00	0.02	1.29	6.38
Maximum	0.648	2.04	23.2	146	29.1	4.69	15.7	0.36	0.37	0.002	0.037	5.79	21.7

Table 3. Water Quality Objectives, Numeric Thresholds, and Exceedances for the Sacramento River below Red Bluff

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WQI Data				Evapoconcentrated			
		Source of Numeric Threshold <i>(footnotes in parentheses are at bottom of table)</i>	Numeric Threshold ug/L	G=Groundwater IS=Inland SW E=EB/Estuary O=Ocean	Dissolved		Total		Dissolved		Total	
					Max ug/L	Min	Max	Min	Max	Min	Max	Min
Aluminum					1459	1.86	3630	13.2	2159	2.75	5372.4	19.5
	Chemical Constituents	California Primary MCL	1,000	G & IS	X		X		X		X	
		California Secondary MCL	200	G & IS	X		X		X		X	
		Water Quality for Agriculture (Ayers & Westcot)	5,000	G & IS							X	
	Tastes and Odors	California Secondary MCL	200	G & IS	X		X		X		X	
	Toxicity - humans	California Public Health Goal for Drinking Water	600	G & IS	X		X		X		X	
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, total (f)	87	IS	X		X		X		X	
		USEPA National Recomm. WQ Criteria, 1-hour avg, total (f)	750	IS	X		X		X		X	
Arsenic					1.92	0.52	1.93	0.73	2.84	0.77	2.8564	1.08
	Chemical Constituents	California Primary MCL	10	G & IS								
		Water Quality for Agriculture (Ayers & Westcot)	100	G & IS								
	Toxicity - humans	California Public Health Goal for Drinking Water	0.004	G & IS	X	X	X	X	X	X	X	X
		USEPA National Recomm. WQ Criteria, water & fish consump.	0.018	IS	X	X	X	X	X	X	X	X
		USEPA National Recomm. WQ Criteria, fish consumption	0.14	E & O	X	X	X	X	X	X	X	X
		Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.023	G & IS	X	X	X	X	X	X	X	X
		USEPA Health Advisory for drinking water	0.02	G & IS	X	X	X	X	X	X	X	X
		California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity	0.05	G & IS	X	X	X	X	X	X	X	X
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	150	IS								
		California Toxics Rule (USEPA), 1-hour average (dissolved)	340	IS								
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	36	E								
		California Toxics Rule (USEPA), 1-hour average (dissolved)	88	E								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	8	O								
		Aquatic Life Protection Objective, daily maximum	32	O								
		Aquatic Life Protection Objective, instantaneous maximum	80	O								
Cadmium					0.02	ND	0.081	ND	0.03	ND	0.11988	ND
	Chemical Constituents	California Primary MCL	5	G & IS								
		Water Quality for Agriculture (Ayers & Westcot)	10	G & IS								
	Toxicity - humans	California Public Health Goal for Drinking Water	0.04	G & IS			X				X	
		Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.023	G & IS			X		X		X	
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	1.1	IS								
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	1.6	IS								
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8.3	E & O								
		California Toxics Rule (USEPA), 1-hour average, dissolved	42	E & O								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	1	O								
		Aquatic Life Protection Objective, daily maximum	4	O								
		Aquatic Life Protection Objective, instantaneous maximum	10	O								
Chromium (III)					2.75	0.3	10.3	0.45	4.07	0.44	15.244	0.67
	Chemical Constituents	California Primary MCL (total chromium)	50	G & IS								
	Toxicity - humans	USEPA IRIS Reference Dose (r)	10,000	G & IS								
		Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.07	G & IS	X	X	X	X	X	X	X	X
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, dissolved (f)	84	IS								
		National Toxics Rule (USEPA), 1-hour average, dissolved (f)	260	IS								
	CA Ocean Plan - humans	Human Health Protection Objective, fish consumption	190,000	O								
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, acute tox info / 10	1,030	E & O								

Table 3. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			G=Groundwater IS=Inland SW E=EBC/Estuary O=Ocean	WDL Data				Evapoconcentrated			
		Source of Numeric Threshold <i>(footnotes in parentheses are at bottom of table)</i>	Numeric Threshold ug/L	G & IS		Dissolved		Total		Dissolved		Total	
						Max ug/L	Min	Max	Min	Max	Min	Max	Min
Copper						6.99	0.79	14.7	0.93	10.3	1.17	21.756	1.38
	Chemical Constituents	California Primary MCL	1,300	G & IS									
		California Secondary MCL	1,000	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS									
	Tastes and Odors	California Secondary MCL & USEPA Nat. Rec. WQ Criteria	1,000	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	300	G									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	1300	IS									
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	4.1	IS		x		x		x		x	
		California Toxics Rule (USEPA), 1-hour average, dissolved (j)	5.7	IS		x		x		x		x	
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	3.1	E		x		x		x		x	
		California Toxics Rule (USEPA), 1-hour average, dissolved	4.8	E		x		x		x		x	
	CA Ocean Plan - eq life	Aquatic Life Protection Objective, 6-month median	3	O		x		x		x		x	
		Aquatic Life Protection Objective, daily maximum	12	O				x				x	
		Aquatic Life Protection Objective, instantaneous maximum	30	O									
Iron						878	7.8	4160	33.4	1299	11.5	6156.8	49.4
	Chemical Constituents	California Secondary MCL	300	G & IS		x		x		x		x	
		Water Quality for Agriculture (Ayers & Westcot)	5,000	G & IS									
	Tastes and Odors	California Secondary MCL	300	G & IS		x		x		x		x	
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day average	1,000	IS				x		x		x	
Lead						0.58	ND	3.14	ND	0.85	ND	4.6472	ND
	Chemical Constituents	California Primary MCL	15	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	5,000	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	0.2	G & IS		x		x		x		x	
		California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity	0.26	G & IS		x		x		x		x	
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	0.92	IS				x				x	
		California Toxics Rule (USEPA), 1-hour average, dissolved (j)	24	IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	0.1	E									
		California Toxics Rule (USEPA), 1-hour average, dissolved	210	E									
	CA Ocean Plan - eq life	Aquatic Life Protection Objective, 6-month median	2	O				x				x	
		Aquatic Life Protection Objective, daily maximum	8	O									
		Aquatic Life Protection Objective, instantaneous maximum	20	O									
Manganese						13.5	0.19	144	3.13	20	0.28	213.12	4.63
	Chemical Constituents	California Secondary MCL	90	G & IS				x				x	
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS									
	Tastes and Odors	California Secondary MCL	50	G & IS				x				x	
	Toxicity - humans	California DPH Notification Level for drinking water	500	G & IS									
		USEPA National Recomm. WQ Criteria, fish consumption	100	IS & E & O				x				x	
Mercury								0.0034	ND			0.00503	ND
	Chemical Constituents	California Primary MCL	2	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	1.2	G									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	0.05	IS									
		California Toxics Rule (USEPA) for other waters	0.051	IS & E									
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.77	IS									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.4	IS									
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.04	E & O									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.8	E & O									
	CA Ocean Plan - eq life	Aquatic Life Protection Objective, 6-month median	0.04	O									
		Aquatic Life Protection Objective, daily maximum	0.16	O									
		Aquatic Life Protection Objective, instantaneous max	0.4	O									

Table 3. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			G=Groundwater IS=Inland SW E=EB/Estuary O=Ocean	WDL Data				Evapoconcentrated				
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L	Max		Min	Max	Min	Max	Min	Max	Min		
													ug/L	ug/L
Nickel														
	Chemical Constituents	California Primary MCL	100		G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	200		G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	12		G	x		x		x		x		
		USEPA National Recomm. WQ Criteria, fish consumption	4,600		IS & E & O									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	610		IS									
		California Toxics Rule (USEPA) for other waters	4,600		IS & E									
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	24		IS									
		California Toxics Rule (USEPA), 1-hour average, dissolved (i)	220		IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	6		E	x		x		x		x		
		California Toxics Rule (USEPA), 1-hour average, dissolved	74		E									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	5		O	x		x		x		x		
		Aquatic Life Protection Objective, daily maximum	20		O								x	
		Aquatic Life Protection Objective, instantaneous maximum	50		O									
Selenium						0.51	ND	0.88	ND	0.75	ND	1.30		
	Chemical Constituents	California Primary MCL	60		G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	20		G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	38		G & IS									
		USEPA National Recomm. WQ Criteria, water & fish consump.	170		IS									
		USEPA National Recomm. WQ Criteria, fish consumption	4,200		E & O									
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, total	5		IS									
		National Toxics Rule (USEPA), 1-hour average, total	20		IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	71		E									
		California Toxics Rule (USEPA), 1-hour average, dissolved	280		E									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	15		O									
		Aquatic Life Protection Objective, daily maximum	60		O									
		Aquatic Life Protection Objective, instantaneous maximum	150		O									
Zinc						7.63	0.19	26	0.56	11.3	0.28	38.5	0.83	
	Chemical Constituents	California Secondary MCL	5,000		G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	2,000		G & IS									
	Tastes and Odors	California Secondary MCL	5,000		G & IS									
	Toxicity - humans	USEPA IRIS Reference Dose (c)	2,100		G & IS									
		USEPA National Recomm. WQ Criteria, water & fish consump.	7,400		IS									
		USEPA National Recomm. WQ Criteria, fish consumption	26,000		E & O									
	CTR - fw aquatic life	California Toxics Rule (USEPA), 1-hour average, dissolved (f)	54		IS									
		California Toxics Rule (USEPA), 4-day average, dissolved (f)	54		IS									
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	81		E & O									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	90		E & O									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective for Lead, 6-month median	20		O			x				x		
		Aquatic Life Protection Objective for Lead, daily maximum	80		O									
		Aquatic Life Protection Objective for Lead, instantaneous max	200		O									

Table 4. Water Quality Objectives, Numeric Thresholds, and Exceedances for the Sacramento River at Hamilton City

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WDL Data				Evapoconcentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L		Dissolved		Total		Dissolved		Total	
					Max	Min	Max	Min	Max	Min	Max	Min
					ug/L		ug/L		ug/L		ug/L	
Aluminum					2887	0.19	4955	6.03	4273	0.28	7333	8.92
Chemical Constituents	California Primary MCL	1,000	G & IS	x		x		x		x		
	California Secondary MCL	200	G & IS	x		x		x		x		
	Water Quality for Agriculture (Ayers & Westcott)	5,000	G & IS								x	
Tastes and Odors	California Secondary MCL	200	G & IS	x		x		x		x		
Toxicity - humans	California Public Health Goal for Drinking Water	600	G & IS	x		x		x		x		
Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, total (f)	87	IS	x		x		x		x		
	USEPA National Recomm. WQ Criteria, 1-hour avg, total (f)	750	IS	x		x		x		x		
Arsenic					2.7	1.00	4.07	1.42	4.0	1.48	6.02	2.10
Chemical Constituents	California Primary MCL	10	G & IS									
	Water Quality for Agriculture (Ayers & Westcott)	100	G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water	0.004	G & IS	x	x	x	x	x	x	x	x	x
	USEPA National Recomm. WQ Criteria, water & fish consump.	0.016	IS	x	x	x	x	x	x	x	x	x
	USEPA National Recomm. WQ Criteria, fish consumption	0.14	E & O	x	x	x	x	x	x	x	x	x
	Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.023	G & IS	x	x	x	x	x	x	x	x	x
	California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity	0.06	G & IS	x	x	x	x	x	x	x	x	x
	USEPA IRIS Reference Dose Drinking Water Health Advisories	2.1	G & IS	x		x		x		x		x
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	150	IS									
	California Toxics Rule (USEPA), 1-hour average (dissolved)	340	IS									
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	36	E									
	California Toxics Rule (USEPA), 1-hour average (dissolved)	60	E									
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	8	O									
	Aquatic Life Protection Objective, daily maximum	32	O									
	Aquatic Life Protection Objective, instantaneous maximum	80	O									
Cadmium					0.021	ND	0.092	ND	0.031	ND	0.136	ND
Chemical Constituents	California Primary MCL	5	G & IS									
	Water Quality for Agriculture (Ayers & Westcott)	10	G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water	0.04	G & IS			x					x	
	Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.0023	G & IS	x		x		x		x		x
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	1.1	IS									
	California Toxics Rule (USEPA), 1-hour average, dissolved (f)	1.6	IS									
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	9.3	E & O									
	California Toxics Rule (USEPA), 1-hour average, dissolved	42	E & O									
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	1	O									
	Aquatic Life Protection Objective, daily maximum	4	O									
	Aquatic Life Protection Objective, instantaneous maximum	10	O									

Table 4. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WDL Data				Evapocentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L	Dissolved		Total		Dissolved		Total		
				Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	
Chromium (III)				4.99	0.32	11.2	0.55	7.39	0.47	16.6	0.814	
Chemical Constituents	California Primary MCL (total chromium)		50 G & IS									
Toxicity - humans	USEPA IRIS Reference Dose (c)		10,500 G & IS									
	Cal EPA/OEHHA - California Public Health Goal		0.02 G & IS	x	x	x	x	x	x	x	x	
	Cal EPA - One in a million incremental cancer risk estimate for drinking water		0.07 G & IS	x	x	x	x	x	x	x	x	
NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, dissolved (i)		84 IS									
	National Toxics Rule (USEPA), 1-hour average, dissolved (j)		269 IS									
CA Ocean Plan - humans	Human Health Protection Objective, fish consumption		198,000 O									
Toxicity - sw aquatic life	USEPA National Recurrem. WQ Criteria, acute tox info / 10		1,030 E & O									
Copper				4.26	0.72	11.5	0.85	6.30	1.07	17.0	1.258	
Chemical Constituents	California Primary MCL		1,300 G & IS									
	California Secondary MCL		1,000 G & IS									
	Water Quality for Agriculture (Ayens & Westcot)		209 G & IS									
Tastes and Odors	California Secondary MCL & USEPA Nat. Rec. WQ Criteria		1,000 G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water		309 G									
CTR - humans	California Toxics Rule (USEPA) for sources of drinking water		1300 IS									
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (i)		4.1 IS	x		x		x		x		
	California Toxics Rule (USEPA), 1-hour average, dissolved (j)		5.7 IS			x		x		x		
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved		3.1 E	x		x		x		x		
	California Toxics Rule (USEPA), 1-hour average, dissolved		4.8 E			x		x		x		
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median		3 O	x		x		x		x		
	Aquatic Life Protection Objective, daily maximum		12 O							x		
	Aquatic Life Protection Objective, instantaneous maximum		30 O									
Iron				1773	6.2	6116	26.2	2624	9.18	9052	38.8	
Chemical Constituents	California Secondary MCL		309 G & IS	x		x		x		x		
	Water Quality for Agriculture (Ayens & Westcot)		5,000 G & IS			x				x		
Tastes and Odors	California Secondary MCL		309 G & IS	x		x		x		x		
Toxicity - fw aquatic life	USEPA National Recurrem. WQ Criteria, 4-day average		1,000 IS	x		x		x		x		
Lead				0.648	0.008	2.04	0.041	0.959	ND	3.02	ND	
Chemical Constituents	California Primary MCL		15 G & IS									
	Water Quality for Agriculture (Ayens & Westcot)		5,000 G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water		0.2 G & IS	x		x		x		x		
	Cal EPA - One in a million incremental cancer risk estimate for drinking water		0.2 G & IS	x		x		x		x		
	California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity		0.25 G & IS	x		x		x		x		
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (i)		0.92 IS			x		x		x		
	California Toxics Rule (USEPA), 1-hour average, dissolved (j)		24 IS									
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved		8.1 E									
	California Toxics Rule (USEPA), 1-hour average, dissolved		219 E									
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median		2 O			x				x		
	Aquatic Life Protection Objective, daily maximum		8 O									
	Aquatic Life Protection Objective, instantaneous maximum		20 O									

Table 4. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion				WDL Data				Evapoconcentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L		Dissolved		Total		Dissolved		Total		
					Max ug/L	Min	Max	Min	Max	Min	Max	Min	
Manganese					23.2	0.35	146	2.17	34.3	0.52	216	3.21	
	Chemical Constituents	California Secondary MCL	90	G & IS			x				x		
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS							x		
	Tastes and Odors	California Secondary MCL	90	G & IS			x				x		
	Toxicity - humans	California DPH Notification Level for drinking water	500	G & IS									
		USEPA National Recomm. WQ Criteria, fish consumption	100	E & O			x				x		
Mercury							0.025	#####			0.0431	0.00101	
	Chemical Constituents	California Primary MCL	2	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	1.2	G									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	0.05	IS									
		California Toxics Rule (USEPA) for other waters	0.051	IS & E									
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.77	IS									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.4	IS									
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.94	E & O									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.8	E & O									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	0.04	O									
		Aquatic Life Protection Objective, daily maximum	0.16	O									
		Aquatic Life Protection Objective, instantaneous max	0.4	O									
Nickel					4.69	0.44	15.7	0.65	6.94	0.65	23.2	0.96	
	Chemical Constituents	California Primary MCL	100	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	12	G			x				x		
		USEPA National Recomm. WQ Criteria, fish consumption	4,600	E & O									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	616	IS									
		California Toxics Rule (USEPA) for other waters	4,600	IS & E									
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	24	IS									
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	220	IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8	E			x				x		
		California Toxics Rule (USEPA), 1-hour average, dissolved	74	E									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	5	O			x		x		x		
		Aquatic Life Protection Objective, daily maximum	20	O							x		
		Aquatic Life Protection Objective, instantaneous maximum	80	O									
Selenium					0.36	0.20	0.37	0.19	0.53	ND	0.55	ND	
	Chemical Constituents	California Primary MCL	80	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	20	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	30	G & IS									
		USEPA National Recomm. WQ Criteria, water & fish consump.	170	IS									
		USEPA National Recomm. WQ Criteria, fish consumption	4,200	E & O									
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, total	5	IS									
		National Toxics Rule (USEPA), 1-hour average, total	20	IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	71	E									
		California Toxics Rule (USEPA), 1-hour average, dissolved	290	E									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	15	O									
		Aquatic Life Protection Objective, daily maximum	60	O									
		Aquatic Life Protection Objective, instantaneous maximum	150	O									

Table 4. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WDL Data				Evaporconcentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L		Dissolved		Total		Dissolved		Total	
					Max	Min	Max	Min	Max	Min	Max	Min
					ug/L		ug/L		ug/L		ug/L	
Zinc					5.79	0.21	21.7	0.97	8.5692	0.31	32.1	1.44
	Chemical Constituents	California Secondary MCL	5,000	G & IS								
		Water Quality for Agriculture (Ayers & Westcott)	2,000	G & IS								
	Tastes and Odors	California Secondary MCL	5,000	G & IS								
	Toxicity - humans	USEPA IRIS Reference Dose (c)	2,100	G & IS								
		USEPA National Recomm. WQ Criteria, water & fish consump.	7,400	IS								
		USEPA National Recomm. WQ Criteria, fish consumption	26,000	E & O								
	CTR - fw aquatic life	California Toxics Rule (USEPA), 1-hour average, dissolved (f)	54	IS								
		California Toxics Rule (USEPA), 4-day average, dissolved (f)	54	IS								
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	81	E & O								
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	90	E & O								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective for Lead, 6-month median	20	O			x				x	
		Aquatic Life Protection Objective for Lead, daily maximum	80	O								
		Aquatic Life Protection Objective for Lead, instantaneous max	200	O								



Table 5 Projected Metals Concentrations

	Sample Date	D-Aluminum ug/L	T-Aluminum ug/L	D-Arsenic ug/L	T-Arsenic ug/L	D-Cadmium ug/L	T-Cadmium ug/L	D-Chromium ug/L	T-Chromium ug/L
Cottonwood Creek	3/1/06	2533	3739	0.889	1.16	0.009	0.023	8.2	15.7
Sacramento R below Red Bluff	3/1/06	1459	2240	0.857	1.06	0.017	0.055	2.75	6.1
Multiplication Factor (SacR/CottonwoodCr)		0.6	0.6	1.0	0.9	1.9	2.4	0.3	0.4
Maximum Cottonwood Creek Concentration		2533	14345	0.889	3.04	0.009	0.085	8.2	36.5
Projected Maximum Sacramento River Concentration		1459	8594	0.857	2.78	0.017	0.203	2.75	14.2
Sites Reservoir Concentration after Evapoconcentration (48 percent)		2159	12719	1.27	4.11	0.025	0.30	4.07	21.0
Sacramento River at Hamilton City (May through September, WDI)		1075	6686	2.36	3.17	0.007	0.076	2.69	18.9
Effects of Sites Reservoir Releases on Water Quality in the Sacramento River at Hamilton City		1216	7470	2.22	3.29	0.009	0.105	2.87	19.17

	Sample Date	D-Copper ug/L	T-Copper ug/L	D-Iron ug/L	T-Iron ug/L	D-Lead ug/L	T-Lead ug/L	D-Manganese ug/L	T-Manganese ug/L
Cottonwood Creek	3/1/06	3.22	7.63	1760	5793	0.491	1.53	30.8	138
Sacramento R below Red Bluff	3/1/06	2.59	6.09	878	2854	0.274	1.1	13.5	78.9
Multiplication Factor (SacR/CottonwoodCr)		0.8	0.8	0.5	0.5	0.6	0.7	0.4	0.6
Maximum Cottonwood Creek Concentration		4.43	39.2	1760	23594	0.491	7.26	30.8	563
Projected Maximum Sacramento River Concentration		3.56	31.29	878	11624	0.274	5.2	13.5	322
Sites Reservoir Concentration after Evapoconcentration (48 percent)		5.27	46.3	1299	17209	0.41	7.7	20.0	476
Sacramento River at Hamilton City (May through September, WDI)		3.11	18.7	726	10052	0.202	3.24	7.33	272
Effects of Sites Reservoir Releases on Water Quality in the Sacramento River at Hamilton City		3.39	22.29	801	10982	0.228	3.82	8.97	299

	Sample Date	D-Nickel ug/L	T-Nickel ug/L	D-Selenium ug/L	T-Selenium ug/L	D-Silver ug/L	T-Silver ug/L	D-Zinc ug/L	T-Zinc ug/L
Cottonwood Creek	3/1/06	7.35	20.9	0	0.15	ND	ND	3.64	13.6
Sacramento R below Red Bluff	3/1/06	2.84	8.57	0	0.16	ND	ND	4.49	13.2
Multiplication Factor (SacR/CottonwoodCr)		0.4	0.4	1.0	1.1	-	-	1.2	1.0
Maximum Cottonwood Creek Concentration		7.35	57.9	0.74	0.81	0.039	0.181	3.64	72
Projected Maximum Sacramento River Concentration		2.84	23.7	0.74	0.86	-	-	4.49	70
Sites Reservoir Concentration after Evapoconcentration (48 percent)		4.20	35.1	1.10	1.28	-	-	6.55	103
Sacramento River at Hamilton City (May through September, WDI)		2.75	10.7	0.34	0.35	0.018	2.11	2.46	35

Table 6. Projected metals concentrations in the Sacramento River at Hamilton City and CBD with dilution of Sites Reservoir water in the respective water bodies

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion				Sacramento River at Hamilton City		Cofusa Basin Drain	
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold	Units	G=Groundwater IS=Inland SW E=EB/Estuary O=Ocean	Dissolved	Total	Dissolved	Total
Aluminum						1216	7470	338	2542
	Chemical Constituents	California Primary MCL	1,000	ug/L	G & IS	x	x		x
		California Secondary MCL	200	ug/L	G & IS	x	x		x
		Water Quality for Agriculture (Ayens & Westcot)	5,000	ug/L	G & IS		x		
	Tastes and Odors	California Secondary MCL	200	ug/L	G & IS	x	x		x
	Toxicity - humans	California Public Health Goal for Drinking Water	600	ug/L	G & IS	x	x		x
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg. total (f)	87	ug/L	IS	x	x		x
		USEPA National Recomm. WQ Criteria, 1-hour avg. total (f)	750	ug/L	IS	x	x		x
Arsenic						2.22	3.29	3.85	4.67
	Chemical Constituents	California Primary MCL	10	ug/L	G & IS				
		Water Quality for Agriculture (Ayens & Westcot)	100	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	0.004	ug/L	G & IS	x	x	x	x
		USEPA National Recomm. WQ Criteria, water & fish consump.	0.018	ug/L	IS	x	x	x	x
		USEPA National Recomm. WQ Criteria, fish consumption	0.14	ug/L	E & O	x	x	x	x
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	150	ug/L	IS				
		California Toxics Rule (USEPA), 1-hour average (dissolved)	340	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	38	ug/L	E				
		California Toxics Rule (USEPA), 1-hour average (dissolved)	88	ug/L	E				
	CA Ocean Plan - sq life	Aquatic Life Protection Objective, 6-month median	8	ug/L	G				
		Aquatic Life Protection Objective, daily maximum	32	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	80	ug/L	O				
Cadmium						0.009	0.105	0.054	0.089
	Chemical Constituents	California Primary MCL	5	ug/L	G & IS				
		Water Quality for Agriculture (Ayens & Westcot)	10	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	0.04	ug/L	G & IS		x		
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	1.1	ug/L	IS				
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	1.6	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	9.9	ug/L	E & O				
		California Toxics Rule (USEPA), 1-hour average, dissolved	43	ug/L	E & O				
	CA Ocean Plan - sq life	Aquatic Life Protection Objective, 6-month median	1	ug/L	G				
		Aquatic Life Protection Objective, daily maximum	4	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	10	ug/L	O				
Chromium (III)						2.87	19.17	1.14	5.95
	Chemical Constituents	California Primary MCL (total chromium)	50	ug/L	G & IS				
	Toxicity - humans	USEPA IRIS Reference Dose (c)	10,500	ug/L	G & IS				
	WTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, dissolved (f)	84	ug/L	IS				
		National Toxics Rule (USEPA), 1-hour average, dissolved (f)	260	ug/L	IS				
	CA Ocean Plan - humans	Human Health Protection Objective, fish consumption	190,000	ug/L	O				
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, acute tox info / 10	1,030	ug/L	E & O				
Copper						3.39	22.29	3.24	11
	Chemical Constituents	California Primary MCL	1,300	ug/L	G & IS				
		California Secondary MCL	1,000	ug/L	G & IS				
		Water Quality for Agriculture (Ayens & Westcot)	200	ug/L	G & IS				
	Tastes and Odors	California Secondary MCL & USEPA Nat. Rec. WQ Criteria	1,000	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	300	ug/L	G				
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	1300	ug/L	IS				
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	4.1	ug/L	IS		x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	6.7	ug/L	IS		x		x
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	3.1	ug/L	E	x	x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved	4.8	ug/L	E		x		x
	CA Ocean Plan - sq life	Aquatic Life Protection Objective, 6-month median	3	ug/L	G	x	x	x	x
		Aquatic Life Protection Objective, daily maximum	12	ug/L	O		x		
		Aquatic Life Protection Objective, instantaneous maximum	30	ug/L	O				
Iron						801	10982	260	3580
	Chemical Constituents	California Secondary MCL	300	ug/L	G & IS	x	x		x
		Water Quality for Agriculture (Ayens & Westcot)	5,000	ug/L	G & IS		x		
	Tastes and Odors	California Secondary MCL	300	ug/L	G & IS	x	x		x
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day average	1,000	ug/L	IS		x		x

Table 6. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			G=Groundwater IS=Inland SW E=Estuary O=Ocean	Sacramento River at Hamilton City		Colusa Basin Drain	
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L	Units		Dissolved	Total	Dissolved	Total
<b>Lead</b>						<b>0.228</b>	<b>3.82</b>	<b>0.106</b>	<b>1.68</b>
	Chemical Constituents	California Primary MCL	15	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	5,000	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	0.2	ug/L	G & IS	x	x		x
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (?)	0.92	ug/L	IS	x	x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved (I)	26	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8.1	ug/L	E				
		California Toxics Rule (USEPA), 1-hour average, dissolved	210	ug/L	E				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	2	ug/L	G		x		
		Aquatic Life Protection Objective, daily maximum	8	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	20	ug/L	O				
<b>Manganese</b>						<b>8.97</b>	<b>299</b>	<b>14.9</b>	<b>208</b>
	Chemical Constituents	California Secondary MCL	50	ug/L	G & IS		x		x
		Water Quality for Agriculture (Ayers & Westcott)	250	ug/L	G & IS		x		x
	Tastes and Odors	California Secondary MCL	50	ug/L	G & IS		x		x
	Toxicity - humans	California DPH Notification Level for drinking water	500	ug/L	G & IS				
		USEPA National Recomen. WQ Criteria, fish consumption	100	ug/L	IS & E & O		x		x
<b>Nickel</b>						<b>2.94</b>	<b>13.88</b>	<b>3.33</b>	<b>11.2</b>
	Chemical Constituents	California Primary MCL	100	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	250	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	12	ug/L	G		x		
		USEPA National Recomen. WQ Criteria, fish consumption	4,600	ug/L	IS & E & O				
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	650	ug/L	IS				
		California Toxics Rule (USEPA) for other waters	4,600	ug/L	IS & E				
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (E)	58	ug/L	IS				
		California Toxics Rule (USEPA), 1-hour average, dissolved (I)	220	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8	ug/L	E		x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved	74	ug/L	E				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	5	ug/L	O		x		x
		Aquatic Life Protection Objective, daily maximum	20	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	50	ug/L	O				
<b>Selenium</b>						<b>0.438</b>	<b>0.47</b>	<b>0.516</b>	<b>0.627</b>
	Chemical Constituents	California Primary MCL	50	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	20	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	30	ug/L	G & IS				
		USEPA National Recomen. WQ Criteria, water & fish consump.	170	ug/L	IS				
		USEPA National Recomen. WQ Criteria, fish consumption	4,200	ug/L	E & O				
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, total	5	ug/L	IS				
		National Toxics Rule (USEPA), 1-hour average, total	20	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	71	ug/L	E				
		California Toxics Rule (USEPA), 1-hour average, dissolved	290	ug/L	E				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	15	ug/L	O				
		Aquatic Life Protection Objective, daily maximum	60	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	150	ug/L	O				
<b>Zinc</b>						<b>3</b>	<b>43.9</b>	<b>1.56</b>	<b>19.1</b>
	Chemical Constituents	California Secondary MCL	5,000	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	2,000	ug/L	G & IS				
	Tastes and Odors	California Secondary MCL	5,000	ug/L	G & IS				
	Toxicity - humans	USEPA IRIS Reference Dose (RfD)	2,100	ug/L	G & IS				
		USEPA National Recomen. WQ Criteria, water & fish consump.	7,400	ug/L	IS				
		USEPA National Recomen. WQ Criteria, fish consumption	26,000	ug/L	E & O				
	CTR - fw aquatic life	California Toxics Rule (USEPA), 1-hour average, dissolved (I)	54	ug/L	IS				
		California Toxics Rule (USEPA), 4-day average, dissolved (?)	54	ug/L	IS				
	Toxicity - sw aquatic life	USEPA National Recomen. WQ Criteria, 4-day avg, dissolved	61	ug/L	E & O				
		USEPA National Recomen. WQ Criteria, 1-hour avg, dissolved	90	ug/L	E & O				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective for Lead, 6-month median	20	ug/L	O		x		
		Aquatic Life Protection Objective for Lead, daily maximum	80	ug/L	O				
		Aquatic Life Protection Objective for Lead, instantaneous max	200	ug/L	O				

A “Reservoir Management Plan” is identified on page 6-47. The RMP Page 2D-37) states that “past studies of metal concentrations in the Sacramento River have not focused on high flows that will be the source water for Sites Reservoir. Metal concentrations at the diversion(s) will be measured within 24 hours of the start of diversions at RBPP and every 2 weeks during continuous diversions.” “After 2 years of measuring metal concentrations in the diversions, the frequency of measurements will decrease to monthly.” Rather than focusing on a strict protocol or set schedule of monitoring at 2-week intervals, monitoring should target a range of flow conditions to better understand the relationship between flow and metals concentrations. Event based monitoring may require data collection biweekly, weekly, or even on a daily basis as flow conditions vary. Additional consideration for monitoring would include analyzing differences in water quality based on whether flows are primarily composed of water from Shasta Lake or tributary inflows dominate the flow in the Sacramento River at the diversion points, and dry, normal, and wet year effects on water quality. Two years of data collection likely will not be sufficient to provide the required information.

The description of the SWRCB’s Antidegradation Policy on page 6-47 is misleading in stating that the policy allows for some degradation in consideration for increased beneficial uses, the supposed beneficial use being increased water supply from the proposed reservoir. The Antidegradation Policy prohibits discharges that would degrade water quality even though the degradation would not exceed water quality objectives because no capacity would exist for degradation that will be caused by the next downstream or downgradient uses – the ability to beneficially use the water would have been impaired, even though water quality objectives would not yet have been exceeded (SWRCB 2011). The contribution of additional metal loads from releases from the proposed Sites Reservoir during the summer would cause concentrations of metals in the Sacramento River (through direct releases or releases through the CBD or GCID) to exceed criteria and standards or at least be subject to the Antidegradation Policy due to an incremental increase in metals in the Sacramento River from the proposed project. Thus, the proposed project may face prohibition of releases if stored water does not meet water quality criteria or standards or if releases can cause criteria or standards to be exceeded by downstream inputs (i.e., Antidegradation Policy).

On page 6-54, page 6-57, and elsewhere, statements concerning expected mercury levels in fish, nutrients, and dissolved organic carbon in the reservoir explain that “this would be an effect on the Project itself occurring within the Sites Reservoir, rather than an effect from the Project on the surrounding environment.” This seems to imply that the project would not be responsible for these issues in the reservoir since it is the location where the reservoir is placed that is responsible. It is the construction of the reservoir that creates the problem. The creation of the reservoir creates a problem for the surrounding environment (i.e., birds that will prey on fish contaminated with high levels of mercury in the reservoir).

The discussion on page 6-57 also explains that “any increases in reservoir nutrient concentrations may benefit fish.” However, management of the mercury problem in the reservoir includes not introducing fish into the reservoir for at least 10 years (Mitigation Measure WQ-1.1). So, there are not any fish that would benefit from the increased nutrient concentrations in the reservoir. Even if there were fish in the reservoir, increased nutrient concentrations would lead to increased HABs (an impact) and anoxia in the hypolimnion as the organic materials (HABs) produced in

the epilimnion sink and decompose in the hypolimnion, eliminating the hypolimnion as habitat for fish (another impact). As well, the anoxic hypolimnion will result in the dissolution of metals from the sediments back into the water column, yet another adverse impact from the increases in reservoir nutrient concentrations.

This section on page 6-54 of the report also acknowledges that long-term methylmercury concentrations in fish in the proposed reservoir can reasonably be expected to be about 0.85 mg/kg ww, which greatly exceeds the 0.2 mg/kg ww of the California sport fish objective.

Because Harmful Algal Blooms (HABs) are expected to be relatively high in surface water of the reservoir (page 6-55), “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 downstream.” This is proposed as a strategy on page 6-57 to avoid effects from initial filling of Sites Reservoir on downstream conditions. However, a statement on page 6-16 indicates that water would be released from the surface rather than lower in the water column to avoid releasing water with high concentrations of mercury: “Due to this stratification, reservoir releases from the warmer, upper layer of water (i.e., the epilimnion) during the summer are less likely to have elevated methylmercury concentrations compared to releases from the deeper hypolimnion.” Water quality is affected whether water is released from the surface (HABs) or bottom (mercury). Neither release scenario, then, is effective at mitigating impacts; releases from the bottom to avoid HABs results in high levels of mercury being released, while releases from the surface to avoid mercury results in high levels of HABs being released. One mitigation strategy conflicts with the other. Withdrawing water between the epilimnion and hypolimnion (i.e., the metalimnion) may avoid releasing water with high HABs (epilimnion) or mercury (hypolimnion), but this narrow band of water would quickly be depleted, leaving no option but to release water with either high concentrations of HABs or mercury.

One of the methylmercury management strategies is to not stock Sites Reservoir with fish for the first 10 years following its initial filling (page 6-59). How will the project prevent someone from taking it upon themselves to stock fish of their choosing, as has happened at many other reservoirs (e.g., Northern pike in the Upper Feather River reservoirs). What will the project do to prevent someone from stocking fish and to mitigate this stocking when it does occur?

Another methylmercury management strategy is to introduce an oxidant, such as nitrate, to the reservoir bottom waters (near the sediment-water interface) to reduce anoxia (page 6-59). “If this method is employed, reservoir releases will be made from a higher tier (i.e., higher elevation) in the I/O tower to avoid discharging bottom waters.” Introduction of nitrates will serve as a nutrient source to stimulate increased algal ((HABs) growth following reservoir turnover. Releases from above the hypolimnion will be affected by HABs.

From page 6-70: “Thermal stratification in the summer would likely result in a reduction of oxygen toward the bottom of the reservoir in the hypolimnion. However, reservoir fish would likely not be affected by this reduction because they would not be in the hypolimnion.” According to this DEIR, some of the fish species that would be introduced into the reservoir

(after 10 years) include cold-water species. These fish require the cold water of the hypolimnion for survival. Reduction of oxygen in the hypolimnion will adversely affect these species.

The DEIR on page 6-81 states that “concentrations of metals released from Sites Reservoir could be higher than their concentrations in the Sacramento River at the point of discharge, potentially degrading river water quality.” “The release of Sites Reservoir water to the CBD under Alternatives 1, 2, and 3 would likely reduce metals concentrations in the CBD because metal concentrations in the CBD are generally higher than metals concentrations in the Sacramento River regardless of time of year.” As discussed earlier, release of water to the CBD from Sites reservoir results in elevated concentrations of most metals in the CBD. However, even if release of water from Sites Reservoir to the CBD did not cause metal concentrations in the CBD to be increased, the total volume of poor quality metal laden water being released to the Sacramento River at the CBD outfall is increased with the introduction of water from Sites Reservoir, thereby causing greater adverse impacts on water quality in the Sacramento River than if just CBD water was released. The additional metals load in CBD due to the addition of water from Sites Reservoir may, when combined with other downstream discharges, result in the need for additional water treatment by downstream users, particularly municipal or industrial users.

The DEIR states on page 6-81 that “high concentrations of total metals in the Sacramento River water diverted to storage may be reduced substantially by settling of suspended sediment. This would cause concentrations to drop and approach the dissolved, filtered measurements.” The DEIR does not take in account the dissolution of metals from the settled sediments under the anoxic conditions expected in the reservoir. Dissolution of metals from the settled sediments will add to those already present in the dissolved form. In addition, the DEIR states that evapoconcentration could increase metals concentrations in the reservoir by up to 48 percent.

The DEIR on page 6-82 states that “to demonstrate a range of results for the Sacramento River, these graphs show two types of results for concentrations in the Sacramento River downstream of the Sites discharge: Concentrations assuming median river concentrations mixed with Sites Reservoir concentrations that assume no settling of suspended sediment. This represents typical river concentrations mixed with Sites concentrations that are probably unrealistically high.” Sites Reservoir will not be diverting “median” river concentrations, but rather the higher concentrations occurring with higher flows in the January through March period. Throughout this DEIR, comments are made that analyses are “conservative,” meaning that the DEIR considers worst case scenarios in the analyses. The analyses are not “conservative” at all, but are an underestimation of the concentration of metals that will occur in the reservoir since the available data does not identify the higher concentration of metals that will occur with higher flows.

The DEIR on page 6-82 states that “the total aluminum, total copper, and total iron concentrations in Sites Reservoir are likely to frequently exceed aquatic life protection standards if settling did not reduce these concentrations.” As noted previously, settling of sediments is not a permanent sink for metals in the reservoir. Dissolution of metals under anoxic conditions will allow metals from the sediments to re-enter the water column, which may then lead to even more exceedances of water quality standards for aquatic life protection.

In discussing effects on aquatic communities in the reservoir due to metals, the DEIR on page 6-82 states “these effects would occur on an aquatic community in a reservoir that is not present under existing conditions so there would be no substantial degradation of water quality relative to existing conditions.” Strange statement. There is no degradation under existing conditions without the reservoir, but there are certainly impacts on the aquatic community when the reservoir is constructed. The SWRCB sets water quality standards and objectives that includes reservoirs.

The DEIR on page 6-83 states “acute synergistic metal effects in the river would be greater than what might occur in Sites Reservoir because metal concentrations in the Sacramento River during high flow events are much higher than concentrations expected in Sites Reservoir.” Diversions to Sites Reservoir would occur during high flow events, so metals concentrations in Sites Reservoir would be similar to those in the Sacramento River during these events. The DEIR goes on to state “as described above, once suspended sediment settles in Sites Reservoir, most metals are expected to occur at levels below water quality standards for aquatic life protection, which would limit the likelihood of synergistic effects.” The DEIR considered only four metals, but nonetheless found that “with these assumptions for partial settling, concentrations for total aluminum may be close to the 620 µg/L water quality standard for aquatic life protection, hovering between about 500 µg/L and 750 µg/L” and “total copper concentrations may occasionally exceed water quality standards for aquatic life protection” (page 6-82). This conclusion conflicts with the earlier and does not support the conclusion that most metals are expected to occur at levels below water quality standards for aquatic life protection.

Graphs are presented on pages 6-84 and 6-85 that depict estimated concentrations of various metals going back as far as the year 1920 to the year 2000. There are no metals data for nearly all the years depicted in the graphs, so how were the estimates determined?

The DEIR on page 6-86 states that “arsenic levels measured in the Sacramento River are below regulatory standards.” Arsenic levels in the Sacramento River near Red Bluff as well as at Hamilton City exceed several goals and objectives, including the California Public Health Goal for Drinking Water, USEPA National Recommended WQ Criteria for water and fish consumption, and USEPA National Recommended WQ Criteria for fish consumption. Though not regulatory, these goals are criteria to which arsenic concentrations should be compared to evaluate impacts.

The DEIR states on page 6-88 that “in drought years, releases from the reservoir’s normal operating dead pool would be made through the low-level intake” and on page 6-89 that “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 downstream. This hypolimnial release would result in water with high concentrations of methylmercury being released downstream.

In determining CEQA significance on page 6-92, the DEIR reiterates that “releasing water from lower in the reservoir if cyanobacteria and cyanotoxins are confirmed near the I/O tower at a level at or exceeding the “Caution” action trigger level, would further reduce any potential for

adverse water quality effects,” which ignores the conflicting issue of high methylmercury concentrations in the lower water. The DEIR on page 6-93 also states that “in the Sacramento River, discharges to the river from Sites Reservoir would occur after reductions in total metal concentrations due to settling of suspended sediment. These discharges would not cause substantial increases in concentration or exceedances or exacerbation of exceedances of water quality standards for metals in the Sacramento River.” This ignores the importance of redistribution of metals from the reservoir sediments due to dissolution. Any increases in concentrations or exceedances of water quality standards for metals is a concern for downstream water users, even if not “substantial.”

Mitigation for impacts to Stone Corral Creek include “release occasional pulses of high flow. Flow pulses could flush away low-quality sediment and water from the bottom of the reservoir adjacent to Sites Dam.” This would flush contaminant laden sediments downstream, resulting in downstream impacts including smothering of aquatic habitat with toxics laden sediments. Adding “a vertical extension in the reservoir at the withdrawal point. This extension would pull water from higher in the reservoir, where metal concentrations are expected to be lower” and “pump water from the top of Sites Reservoir for release into Stone Corral Creek.” But HABs are higher in this water that would be supplied from the upper water column of the reservoir – trading one impact for another.

Another mitigation for Stone Corral Creek (page 6-95) is to “pump water from the top of Sites Reservoir for release into Stone Corral Creek. Based on the demonstration of the effect of partial settling of suspended sediment on total metal concentrations in Sites Reservoir and the conservative nature of this assessment, metal concentrations in Sites Reservoir are expected to meet water quality standards for the protection of aquatic life during the drier parts of the year in water located above the deepest portions of the reservoir.” This conflicts with earlier statements in this DEIR (page 6-82) that states “based on the calculations that demonstrate the effect of partial settling of suspended sediments, settling of suspended sediment may have a substantial effect on total metal concentrations. With these assumptions for partial settling, concentrations for total aluminum may be close to the 620 µg/L water quality standard for aquatic life protection, hovering between about 500 µg/L and 750 µg/L (Figure 6-9). Total copper concentrations may occasionally exceed water quality standards for aquatic life protection.” Even higher concentrations could be expected had the effects of dissolution of metals from the sediments been considered in the analysis.

The DEIR on page 6-100 states that “the net effect of the Project would be to enhance beneficial uses of water, and water quality could improve in parts of the study area. For example, during some months the increases in Delta outflow could reduce seawater intrusion and under certain circumstances Alternatives 1, 2, and 3 could allow for seasonal storage changes in Shasta Lake that could help to preserve cold-water supply for fish through exchanges with Sites Project water.” Increased releases from Sites Reservoir to preserve water in Lake Shasta will result in a greater percentage of water in the Sacramento River being composed of Sites Reservoir water, which results in less dilution from Shasta releases, and greater metals concentrations in the Sacramento River.



This section goes on to say “the development of Sites Reservoir for Alternative 1, 2, or 3 would create in-reservoir habitat and thus net benefits for Reservoir cold-water and warm-water fish species.” Cold water fish species would be impacted by the anoxic conditions expected to occur in the hypolimnetic environment required by such fish. In addition, high methylmercury concentrations in the reservoir will impact all fish species. Mitigation for mercury includes not stocking fish for at least 10 years, so there would be no net benefits to cold-water and warm-water fish species for at least 10 years.

This section also states that “operations would increase water supply reliability for refuges, municipalities, and agriculture, particularly in Dry and Critically Dry Water Years.” Though reliability may increase, the quality of water provided by Sites Reservoir may not be suitable for wildlife habitat in refuges and may require additional treatment by municipalities, particularly in dry and critically dry years when less dilution water would be available from existing water projects.

The Sacramento River from Red Bluff to Knights Landing is on the Clean Water Act Section 303(d) Impaired Water Bodies list for PCBs, but there is no discussion in this DEIR about PCBs.

#### Chapter 5. Surface Water Resources

The DEIR on page 5-28 states that “in-lieu exchanges between Sites Reservoir releases and flow in the Sacramento River would occur when Sites Reservoir releases were used to meet local Storage Partner demands (Sacramento River Settlement Contractors, Reclamation, or, most likely, GCID) that normally would be met through diversions from the Sacramento River.” There would be no dilution of water from Sites Reservoir with water from the Sacramento River under such exchanges, and therefore water with higher levels of metals would be supplied to local Storage Partners, particularly GCID, with associated adverse effects. There is no discussion about the adverse effects of such exchanges from metals or other water quality parameters (HABs, cyanotoxins, etc.) to the local water users, including use on wildlife refuges.

The SWRCB is engaged in activities to address the precipitous declines of native aquatic species and the ecosystem they depend upon. These activities include updating the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary to protect the Bay-Delta watershed and its many beneficial uses. The SWRCB is focusing on the Sacramento River and its tributaries, Delta tributaries, Delta outflows, and interior Delta flows. As with the Lower San Joaquin River and Southern Delta update, the SWRCB is concerned about adequate flows in the Sacramento River system to protect instream fish and wildlife, and is proposing Delta inflows of up to 65% of unimpaired flow in the Sacramento River. These updates to the Bay-Delta Plan will reduce the amount of water available for diversion to the proposed Sites Reservoir. There is no discussion about how the reduced flows available for diversion from the Sacramento River due to updates to the Bay-Delta Plan will affect the viability of the proposed Sites Reservoir project.

## Chapter 10. Wildlife Resources

In discussing Impact WILD-1k: Golden Eagle and Bald Eagle, the DEIR states on page 10-96 that “the completed reservoir would provide new bald eagle foraging habitat (fish in the reservoir) and result in new nesting sites or wintering habitat because of the proximity to new foraging habitat. These would be beneficial effects.” There would be no fish in the reservoir for at least 10 years (Mitigation Measure WQ-1.1), so there would be no new bald eagle foraging habitat and no new nesting sites or wintering habitat because of the proximity to new foraging habitat, therefore no beneficial effects. After 10 (or more) years, any fish stocked into the reservoir would develop a mercury burden which would impact fish eating birds, such as the bald eagle.

*CEQA Significance Determination and Mitigation Measures* finds that implementation of Alternative 1 or 3 would have the beneficial effects of providing new bald eagle foraging habitat (Sites Reservoir) and new nesting sites or wintering habitat because of the proximity to the new foraging habitat. As explained above, there is no new foraging habitat or nesting or wintering habitat because there will be no fish in the reservoir for at least 10 years. This is also true for the *NEPA Conclusion* on page 10-99. There is no discussion of any mitigation measures to prevent bald eagles, or other fish eating birds, from ingesting fish contaminated with mercury, or how their populations will be mitigated due to the adverse effects from ingestion of mercury laden fish.

In discussing impacts to various species of bats, the DEIR states that “the completed reservoir would provide a new drinking water source and foraging habitat (insects associated with the reservoir) for bats. This would be a beneficial effect of the Project.” The DEIR does not address the impacts to bats from ingesting water laden with cyanotoxins from HABs in the reservoir, nor the effects of mercury in the insects that the bats would be eating.

DWR 2007. Mercury Contamination in Fish from Northern California Lakes and Reservoirs.  
July 2007

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**Attachments:** Sites DEIR 2.docx

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**From:** Jerry Boles <[chicojerry@yahoo.com](mailto:chicojerry@yahoo.com)>  
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**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** Comments on Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

Hi Ali-

Attached are my comments on the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.

If you have any questions, you may contact me by email at [chicojerry@yahoo.com](mailto:chicojerry@yahoo.com).

Jerry Boles

The Draft EIR is an improvement from the 2017 version in that it at least acknowledges some water quality issues, but continues to ignore other water quality issues, makes inaccurate and misleading statements, and offers conflicting and contradicting strategies to attempt to lessen significant and substantial adverse impacts.

The data in the WDL for the Sacramento River and Cottonwood Creek demonstrate that high concentrations of metals can be expected during the high flow months of winter (December through March) when diversions would be occurring to the proposed Sites Reservoir. Higher concentrations of metals are likely during the higher flows that can occur during these months. Such higher flows were not targeted by the limited sampling effort presented in the WDL. The high concentrations of metals in the source water will adversely impact water quality in the proposed reservoir for most, if not all, the proposed beneficial uses of the stored water.

Some metals from both the Sacramento River and Cottonwood Creek, whose concentrations did not exceed criteria in the limited sampling effort, had concentrations that nearly exceed the criteria and standards. These and other metals whose concentrations did not exceed the criteria may have higher concentrations during the higher flow periods that the proposed project would be diverting. Again, these higher flow periods were not targeted during the limited sampling effort.

Even some of the minimum concentrations of metals found in the source waters exceed criteria and standards, which means that the source waters never meet these goals and standards – the criteria are always exceeded and the water is never suitable for the beneficial use or uses the criteria or standards were designed to protect. Water quality in the proposed reservoir for these parameters will exceed the criteria and standards all the time.

Since water quality in the proposed reservoir will reflect that of the source waters, the reservoir will have concentrations of numerous metals, including aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc, that exceed a number of criteria and standards developed to protect beneficial uses. In addition, other metals that may not exceed criteria and standards in the source waters may adversely affect reservoir water quality due to synergistic effects. The State Water Resources Control Board (SWRCB 2011) states that “when multiple constituents have been found together in groundwater or surface waters, their combined toxicity should be evaluated” and that “theoretical risks from chemicals found together in a water body shall be considered additive for all chemicals having similar toxicologic effects or having carcinogenic effects.” Thus, the adverse effects from the metals delivered to the proposed reservoir from the source waters may have an even greater adverse impact and pose an unacceptable level of risk. Beneficial uses potentially impacted by metals in the proposed reservoir include agricultural water supply (direct toxicity or uptake by crops making the crops unsuitable for use), wildlife (such as fish-eating birds), fisheries, recreation (including sport fishing and water contact activities such as swimming), and drinking water supplies for communities that divert water from the Sacramento River.

Releases from the proposed reservoir would occur during the summer when metals concentrations in the Sacramento River are much lower due to the majority of flow being from Shasta Reservoir, with much better water quality, though still carrying a metals load. High

metals concentrations in the proposed reservoir releases could adversely affect water quality in the Sacramento River during the summer months by increasing metals loads beyond acceptable limits and adversely impact beneficial uses.

Though high concentrations of metals that exceed water quality criteria exist in source waters to the proposed project, they cannot be regulated by governmental entities since they are natural occurrences. However, once contained artificially in a reservoir, they are subject to jurisdictional control by regulatory agencies. Any releases of water from the proposed reservoir will likely be subject to review by water quality regulatory agencies to ensure that such releases do not adversely affect downstream resources due to the heavy metals loads in the releases. The SWRCB has an antidegradation policy that prohibits discharges that would degrade water quality to a level below water quality objectives because no capacity would exist for degradation that will be caused by the next downstream or downgradient uses – the ability to beneficially use the water would have been impaired, even though water quality objectives would not yet have been exceeded (SWRCB 2011). The contribution of additional metal loads from releases from the proposed Sites Reservoir during the summer could cause concentrations of metals in the Sacramento River to exceed criteria and standards or at least be subject to the antidegradation policy due to an incremental increase in metals in the Sacramento River from the proposed project. Thus, the proposed project may face prohibition of releases if stored water does not meet water quality criteria or standards or if releases can cause criteria or standards to be exceeded by downstream inputs (i.e., antidegradation policy).

During dry years, the adverse impacts associated with the project can be expected to be even greater. Flows in the Sacramento River from upstream reservoirs on the Sacramento River (i.e., Shasta Reservoir, Whiskeytown Reservoir) will be minimized during the winter months in an effort to restore water storage levels in those reservoirs. Likewise, during wet or even normal runoff years, releases from the upstream reservoirs during the winter will be curtailed during high runoff periods to prevent downstream flooding. In any of these scenarios, tributary influences, such as Cottonwood Creek, on water quality in the Sacramento River will be much greater. The proposed project would still attempt to capture as much runoff from the Sacramento River as possible, but the water diverted to the proposed project will have even greater concentrations of metals due to the majority of flow being from tributary streams (e.g., Cottonwood Creek) during dry and possibly even wet or normal runoff years.

Similarly, during the summer in dry years, releases from upstream reservoirs (i.e., Shasta Reservoir, Whiskeytown Reservoir) will be minimized. Releases to the Sacramento River from the proposed project (whether directly to the Sacramento River or indirectly through the CBD or GCID) will have a greater impact on water quality in the Sacramento River due to less dilution being available due to curtailed flows in the river from upstream reservoirs (i.e., Shasta and Whiskeytown reservoirs).

The limited data that are available are sufficient to show that water quality in the proposed reservoir will have concentrations of a large number of metals that exceed many water quality criteria and standards, including those established for the protection of agricultural water supply, wildlife and fisheries, and drinking water. Metals bioaccumulation in the reservoir food web could produce adverse impacts to fish-eating birds and other animals, as well as humans, and

adversely affect any potential recreational benefit from the project. Releases from the proposed reservoir could adversely affect downstream resources, including agricultural water supply, wildlife and fisheries, and drinking water supplies for communities that divert water from the Sacramento River.

The Basin Plan lists other chemicals that adversely affect water quality in the Sacramento River, including chlorpyrifos and diazinon. The California State Water Resources Control Board lists a number of other “constituents of concern” in the study area, including chlordane, DDT, mercury, PCBs, and dieldrin. In addition, sewer outfalls from the cities of Redding and Red Bluff contribute other contaminants, such as pharmaceuticals, to the Sacramento River. Other than diazinon and a brief discussion of chlorpyrifos, DDT, and dieldrin, no information is provided in the EIR about effects to the proposed project from these chemical contaminants.

## Chapter 6. Surface Water Quality

p. 6-2 and 6-3: Table 6-1b summarizes operation impacts for surface water quality resources. Impact WQ-2 (Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality during operation) is identified as CEQA significant and unavoidable (SU) and NEPA substantial adverse effect (SA) for all alternatives. Yet, somehow this is deemed as not conflicting with or obstructing implementation of a water quality control plan (Impact WQ-5). Since, as identified as Impact WQ-2, the project will violate water quality standards of the Central Valley Water Quality Control Plan (Basin Plan), this is obviously a significant impact and substantial adverse effect which conflicts with the Basin Plan.

p. 6-19: “Mean mercury concentrations in Shasta Lake and in the Sacramento River at Red Bluff and Hamilton City are substantially lower than the CTR criterion for mercury in freshwater (50 nanograms per liter [ng/L]).” The Sites Reservoir project will not be diverting “mean” concentrations of mercury (or any other constituent), but rather the higher concentrations of constituents generally associated with the higher flows from which the project will be diverting. In the Sacramento River at Hamilton City, Table 6-5 shows that total mercury concentrations have been measured as high as 54 ng/L, which are higher than the CTR criterion of 50 ng/L, and raise concern for significant and substantial adverse effects when waters with these types of concentrations are diverted into the reservoir.

Table 6-5 also shows that total mercury concentrations have been measured as high as 14.4 ng/L in the Sacramento River at Red Bluff but only 0.52 ng/L in Lake Oroville. Yet these relatively low concentrations of total mercury from the water in Lake Oroville have been sufficient to cause fish from this reservoir to exceed the numeric criterion and objectives for all trophic levels of fish, including both sport and prey fish, for the protection of human health and wildlife as contained in the Sacramento–San Joaquin River Delta Estuary TMDL for Methylmercury and Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. Fish tissue concentrations as high as 0.7 mg/kg have been found in fish from Lake Oroville (DWR 2007). 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 DEIR on page 6-17 states that “in newly constructed reservoirs, the initial inundation of soils and vegetation can cause higher net methylmercury production in early years after filling, when organic carbon is relatively abundant, relative to long-term average production. This initial spike in mercury methylation can increase the concentrations of water column methylmercury to double or triple the long-term average concentrations for up to 10 years.” It also states that “the literature suggests that fish tissue concentrations of methylmercury may peak 3–8 years after filling, with concentrations slowly declining to a lower steady-state after 10–35 years.” 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.

The DEIR states on page 6-22 states that “the effects of mixtures of metals on organisms in the Sacramento River are poorly understood.” Nonetheless, the SWRCB states that when multiple constituents are found together, the combined toxicity of the multiple constituents should be evaluated. “In the absence of scientifically valid data to the contrary, Section 2550.4(g) of Chapter 15, Article 5 regulations referenced in the SWRCB’s Site Investigation and Cleanup Policy requires that theoretical risks from chemicals found together in a water body shall be considered additive for all chemicals having similar toxicological effects or having carcinogenic effects. This requirement is also found in the California hazardous waste management regulations (Title 22 of CCR, Section 66264.94(f) and in the USEPA Risk Assessment Guidance for Superfund (RAGS).” This DEIR did not consider the combined effects of metals and is therefore deficient.

The DEIR states on page 6-22 that metal concentration measurements are shown in Appendix 6E but that “this is not an exhaustive presentation of all measurements, but instead is provided to show patterns of metal concentrations at the Sites Reservoir intake locations (near Red Bluff and Hamilton City), in the CBD, and upstream of one of the potential release locations (upstream of the CBD).” The DEIR should not selectively filter the available data in order to support its contentions, but should show all data even though the data may prove contentions incorrect.

The DEIR states on page 6-23 that “for most metals there is little difference in concentration between upstream and downstream locations on the Sacramento River.” This is not true at all. Data in WDL show substantial differences between upstream and downstream locations. For example, comparing the data for the Sacramento River at Keswick to that at Red Bluff show total aluminum as 492 ug/L vs. 3,630 ug/L, total copper as 4 ug/L vs. 14.7 ug/L, total iron as 294 ug/L vs. 4,160 ug/L, and total lead as 1.56 ug/L vs. 3.14 ug/L, all substantial differences. The differences in concentrations for these and other constituents is attributed to tributary stream inflows, with the most significant in terms of both flow and contribution of these constituents being Cottonwood Creek.

The DEIR states on page 6-31 that “contaminated sediments could move into Sites Reservoir as suspended sediments during high flows, but the main supplies of contaminated sediments and their potential effects would remain in the Sacramento River channel because the amount of sediment contained in the diversions to Sites Reservoir would be small compared to what is contained in the Sacramento River channel.” The concentration of contaminated or suspended sediments would be exactly the same in the water diverted to Sites Reservoir and that in the Sacramento River at the point and time of diversion – there is no difference in sediment load. The only difference is that the Sacramento River will carry a substantially greater load of sediment due to the substantially greater flow in the Sacramento River than the amount of water diverted to the proposed reservoir.

The DEIR states on page 6-31 that “wind, rain, and wave action commonly erode bare soil adjacent to reservoirs and could cause erosion along the edge of Sites Reservoir when it is not full. These phenomena may temporarily increase turbidity along the reservoir’s edge prior to settling of the sediment, but this increase would not markedly affect beneficial uses of the reservoir (i.e., recreation, water supply, fisheries and wildlife).” Erosion of soils in the exposed inundation zone will re-suspend soils laden with metals and other contaminants, which may then contribute to impacts in the reservoir or downstream releases.

Page 6-33 states that “when Sites Reservoir would release water to the Sacramento River, it would constitute 6%–7% of the Sacramento River flow on average and 12%–13% when discharges are relatively high compared to river flow,” and therefore “water quality in Sites Reservoir would have limited effect on the water quality in the Sacramento River.” However, page 6-32 states that evapoconcentration could increase constituent concentrations in Sites Reservoir by up to 48%. Therefore, water released from Sites Reservoir to the Sacramento River could contribute higher concentrations of constituents such as metals. The DEIR does not evaluate the effects from these higher concentrations on water quality and beneficial uses of the Sacramento River. Also, during “operational exchanges” when additional water is released from Sites Reservoir and water is held back in Shasta or Oroville reservoirs, the percent of water from Sites Reservoir constituting the total flow in the Sacramento River will be increased, potentially adversely affecting water quality in the river and impacting downstream water users.

Page 6-37 discusses Harmful Algal Blooms in relation to “whether cyanobacteria and cyanotoxins may be released from the reservoir with dead pool withdrawals” and “the elevation of the low-level intake from which dead pool withdrawals would be released.” “Dead pool” usually refers to water in a reservoir that cannot be drained by gravity through a dam’s outlet works. How is the project planning on withdrawing water from the dead pool?

Page 6-42 states that the “metals analysis relies on best available data provided by DWR’s WDL” and that “these data were collected intermittently over multiple years, with measurements representing a wide range of flow conditions.” This is not true. The statement of “best available data” is an attempt to portray the WDL data as robust, which it is not. While the data were collected “intermittently over multiple years,” the data are better described as “spotty.” Sample collection for this sparse data did not target a “wide range of flow conditions,” but rather were based on a fixed schedule regardless of flow conditions. The metals data from DWR’s Water Data Library (WDL) “provide a general understanding of how metal and pesticide concentrations



may vary with flow and location, allow the identification of trends, and support the impact analysis and conclusion.” Water quality data in the WDL for diversion locations of the project are extremely limited. From the Sacramento River below the Red Bluff Diversion Dam, only 26 samples were collected by DWR between the years of 2000 and 2020 (Table 1) during the project’s primary months of diversion to storage (January through March, p. 6-32). In eight of the 20 years of data collection from this monitoring station, only one sample was collected during the primary months of diversion to storage; only two years saw four samples collected (both were drought years); in the remaining years only two to three samples were collected during the months of January through March. This pattern of data collection is even more sparse for the Sacramento River at Hamilton City (Table 2). Only 20 samples were collected from the Hamilton City monitoring site during the project’s primary months of diversion to storage. Only one sample was collected from this site in 10 of the 20 years of data collection; three samples were collected in two of the monitoring years, and four samples were collected in one year (which was a drought year). This scant yearly data collection does not “provide a general understanding of how metal and pesticide concentrations may vary with flow and location, allow the identification of trends, and support the impact analysis and conclusion.” Collection of these 26 samples was not timed to address variations in concentrations due to variations of flow, but were grab samples collected on a more or less set schedule without the intent to provide sufficient data for impact analysis for any type of storage project. Concentrations of many of the metals analyzed from these samples were found to be higher when flows were higher during sample collection. However, variation in concentrations due to flow was not considered during sample collection, and even higher concentrations of metals may be found with flows higher than those during the limited sample collection.

The project proposes to collect additional samples for metals at a frequency sufficient to better understand the relationship with variations in flow, but this is only after the project has been constructed. These post-project data would “refine the understanding of metals as more data would likely improve the accuracy of equations used in this analysis for estimating metal concentrations,” which is commendable but too late to better understand the adverse effects prior to construction of the project. The project proponents have been pursuing this project for over 20 years. They were also made aware of water quality issues related to this project from comments on the 2017 DEIR, providing ample time for additional data collection to further elucidate the issues prior to preparation of the current DEIR, but no data were collected by the project proponents. Failing this, now they propose to collect this needed data but only after the project is completed to determine the severity of the problems. This is backwards. CEQA requires impact analysis prior to approval and construction of a project, not afterwards. This project should not be constructed and then data collected to see if it will work or to determine the adverse impacts, but rather data should be collected and evaluated prior to approval of this project to determine adverse impacts and potential mitigation.

Based on the limited available data, the project focuses on only four metals (aluminum, copper, iron, and lead) considered to be of greatest concern due to seasonal changes in concentration and concentrations above standards (p. 6-42). The only “standards” considered are a “California MCL,” “California Secondary MCL,” and Freshwater Chronic Standard for Aquatic Life Protection. There are a large number of other numeric water quality thresholds applicable to this project, including California and Federal Drinking Water Standards (MCLs), California Public

Health Goals (PHGs), California State Notification and Response Levels for Drinking Water, Suggested No-Adverse-Response Levels (SNARLs), Cancer Risk Estimates, Health-based criteria from USEPA Integrated Risk Information System (IRIS), Proposition 65 Safe Harbor Levels, California Toxics Rule Criteria to Protect Human Health and Aquatic Life, USEPA Recommended Criteria to Protect Human Health and Aquatic Life, Agricultural Use Protective Limits, and Taste and Odor Based Criteria. These assessment thresholds have been summarized by the SWRCB and are presented below in Tables 3 and 4. These are the thresholds to which the proposed project should be compared, but apparently not utilized in the DEIR analyses.

In addition to the four metals considered in the DEIR, arsenic, cadmium, manganese, nickel, and zinc concentrations in water from the Sacramento River below the Red Bluff Diversion Dam as well as at Hamilton City exceed various criteria (Tables 3 and 4). The tables also show potential metal concentrations in Sites Reservoir due to evapoconcentration, as discussed on page 6-32 of the DEIR.

Cottonwood Creek is the main tributary contributor to winter flows in the Sacramento River at Red Bluff and is primarily responsible for elevated metals concentrations in the river. As an example of the influence of Cottonwood Creek on metals concentrations in the Sacramento River at Red Bluff, on March 1, 2006 when the total aluminum concentration in Cottonwood Creek was measured as 3,739 ug/L, the concentration in the Sacramento River was 2,240 ug/L (Table 5). But, similar to previous monitoring in the Sacramento River, monitoring of Cottonwood creek did not target higher flows and even higher concentrations of metals are likely to be found with the higher flows. Nor did monitoring in Cottonwood Creek always coincide with sample collection in the Sacramento River. For example, on May 5, 2005, a total aluminum concentration of 14,345 ug/L was analyzed from Cottonwood Creek, but no corresponding sample was collected from the Sacramento River. Estimating the total aluminum concentration using the concentration reported from Cottonwood Creek multiplied by the ratio of concentrations in the Sacramento River and Cottonwood Creek ((Cottonwood Cr) x (Sacramento River/Cottonwood Creek)) from March 1, 2006 yields an estimated concentration in the Sacramento River of 8,594 ug/L for May 5, 2005. This total aluminum concentration is much higher than the few measured analyses from the Sacramento River, and serves to reiterate the likelihood that even higher concentrations of metals would undoubtedly be found with more frequent monitoring and targeting of higher flows, which are the flows that would be diverted to the proposed reservoir. This same relationship applies to other metals and demonstrates that the analysis in the DEIR was not “conservative” but used the little available data to underestimate metal concentrations likely to occur. Since the project proponents have failed to collect any water quality data in the 20 years they have been promoting this project, using data projections such as that discussed above is the most appropriate measure to arrive at a reasonable evaluation.

The concentration of metals in Sites Reservoir was then calculated using the projected maximum Sacramento River concentration and applying the 48 percent evapoconcentration factor described in the DEIR. Using the “conservative” approach of the DEIR, the projected metals concentrations in the Sacramento River at Hamilton City during the May through September release period was next calculated using the maximum metal concentrations in the Sacramento River at Hamilton City (from WDL). The projected metals concentrations in the river at Hamilton City were calculated using 13 percent of the Sites Reservoir concentration after

evapoconcentration (Table 5) and 87 percent of the Sacramento River at Hamilton City concentration (WDL). The Sacramento River at Hamilton City site was used with the assumption that water quality in the river at Hamilton City would be similar to downstream water quality near Dunnigan, the river release site for Alternative 2. The projected metals concentrations in the Sacramento River at Hamilton City, even with dilution of Sites Reservoir releases with Sacramento River water, exceed various water quality objectives or promulgated criteria (Table 6).

Similar results can be expected for discharges from Sites Reservoir to the Colusa Basin Drain. Table 6 shows that concentrations of metals in the CBD, when mixed with 13 percent of water from Sites Reservoir and assuming average metal concentrations in the CBD (p. 6E-10), exceed water quality objectives or promulgated criteria for aluminum, arsenic, copper, iron, lead, manganese, and nickel. Introduction of water from Sites Reservoir to the CBD results in even higher concentrations in the CBD of most metals, including aluminum, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, and zinc.

The “evaluation of concentration assuming no settling of suspended sediment” starting on page 6-44 used data from the “November–May period of higher flows and concentrations to better focus on the range of flows that may occur when Sacramento River water would be diverted to Sites Reservoir.” This is inconsistent with other statements in the DEIR that state that the project’s primary months of diversion to storage would be January through March (page 6-32).

The DEIR states the settling of sediment entering the reservoir would substantially reduce the concentration of metals (page 6-45). Though settling of sediment (and organic matter) entering the reservoir would reduce total metal concentrations, the DEIR does not take into account resuspension of settled sediments by winds or inundation zone erosion when the reservoir level is reduced. In addition, dissolution of metals from the bottom sediments under the anoxic conditions expected to occur in the reservoir can substantially increase metals concentrations in the hypolimnion, which will become distributed throughout the water column following fall turnover. “Settling in the reservoir of 95% or more of the sediment that enters the reservoir” would create a significant source for metals in the reservoir from resuspension or dissolution during certain times of the year.

Table 1. Water Quality Data from the Sacramento River below Red Bluff during the Primary Diversion Period of January through March (D=dissolved, T=total)

Sample Date	D-Aluminum ug/L	T-Aluminum ug/L	D-Arsenic ug/L	T-Arsenic ug/L	D-Cadmium ug/L	T-Cadmium ug/L	D-Chromium ug/L	T-Chromium ug/L	D-Copper ug/L	T-Copper ug/L	D-Iron ug/L	T-Iron ug/L
1/10/05	212	322	1.11	1.18	<0.011	<0.007	1.1	1.14	1.93	2.5	143	358
2/2/05	50.1	134	0.893	0.976	<0.011	<0.066	1.35	2.42	1.67	2.04	39.8	185
3/9/05	11	97.3	1.29	1.33	<0.033	<0.011	1.21	1.23	1.39	1.84	8.1	150
1/4/06	1081	2851	1.3	1.65	0.018	0.081	2.48	7.68	6.99	9.42	811	3925
1/24/06	173	347	0.94	1.05	0.018	0.036	1.26	1.32	1.74	2.23	166	394
2/21/06	131	154	0.702	0.789	0.013	0.016	0.97	0.98	1.08	1.21	76	162
3/1/06	1459	2240	0.857	1.06	0.017	0.055	2.75	6.1	2.59	6.09	878	2854
1/10/07	41.7	91.4	1.42	1.5	<0.1	<0.1	0.55	0.59	0.92	1.01	34.9	54.3
2/26/07	212	322	0.929	0.987	<0.1	<0.1	1.2	1.61	2.55	2.8	293	376
3/21/07	9.58	51	1.41	1.46	<0.1	<0.1	0.44	0.59	1.47	1.74	21.5	85.5
1/22/08	6.82	284	1.5	1.71	<0.1	<0.1	0.53	1.15	1.45	2.04	9.5	259
2/26/08	14.2	846	0.799	0.932	<0.1	<0.1	0.33	2.49	1.97	3.88	14.6	790
3/25/08	2.25	35	1.31	1.37	<0.1	<0.1	0.42	0.55	1.7	2.09	7.8	62
2/23/09	55.6	3630	0.519	1.33	<0.1	<0.1	0.4	6.67	2.54	9.81	88.5	3740
1/25/10	127	3375	0.567	1.51	<0.1	<0.1	0.51	10.3	3.55	14.7	132	4160
2/1/10	25.5	426	0.635	0.727	<0.1	<0.1	0.3	1.07	2.14	3.34	24.1	442
3/1/10	34.0	485	0.596	0.768	<0.1	<0.1	0.33	1.6	1.55	3.03	27	574
3/23/10	1.86	13.2	1	1.06	<0.1	<0.1	0.41	0.45	1.48	2.01	8.8	33.4
1/19/11	6.75	175	0.913	1.03	<0.1	<0.1	0.57	1.22	1.54	2.42	18.6	214
1/31/11	6.26	61.4	1.17	1.18	<0.1	<0.1	0.44	0.61	1.57	1.75	9.8	69.2
2/5/13	6.69	152	1.07	1.31	<0.1	<0.1	0.33	0.56	1.23	1.66	11.4	157
2/3/14	8.61	19.3	1.92	1.93	<0.1	<0.1	0.44	0.49	0.79	0.93	31.3	46
2/3/15	4.64	169	1.29	1.62	<0.1	<0.1	0.3	0.72	1.55	3.26	10	207
2/8/16	18.7	78.8	1.23	1.33	<0.1	<0.1	0.51	0.62	1.33	1.81	23.6	104
2/6/17	130	761	0.857	1.11	<0.1	<0.1	0.46	2.11	1.64	4.67	126	729
2/13/18	4.59	23.2	1.55	1.61	<0.1	<0.1	0.58	0.71	0.96	1.22	13.2	51.2
2/18/20			1	1								
Count	26	26	27	27	4	4	26	26	26	26	26	26
Minimum	1.86	13.2	0.52	0.73	ND	ND	0.30	0.45	0.79	0.93	7.8	33.4
Average	151	659	1.07	1.24	0.02	0.05	0.78	2.11	1.90	3.44	117	776
Maximum	1459	3630	1.92	1.93	0.018	0.081	2.75	10.3	6.99	14.7	878	4160

Table 1. Continued

Sample Date	D-Lead ug/L	T-Lead ug/L	D-Manganese ug/L	T-Manganese ug/L	T-Mercury ng/L	D-Nickel ug/L	T-Nickel ug/L	D-Selenium ug/L	T-Selenium ug/L	D-Silver ug/L	T-Silver ug/L	D-Zinc ug/L	T-Zinc ug/L
1/10/05	0.045	0.144	1.38	10.5	ND	1.02	1.6	0.29	0.3	<0.003	0.003	1.67	3.91
2/2/05	0.021	0.075	1.11	7.66	ND	0.9	1.32	ND	ND	<0.001	0.003	1.64	3.15
3/9/05	0.012	0.072	0.64	6.24	ND	0.77	1.2	ND	0.22	<0.001	ND	0.41	2.48
1/4/06	0.575	1.51	10.7	113	ND	2.94	12.2	ND	0.35	<0.001	0.015	7.63	18.8
1/24/06	0.048	0.147	7.25	15.6	ND	1.46	2.11	ND	0.19	<0.005	ND	2.49	3.76
2/21/06	ND	0.049	2.37	5.71	ND	1.53	1.82	ND	0.15	<0.009	ND	1.45	1.99
3/1/06	0.274	1.1	13.5	78.9	ND	2.84	8.57	ND	0.16	<0.009	ND	4.49	13.2
1/10/07	ND	ND	1.37	3.13	0.59	0.97	1.02	ND	ND	<0.03	ND	0.71	2.82
2/26/07	0.149	0.234	6.43	10.2	2.6	1.14	1.49	0.2	0.28	<0.03	ND	3.09	5.68
3/21/07	ND	0.04	1.27	4.8	ND	0.84	0.97	ND	0.2	<0.03	ND	0.38	3.58
1/22/08	ND	0.13	0.73	12.9	ND	0.91	1.08	ND	ND	<0.03	ND	1.33	4.59
2/26/08	ND	0.388	0.58	23.4	ND	1.58	3	ND	0.21	<0.03	ND	0.97	6.85
3/25/08	ND	ND	0.36	6.12	ND	0.71	0.95	ND	0.25	<0.03	ND	0.44	3.11
2/23/09	ND	2.25	1.33	133	ND	1.44	9.9	ND	ND	<0.03	ND	1.28	26
1/25/10	0.069	3.14	1.93	144	ND	13.2	15.7	0.26	0.88	<0.03	0.099	0.76	0.88
2/1/10	ND	0.245	0.74	17.2	ND	1.9	2.01	ND	ND	<0.03	ND	2.09	8.08
3/1/10	ND	0.338	0.88	23.1	ND	0.96	2.44	0.2	0.21	<0.03	ND	0.98	6.09
5/23/10	ND	ND	0.52	3.24	ND	0.6	0.67	0.51	0.61	<0.03	ND	0.19	1.95
1/19/11	ND	0.172	0.86	12.2	ND	1.17	1.38	0.22	0.24	<0.03	ND	1.62	4.38
1/31/11	ND	ND	0.58	5.32	ND	0.81	0.96	ND	ND	<0.03	ND	2.32	4.08
2/5/13	ND	0.055	0.32	4.75	1.2	0.52	0.8	ND	ND	<0.03	ND	1.13	2.84
2/3/14	ND	ND	2.88	4.57	0.7	0.43	0.5	ND	ND	<0.03	ND	0.65	1.09
2/3/15	ND	0.166	0.19	4.75	3.4	0.93	1.3	ND	ND	<0.03	ND	0.88	4.43
1/8/16	ND	0.065	0.32	6.73	1.5	0.82	1.19	0.25	0.28	<0.03	ND	0.94	2.53
2/6/17	ND	0.575	2.78	31.1	ND	1.41	3.89	ND	0.26	<0.03	ND	0.78	7.37
2/13/18	ND	ND	0.34	3.16	ND	1.32	1.7	ND	ND	<0.03	ND	0.29	0.56
2/18/20													
Count	8	20	26	26	6	26	26	7	18	0	4	28	26
Minimum	ND	ND	0.15	3.13	ND	0.43	0.50	ND	ND	ND	ND	0.19	0.56
Average	0.149	0.54	2.35	27	1.7	1.7	3.0	0	0	ND	0	1.56	6
Maximum	0.575	3.14	13.5	144	3.4	13.2	15.7	0.5	0.88	ND	0.099	7.63	26

Table 2. Water Quality Data from the Sacramento River at Hamilton City during the Primary Diversion Period of January through March (D=dissolved, T=total)

Sample Date	D-Aluminum µg/L	T-Aluminum µg/L	D-Arsenic µg/L	T-Arsenic µg/L	D-Cadmium µg/L	T-Cadmium µg/L	D-Chromium µg/L	T-Chromium µg/L	D-Copper µg/L	T-Copper µg/L	D-Iron µg/L	T-Iron µg/L
1/10/05	352	413	1.48	1.55	<0.011	<0.007	1.06	1.44	1.98	2.45	225	443
2/2/05	77.5	163	1.42	1.51	<0.011	<0.066	1.67	1.88	1.53	1.73	71.5	223
3/10/05	11	75.7	2.03	2.08	<0.033	<0.011	1.29	1.39	1.09	1.37	<3.34	118
1/4/06	866	3462	1.61	2.35	0.014	0.092	2.61	9.74	2.47	11.2	569	4787
1/24/06	359	709	1.41	1.49	0.011	0.042	1.51	2.4	1.62	2.92	214	923
2/21/06	222	733	1.3	1.47	0.014	0.029	1.18	2.34	1.12	2.55	139	913
3/1/06	2887	4955	1.36	1.85	0.021	0.087	4.99	11.2	4.26	11.5	1773	6116
1/9/07	61.6	138	2.08	2.23	<0.1	<0.1	0.66	0.69	0.9	1.04	46.3	79.1
2/26/07	478	657	1.31	1.42	<0.1	<0.1	1.81	1.91	2.99	3.9	591	916
3/20/07	16.1	91.6	2.17	2.36	<0.1	<0.1	0.41	0.71	1.22	1.55	26.6	154
2/20/08	5.62	85.8	2.04	2.27	<0.1	<0.1	0.49	0.78	1.09	1.26	7.4	105
2/24/09	51.1	3110	1.62	4.07	<0.1	<0.1	0.47	7.07	2.03	8.21	68.6	3210
2/2/10	12	340	1.37	1.43	<0.1	<0.1	0.36	1.05	1.76	3.65	17.1	383
2/1/11	5.73	53.6	1.9	1.96	<0.1	<0.1	0.43	0.55	1.29	1.41	12	59.6
1/31/12	178	276	2.04	2.2	<0.1	<0.1	0.52	0.6	1	1.33	94.1	162
2/6/13	3.6	127	1.98	2	<0.1	<0.1	0.32	0.75	1.1	1.32	8.2	124
2/4/14	0.19	6.03	2.7	2.88	<0.1	<0.1	0.52	1.31	0.72	0.85	6.2	26.2
2/10/15	21.2	1960	1	2.14	<0.1	<0.1	0.33	5.3	1.96	8	63.2	2100
2/3/16	39.7	352	1.26	1.49	<0.1	<0.1	0.44	1.73	1.15	2.14	42.8	349
2/6/17	136	1020	1.16	1.67	<0.1	<0.1	0.52	3.85	1.79	5.78	138	1100
Count	20	20	20	20	20	20	20	20	20	20	20	20
Minimum	0.19	6.03	1.00	1.42	0.011	0.029	0.32	0.55	0.72	0.85	6.2	26.2
Average	289	936	1.66	2.02	0.02	0.06	1.08	2.83	1.65	3.71	216	1115
Maximum	2887	4955	2.7	4.07	0.021	0.092	4.99	11.2	4.26	11.5	1773	6116

Table 2. Continued

Sample Date	D-Lead µg/L	T-Lead µg/L	D-Manganese µg/L	T-Manganese µg/L	T-Mercury ng/L	D-Nickel µg/L	T-Nickel µg/L	D-Selenium µg/L	T-Selenium µg/L	D-Silver µg/L	T-Silver µg/L	D-Zinc µg/L	T-Zinc µg/L
1/10/05	0.064	0.168	2.22	12.4	N/A	1.39	1.98	0.3	0.34	<0.003	<0.002	1.54	3.1
2/2/05	0.029	0.084	2.54	10.6	N/A	1.02	1.53	<0.222	0.27	0.002	0.003	0.95	1.96
3/10/05	0.008	0.049	0.98	6.37	N/A	0.87	1.24	<0.245	<0.19	<0.001	<0.036	0.36	1.06
1/4/06	0.191	1.89	9.75	134	N/A	2.67	15.4	<0.149	0.22	<0.001	0.021	2.24	20.8
1/24/06	0.062	0.306	9.24	32.4	N/A	1.68	3.32	<0.186	0.19	<0.005	<0.005	1.55	4.71
2/21/06	0.046	0.299	5.83	27.5	N/A	1.53	3.32	<0.149	0.3	<0.009	<0.009	1	3.94
3/1/06	0.648	2.04	23.2	146	N/A	4.69	15.7	<0.149	0.29	<0.009	<0.009	5.79	21.7
1/9/07	<0.04	<0.04	2.22	5.24	0.68	1.01	1.08	<0.2	<0.2	<0.03	<0.03	0.64	2.57
2/26/07	0.262	0.581	10.3	28.8	2.8	2.22	2.99	<0.2	0.23	<0.03	<0.03	3.68	8.39
3/20/07	<0.04	0.056	2.01	8.22	1.6	0.85	1.22	<0.2	<0.2	<0.03	<0.03	0.31	2.82
2/20/08	<0.04	0.041	0.7	8.15	N/A	0.88	0.95	<0.2	0.22	<0.03	<0.03	0.71	3.31
2/24/09	<0.04	1.47	1.28	101	N/A	2.59	11	0.2	0.25	<0.03	<0.03	0.52	14.3
2/2/10	<0.04	0.188	1.01	17.1	N/A	1.78	2.08	<0.2	<0.2	<0.03	<0.03	1.39	5.43
2/1/11	<0.04	<0.04	0.67	6.4	N/A	0.71	0.9	<0.2	<0.2	<0.03	<0.03	0.76	2.68
1/31/12	<0.04	<0.04	1.87	9.58	N/A	0.68	1.11	<0.2	<0.2	<0.03	<0.03	1.17	2.32
2/6/13	<0.04	<0.04	0.35	5.45	1.3	0.44	0.65	<0.2	<0.2	<0.03	<0.03	0.93	1.45
2/4/14	<0.04	<0.04	0.35	2.17	0.8	0.54	0.69	<0.2	0.21	<0.03	<0.03	0.21	0.97
2/10/15	<0.04	1.52	0.96	59.6	29.1	1.36	6.88	0.26	0.31	<0.03	0.037	0.38	13.9
2/3/16	<0.04	0.204	0.62	17.7	3.5	1.26	2.47	0.21	0.28	<0.03	<0.03	0.75	2.98
2/6/17	<0.04	0.945	3.35	43	N/A	1.08	5.36	0.36	0.37	<0.03	<0.03	0.86	9.16
Count	20	20	20	20	20	20	20	20	20	20	20	20	20
Minimum	0.008	0.041	0.35	2.17	0.68	0.44	0.65	0.2	0.19	0.002	0.003	0.21	0.97
Average	0.16	0.66	3.97	34.08	5.68	1.46	3.99	0.27	0.27	0.00	0.02	1.29	6.38
Maximum	0.648	2.04	23.2	146	29.1	4.69	15.7	0.36	0.37	0.002	0.037	5.79	21.7

Table 3. Water Quality Objectives, Numeric Thresholds, and Exceedances for the Sacramento River below Red Bluff

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WQI Data				Evapoconcentrated			
		Source of Numeric Threshold <i>(footnotes in parentheses are at bottom of table)</i>	Numeric Threshold ug/L	G=Groundwater IS=Inland SW E=EB/Estuary O=Ocean	Dissolved		Total		Dissolved		Total	
					Max	Min	Max	Min	Max	Min	Max	Min
Aluminum					1459	1.86	3630	13.2	2159	2.75	5372.4	19.5
	Chemical Constituents	California Primary MCL	1,000	G & IS	X		X		X		X	
		California Secondary MCL	200	G & IS	X		X		X		X	
		Water Quality for Agriculture (Ayers & Westcot)	5,000	G & IS							X	
	Tastes and Odors	California Secondary MCL	200	G & IS	X		X		X		X	
	Toxicity - humans	California Public Health Goal for Drinking Water	600	G & IS	X		X		X		X	
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, total (f)	87	IS	X		X		X		X	
		USEPA National Recomm. WQ Criteria, 1-hour avg, total (f)	750	IS	X		X		X		X	
Arsenic					1.92	0.52	1.93	0.73	2.84	0.77	2.8564	1.08
	Chemical Constituents	California Primary MCL	10	G & IS								
		Water Quality for Agriculture (Ayers & Westcot)	100	G & IS								
	Toxicity - humans	California Public Health Goal for Drinking Water	0.004	G & IS	X	X	X	X	X	X	X	X
		USEPA National Recomm. WQ Criteria, water & fish consump.	0.018	IS	X	X	X	X	X	X	X	X
		USEPA National Recomm. WQ Criteria, fish consumption	0.14	E & O	X	X	X	X	X	X	X	X
		Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.023	G & IS	X	X	X	X	X	X	X	X
		USEPA Health Advisory for drinking water	0.02	G & IS	X	X	X	X	X	X	X	X
		California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity	0.05	G & IS	X	X	X	X	X	X	X	X
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	150	IS								
		California Toxics Rule (USEPA), 1-hour average (dissolved)	340	IS								
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	36	E								
		California Toxics Rule (USEPA), 1-hour average (dissolved)	88	E								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	8	O								
		Aquatic Life Protection Objective, daily maximum	32	O								
		Aquatic Life Protection Objective, instantaneous maximum	80	O								
Cadmium					0.02	ND	0.081	ND	0.03	ND	0.11988	ND
	Chemical Constituents	California Primary MCL	5	G & IS								
		Water Quality for Agriculture (Ayers & Westcot)	10	G & IS								
	Toxicity - humans	California Public Health Goal for Drinking Water	0.04	G & IS			X				X	
		Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.023	G & IS			X		X		X	
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	1.1	IS								
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	1.6	IS								
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8.3	E & O								
		California Toxics Rule (USEPA), 1-hour average, dissolved	42	E & O								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	1	O								
		Aquatic Life Protection Objective, daily maximum	4	O								
		Aquatic Life Protection Objective, instantaneous maximum	10	O								
Chromium (III)					2.75	0.3	10.3	0.45	4.07	0.44	15.244	0.67
	Chemical Constituents	California Primary MCL (total chromium)	50	G & IS								
	Toxicity - humans	USEPA IRIS Reference Dose (r)	10,000	G & IS								
		Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.07	G & IS	X	X	X	X	X	X	X	X
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, dissolved (f)	84	IS								
		National Toxics Rule (USEPA), 1-hour average, dissolved (f)	260	IS								
	CA Ocean Plan - humans	Human Health Protection Objective, fish consumption	190,000	O								
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, acute tox info / 10	1,030	E & O								



Table 3. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			G=Groundwater IS=Inland SW E=Estuary O=Ocean	WDL Data				Evapoconcentrated			
		Source of Numeric Threshold <i>(footnotes in parentheses are at bottom of table)</i>	Numeric Threshold ug/L	G & IS		Dissolved		Total		Dissolved		Total	
						Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	Max ug/L	Min
Copper						6.99	0.79	14.7	0.93	10.3	1.17	21.756	1.38
	Chemical Constituents	California Primary MCL	1,300	G & IS									
		California Secondary MCL	1,000	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS									
	Tastes and Odors	California Secondary MCL & USEPA Nat. Res. WQ Criteria	1,000	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	300	G									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	1300	IS									
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	4.1	IS		x		x		x		x	
		California Toxics Rule (USEPA), 1-hour average, dissolved (j)	5.7	IS		x		x		x		x	
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	3.1	E		x		x		x		x	
		California Toxics Rule (USEPA), 1-hour average, dissolved	4.8	E		x		x		x		x	
	CA Ocean Plan - eq life	Aquatic Life Protection Objective, 6-month median	3	O		x		x		x		x	
		Aquatic Life Protection Objective, daily maximum	12	O				x				x	
		Aquatic Life Protection Objective, instantaneous maximum	30	O									
Iron						878	7.8	4160	33.4	1299	11.5	6156.8	49.4
	Chemical Constituents	California Secondary MCL	300	G & IS		x		x		x		x	
		Water Quality for Agriculture (Ayers & Westcot)	5,000	G & IS									
	Tastes and Odors	California Secondary MCL	300	G & IS		x		x		x		x	
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day average	1,000	IS				x		x		x	
Lead						0.58	ND	3.14	ND	0.85	ND	4.6472	ND
	Chemical Constituents	California Primary MCL	15	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	5,000	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	0.2	G & IS		x		x		x		x	
		California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity	0.25	G & IS		x		x		x		x	
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	0.92	IS				x				x	
		California Toxics Rule (USEPA), 1-hour average, dissolved (j)	24	IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	0.1	E									
		California Toxics Rule (USEPA), 1-hour average, dissolved	210	E									
	CA Ocean Plan - eq life	Aquatic Life Protection Objective, 6-month median	2	O				x				x	
		Aquatic Life Protection Objective, daily maximum	8	O									
		Aquatic Life Protection Objective, instantaneous maximum	20	O									
Manganese						13.5	0.19	144	3.13	20	0.28	213.12	4.63
	Chemical Constituents	California Secondary MCL	90	G & IS				x				x	
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS									
	Tastes and Odors	California Secondary MCL	50	G & IS				x				x	
	Toxicity - humans	California DPH Notification Level for drinking water	500	G & IS									
		USEPA National Recomm. WQ Criteria, fish consumption	100	IS & E & O				x				x	
Mercury								0.0034	ND			0.00503	ND
	Chemical Constituents	California Primary MCL	2	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	1.2	G									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	0.05	IS									
		California Toxics Rule (USEPA) for other waters	0.051	IS & E									
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.77	IS									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.4	IS									
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.04	E & O									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.8	E & O									
	CA Ocean Plan - eq life	Aquatic Life Protection Objective, 6-month median	0.04	O									
		Aquatic Life Protection Objective, daily maximum	0.16	O									
		Aquatic Life Protection Objective, instantaneous max	0.4	O									

Table 3. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			G=Groundwater IS=Inland SW E=EB/Estuary O=Ocean	WDL Data				Evapoconcentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L	Max ug/L		Min ug/L	Max ug/L	Min ug/L	Max ug/L	Min ug/L	Max ug/L	Min ug/L	
													Dissolved
Nickel						13.2	0.43	15.7	0.5	19.5	0.64	23.2	0.74
	Chemical Constituents	California Primary MCL	100		G & IS								
		Water Quality for Agriculture (Ayers & Westcott)	200		G & IS								
	Toxicity - humans	California Public Health Goal for Drinking Water	12		G	x		x		x		x	
		USEPA National Recomm. WQ Criteria, fish consumption	4,600		IS & E & O								
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	610		IS								
		California Toxics Rule (USEPA) for other waters	4,600		IS & E								
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	24		IS								
		California Toxics Rule (USEPA), 1-hour average, dissolved (i)	220		IS								
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	6		E	x		x		x		x	
		California Toxics Rule (USEPA), 1-hour average, dissolved	74		E								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	5		O	x		x		x		x	
		Aquatic Life Protection Objective, daily maximum	20		O							x	
		Aquatic Life Protection Objective, instantaneous maximum	50		O								
Selenium						0.51	ND	0.88	ND	0.75	ND	1.30	
	Chemical Constituents	California Primary MCL	50		G & IS								
		Water Quality for Agriculture (Ayers & Westcott)	20		G & IS								
	Toxicity - humans	California Public Health Goal for Drinking Water	38		G & IS								
		USEPA National Recomm. WQ Criteria, water & fish consump.	170		IS								
		USEPA National Recomm. WQ Criteria, fish consumption	4,200		E & O								
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, total	5		IS								
		National Toxics Rule (USEPA), 1-hour average, total	20		IS								
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	71		E								
		California Toxics Rule (USEPA), 1-hour average, dissolved	280		E								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	15		O								
		Aquatic Life Protection Objective, daily maximum	60		O								
		Aquatic Life Protection Objective, instantaneous maximum	150		O								
Zinc						7.63	0.19	26	0.56	11.3	0.28	38.5	0.83
	Chemical Constituents	California Secondary MCL	5,000		G & IS								
		Water Quality for Agriculture (Ayers & Westcott)	2,000		G & IS								
	Tastes and Odors	California Secondary MCL	5,000		G & IS								
	Toxicity - humans	USEPA IRIS Reference Dose (c)	2,100		G & IS								
		USEPA National Recomm. WQ Criteria, water & fish consump.	7,400		IS								
		USEPA National Recomm. WQ Criteria, fish consumption	26,000		E & O								
	CTR - fw aquatic life	California Toxics Rule (USEPA), 1-hour average, dissolved (f)	54		IS								
		California Toxics Rule (USEPA), 4-day average, dissolved (f)	54		IS								
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	81		E & O								
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	90		E & O								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective for Lead, 6-month median	20		O			x				x	
		Aquatic Life Protection Objective for Lead, daily maximum	80		O								
		Aquatic Life Protection Objective for Lead, instantaneous max	200		O								

Table 4. Water Quality Objectives, Numeric Thresholds, and Exceedances for the Sacramento River at Hamilton City

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WDL Data				Evapoconcentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L		Dissolved		Total		Dissolved		Total	
					Max	Min	Max	Min	Max	Min	Max	Min
					ug/L		ug/L		ug/L		ug/L	
Aluminum					2887	0.19	4955	6.03	4273	0.28	7333	8.92
Chemical Constituents	California Primary MCL	1,000	G & IS	x		x		x		x		
	California Secondary MCL	200	G & IS	x		x		x		x		
	Water Quality for Agriculture (Ayers & Westcott)	5,000	G & IS								x	
Tastes and Odors	California Secondary MCL	200	G & IS	x		x		x		x		
Toxicity - humans	California Public Health Goal for Drinking Water	600	G & IS	x		x		x		x		
Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, total (f)	87	IS	x		x		x		x		
	USEPA National Recomm. WQ Criteria, 1-hour avg, total (f)	750	IS	x		x		x		x		
Arsenic					2.7	1.00	4.07	1.42	4.0	1.48	6.02	2.10
Chemical Constituents	California Primary MCL	10	G & IS									
	Water Quality for Agriculture (Ayers & Westcott)	100	G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water	0.004	G & IS	x	x	x	x	x	x	x	x	x
	USEPA National Recomm. WQ Criteria, water & fish consump.	0.016	IS	x	x	x	x	x	x	x	x	x
	USEPA National Recomm. WQ Criteria, fish consumption	0.14	E & O	x	x	x	x	x	x	x	x	x
	Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.023	G & IS	x	x	x	x	x	x	x	x	x
	California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity	0.06	G & IS	x	x	x	x	x	x	x	x	x
	USEPA IRIS Reference Dose Drinking Water Health Advisories	2.1	G & IS	x		x		x		x		x
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	150	IS									
	California Toxics Rule (USEPA), 1-hour average (dissolved)	340	IS									
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	36	E									
	California Toxics Rule (USEPA), 1-hour average (dissolved)	60	E									
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	8	O									
	Aquatic Life Protection Objective, daily maximum	32	O									
	Aquatic Life Protection Objective, instantaneous maximum	80	O									
Cadmium					0.021	ND	0.092	ND	0.031	ND	0.136	ND
Chemical Constituents	California Primary MCL	5	G & IS									
	Water Quality for Agriculture (Ayers & Westcott)	10	G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water	0.04	G & IS			x					x	
	Cal EPA - One in a million incremental cancer risk estimate for drinking water	0.0023	G & IS	x		x		x		x		x
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	1.1	IS									
	California Toxics Rule (USEPA), 1-hour average, dissolved (f)	1.6	IS									
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	9.3	E & O									
	California Toxics Rule (USEPA), 1-hour average, dissolved	42	E & O									
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	1	O									
	Aquatic Life Protection Objective, daily maximum	4	O									
	Aquatic Life Protection Objective, instantaneous maximum	10	O									

Table 4. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WDL Data				Evapococoncentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L	Dissolved		Total		Dissolved		Total		
				Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	
Chromium (III)				4.99	0.32	11.2	0.55	7.39	0.47	16.6	0.814	
Chemical Constituents	California Primary MCL (total chromium)		50 G & IS									
Toxicity - humans	USEPA IRIS Reference Dose (c)		10,500 G & IS									
	Cal EPA/OEHHA - California Public Health Goal		0.02 G & IS	x	x	x	x	x	x	x	x	
	Cal EPA - One in a million incremental cancer risk estimate for drinking water		0.07 G & IS	x	x	x	x	x	x	x	x	
NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, dissolved (i)		84 IS									
	National Toxics Rule (USEPA), 1-hour average, dissolved (j)		269 IS									
CA Ocean Plan - humans	Human Health Protection Objective, fish consumption		198,000 O									
Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, acute tox info / 10		1,030 E & O									
Copper				4.26	0.72	11.5	0.85	6.30	1.07	17.0	1.258	
Chemical Constituents	California Primary MCL		1,300 G & IS									
	California Secondary MCL		1,000 G & IS									
	Water Quality for Agriculture (Ayens & Westcot)		209 G & IS									
Tastes and Odors	California Secondary MCL & USEPA Nat. Rec. WQ Criteria		1,000 G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water		309 G									
CTR - humans	California Toxics Rule (USEPA) for sources of drinking water		1300 IS									
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (i)		4.1 IS	x		x		x		x		
	California Toxics Rule (USEPA), 1-hour average, dissolved (j)		5.7 IS			x		x		x		
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved		3.1 E	x		x		x		x		
	California Toxics Rule (USEPA), 1-hour average, dissolved		4.8 E			x		x		x		
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median		3 O	x		x		x		x		
	Aquatic Life Protection Objective, daily maximum		12 O							x		
	Aquatic Life Protection Objective, instantaneous maximum		30 O									
Iron				1773	6.2	6116	26.2	2624	9.18	9052	38.8	
Chemical Constituents	California Secondary MCL		309 G & IS	x		x		x		x		
	Water Quality for Agriculture (Ayens & Westcot)		5,000 G & IS			x				x		
Tastes and Odors	California Secondary MCL		309 G & IS	x		x		x		x		
Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day average		1,000 IS	x		x		x		x		
Lead				0.648	0.008	2.04	0.041	0.959	ND	3.02	ND	
Chemical Constituents	California Primary MCL		15 G & IS									
	Water Quality for Agriculture (Ayens & Westcot)		5,000 G & IS									
Toxicity - humans	California Public Health Goal for Drinking Water		0.2 G & IS	x		x		x		x		
	Cal EPA - One in a million incremental cancer risk estimate for drinking water		0.2 G & IS	x		x		x		x		
	California Proposition 65 Safe Harbor Level - Max. Allowable dose level for reproductive toxicity		0.25 G & IS	x		x		x		x		
CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (i)		0.92 IS			x		x		x		
	California Toxics Rule (USEPA), 1-hour average, dissolved (j)		24 IS									
CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved		8.1 E									
	California Toxics Rule (USEPA), 1-hour average, dissolved		219 E									
CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median		2 O			x				x		
	Aquatic Life Protection Objective, daily maximum		8 O									
	Aquatic Life Protection Objective, instantaneous maximum		20 O									

Table 4. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion				WDL Data				Evapoconcentrated			
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L		Dissolved		Total		Dissolved		Total		
					Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	Max ug/L	Min	
Manganese					23.2	0.35	146	2.17	34.3	0.52	216	3.21	
	Chemical Constituents	California Secondary MCL	90	G & IS			x				x		
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS							x		
	Tastes and Odors	California Secondary MCL	90	G & IS			x				x		
	Toxicity - humans	California DPH Notification Level for drinking water	500	G & IS									
		USEPA National Recomm. WQ Criteria, fish consumption	100	E & O			x				x		
Mercury							0.025	#####			0.0431	0.00101	
	Chemical Constituents	California Primary MCL	2	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	1.2	G									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	0.05	IS									
		California Toxics Rule (USEPA) for other waters	0.051	IS & E									
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.77	IS									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.4	IS									
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	0.94	E & O									
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	1.8	E & O									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	0.04	O									
		Aquatic Life Protection Objective, daily maximum	0.16	O									
		Aquatic Life Protection Objective, instantaneous max	0.4	O									
Nickel					4.69	0.44	15.7	0.65	6.94	0.65	23.2	0.96	
	Chemical Constituents	California Primary MCL	100	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	200	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	12	G			x				x		
		USEPA National Recomm. WQ Criteria, fish consumption	4,600	E & O									
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	616	IS									
		California Toxics Rule (USEPA) for other waters	4,600	IS & E									
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	24	IS									
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	220	IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8	E			x				x		
		California Toxics Rule (USEPA), 1-hour average, dissolved	74	E									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	5	O			x		x		x		
		Aquatic Life Protection Objective, daily maximum	20	O							x		
		Aquatic Life Protection Objective, instantaneous maximum	80	O									
Selenium					0.36	0.20	0.37	0.19	0.53	ND	0.55	ND	
	Chemical Constituents	California Primary MCL	80	G & IS									
		Water Quality for Agriculture (Ayers & Westcot)	20	G & IS									
	Toxicity - humans	California Public Health Goal for Drinking Water	30	G & IS									
		USEPA National Recomm. WQ Criteria, water & fish consump.	170	IS									
		USEPA National Recomm. WQ Criteria, fish consumption	4,200	E & O									
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, total	5	IS									
		National Toxics Rule (USEPA), 1-hour average, total	20	IS									
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	71	E									
		California Toxics Rule (USEPA), 1-hour average, dissolved	290	E									
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	15	O									
		Aquatic Life Protection Objective, daily maximum	60	O									
		Aquatic Life Protection Objective, instantaneous maximum	150	O									

Table 4. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			WDL Data				Evaporconcentrated			
		Source of Numeric Threshold <i>(footnotes in parentheses are at bottom of table)</i>	Numeric Threshold ug/L		Dissolved		Total		Dissolved		Total	
					Max	Min	Max	Min	Max	Min	Max	Min
					ug/L		ug/L		ug/L		ug/L	
Zinc					5.79	0.21	21.7	0.97	8.5692	0.31	32.1	1.44
	Chemical Constituents	California Secondary MCL	5,000	G & IS								
		Water Quality for Agriculture (Ayers & Westcott)	2,000	G & IS								
	Tastes and Odors	California Secondary MCL	5,000	G & IS								
	Toxicity - humans	USEPA IRIS Reference Dose (c)	2,100	G & IS								
		USEPA National Recomm. WQ Criteria, water & fish consump.	7,400	IS								
		USEPA National Recomm. WQ Criteria, fish consumption	26,000	E & O								
	CTR - fw aquatic life	California Toxics Rule (USEPA), 1-hour average, dissolved (f)	54	IS								
		California Toxics Rule (USEPA), 4-day average, dissolved (f)	54	IS								
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg, dissolved	81	E & O								
		USEPA National Recomm. WQ Criteria, 1-hour avg, dissolved	90	E & O								
	CA Ocean Plan - aq life	Aquatic Life Protection Objective for Lead, 6-month median	20	O			x				x	
		Aquatic Life Protection Objective for Lead, daily maximum	80	O								
		Aquatic Life Protection Objective for Lead, instantaneous max	200	O								

Table 5 Projected Metals Concentrations

	Sample Date	D-Aluminum ug/L	T-Aluminum ug/L	D-Arsenic ug/L	T-Arsenic ug/L	D-Cadmium ug/L	T-Cadmium ug/L	D-Chromium ug/L	T-Chromium ug/L
Cottonwood Creek	3/1/06	2533	3739	0.889	1.16	0.009	0.023	8.2	15.7
Sacramento R below Red Bluff	3/1/06	1459	2240	0.857	1.06	0.017	0.055	2.75	6.1
Multiplication Factor (SacR/CottonwoodCr)		0.6	0.6	1.0	0.9	1.9	2.4	0.3	0.4
Maximum Cottonwood Creek Concentration		2533	14345	0.889	3.04	0.009	0.085	8.2	36.5
Projected Maximum Sacramento River Concentration		1459	8594	0.857	2.78	0.017	0.203	2.75	14.2
Sites Reservoir Concentration after Evapoconcentration (48 percent)		2159	12719	1.27	4.11	0.025	0.30	4.07	21.0
Sacramento River at Hamilton City (May through September, WDI)		1075	6686	2.36	3.17	0.007	0.076	2.69	18.9
Effects of Sites Reservoir Releases on Water Quality in the Sacramento River at Hamilton City		1216	7470	2.22	3.29	0.009	0.105	2.87	19.17

	Sample Date	D-Copper ug/L	T-Copper ug/L	D-Iron ug/L	T-Iron ug/L	D-Lead ug/L	T-Lead ug/L	D-Manganese ug/L	T-Manganese ug/L
Cottonwood Creek	3/1/06	3.22	7.63	1760	5793	0.491	1.53	30.8	138
Sacramento R below Red Bluff	3/1/06	2.59	6.09	878	2854	0.274	1.1	13.5	78.9
Multiplication Factor (SacR/CottonwoodCr)		0.8	0.8	0.5	0.5	0.6	0.7	0.4	0.6
Maximum Cottonwood Creek Concentration		4.43	39.2	1760	23594	0.491	7.26	30.8	563
Projected Maximum Sacramento River Concentration		3.56	31.29	878	11624	0.274	5.2	13.5	322
Sites Reservoir Concentration after Evapoconcentration (48 percent)		5.27	46.3	1299	17209	0.41	7.7	20.0	476
Sacramento River at Hamilton City (May through September, WDI)		3.11	18.7	726	10052	0.202	3.24	7.33	272
Effects of Sites Reservoir Releases on Water Quality in the Sacramento River at Hamilton City		3.39	22.29	801	10982	0.228	3.82	8.97	299

	Sample Date	D-Nickel ug/L	T-Nickel ug/L	D-Selenium ug/L	T-Selenium ug/L	D-Silver ug/L	T-Silver ug/L	D-Zinc ug/L	T-Zinc ug/L
Cottonwood Creek	3/1/06	7.35	20.9	0	0.15	ND	ND	3.64	13.6
Sacramento R below Red Bluff	3/1/06	2.84	8.57	0	0.16	ND	ND	4.49	13.2
Multiplication Factor (SacR/CottonwoodCr)		0.4	0.4	1.0	1.1	-	-	1.2	1.0
Maximum Cottonwood Creek Concentration		7.35	57.9	0.74	0.81	0.039	0.181	3.64	72
Projected Maximum Sacramento River Concentration		2.84	23.7	0.74	0.86	-	-	4.49	70
Sites Reservoir Concentration after Evapoconcentration (48 percent)		4.20	35.1	1.10	1.28	-	-	6.55	103
Sacramento River at Hamilton City (May through September, WDI)		2.75	10.7	0.34	0.35	0.018	2.11	2.46	35

Table 6. Projected metals concentrations in the Sacramento River at Hamilton City and CBD with dilution of Sites Reservoir water in the respective water bodies

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion				Sacramento River at Hamilton City		Cofusa Basin Drain	
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold	Units	G=Groundwater IS=Inland SW E=EB/Estuary O=Ocean	Dissolved	Total	Dissolved	Total
Aluminum						1216	7470	338	2542
	Chemical Constituents	California Primary MCL	1,000	ug/L	G & IS	x	x		x
		California Secondary MCL	200	ug/L	G & IS	x	x		x
		Water Quality for Agriculture (Ayens & Westcot)	5,000	ug/L	G & IS		x		
	Tastes and Odors	California Secondary MCL	200	ug/L	G & IS	x	x		x
	Toxicity - humans	California Public Health Goal for Drinking Water	600	ug/L	G & IS	x	x		x
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day avg. total (f)	87	ug/L	IS	x	x		x
		USEPA National Recomm. WQ Criteria, 1-hour avg. total (f)	750	ug/L	IS	x	x		x
Arsenic						2.22	3.29	3.85	4.67
	Chemical Constituents	California Primary MCL	10	ug/L	G & IS				
		Water Quality for Agriculture (Ayens & Westcot)	100	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	0.004	ug/L	G & IS	x	x	x	x
		USEPA National Recomm. WQ Criteria, water & fish consump.	0.018	ug/L	IS	x	x	x	x
		USEPA National Recomm. WQ Criteria, fish consumption	0.14	ug/L	E & O	x	x	x	x
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	150	ug/L	IS				
		California Toxics Rule (USEPA), 1-hour average (dissolved)	340	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average (dissolved)	38	ug/L	E				
		California Toxics Rule (USEPA), 1-hour average (dissolved)	68	ug/L	E				
	CA Ocean Plan - sq life	Aquatic Life Protection Objective, 6-month median	8	ug/L	G				
		Aquatic Life Protection Objective, daily maximum	32	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	80	ug/L	O				
Cadmium						0.009	0.105	0.054	0.089
	Chemical Constituents	California Primary MCL	5	ug/L	G & IS				
		Water Quality for Agriculture (Ayens & Westcot)	10	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	0.04	ug/L	G & IS		x		
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	1.1	ug/L	IS				
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	1.6	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	9.9	ug/L	E & O				
		California Toxics Rule (USEPA), 1-hour average, dissolved	43	ug/L	E & O				
	CA Ocean Plan - sq life	Aquatic Life Protection Objective, 6-month median	1	ug/L	G				
		Aquatic Life Protection Objective, daily maximum	4	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	10	ug/L	O				
Chromium (III)						2.87	19.17	1.14	5.95
	Chemical Constituents	California Primary MCL (total chromium)	50	ug/L	G & IS				
	Toxicity - humans	USEPA IRIS Reference Dose (c)	10,500	ug/L	G & IS				
	WTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, dissolved (f)	84	ug/L	IS				
		National Toxics Rule (USEPA), 1-hour average, dissolved (f)	260	ug/L	IS				
	CA Ocean Plan - humans	Human Health Protection Objective, fish consumption	190,000	ug/L	O				
	Toxicity - sw aquatic life	USEPA National Recomm. WQ Criteria, acute tox info / 10	1,030	ug/L	E & O				
Copper						3.39	22.29	3.24	11
	Chemical Constituents	California Primary MCL	1,300	ug/L	G & IS				
		California Secondary MCL	1,000	ug/L	G & IS				
		Water Quality for Agriculture (Ayens & Westcot)	200	ug/L	G & IS				
	Tastes and Odors	California Secondary MCL & USEPA Nat. Rec. WQ Criteria	1,000	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	300	ug/L	G				
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	1300	ug/L	IS				
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (f)	4.1	ug/L	IS		x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved (f)	6.7	ug/L	IS		x		x
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	3.1	ug/L	E	x	x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved	4.8	ug/L	E		x		x
	CA Ocean Plan - sq life	Aquatic Life Protection Objective, 6-month median	3	ug/L	G	x	x	x	x
		Aquatic Life Protection Objective, daily maximum	12	ug/L	O		x		
		Aquatic Life Protection Objective, instantaneous maximum	30	ug/L	O				
Iron						801	10982	260	3580
	Chemical Constituents	California Secondary MCL	300	ug/L	G & IS	x	x		x
		Water Quality for Agriculture (Ayens & Westcot)	5,000	ug/L	G & IS		x		
	Tastes and Odors	California Secondary MCL	300	ug/L	G & IS	x	x		x
	Toxicity - fw aquatic life	USEPA National Recomm. WQ Criteria, 4-day average	1,000	ug/L	IS		x		x



Table 6. Continued

Constituent / Parameter	Water Quality Objective or Promulgated Criterion	Numeric Thresholds Recommended to Implement Objective or Criterion			G=Groundwater IS=Inland SW E=Estuary O=Ocean	Sacramento River at Hamilton City		Colusa Basin Drain	
		Source of Numeric Threshold (footnotes in parentheses are at bottom of table)	Numeric Threshold ug/L	Units		Dissolved	Total	Dissolved	Total
<b>Lead</b>						<b>0.228</b>	<b>3.82</b>	<b>0.106</b>	<b>1.68</b>
	Chemical Constituents	California Primary MCL	15	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	5,000	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	0.2	ug/L	G & IS	x	x		x
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (?)	0.92	ug/L	IS	x	x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved (I)	26	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8.1	ug/L	E				
		California Toxics Rule (USEPA), 1-hour average, dissolved	210	ug/L	E				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	2	ug/L	G		x		
		Aquatic Life Protection Objective, daily maximum	8	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	20	ug/L	O				
<b>Manganese</b>						<b>8.97</b>	<b>299</b>	<b>14.9</b>	<b>208</b>
	Chemical Constituents	California Secondary MCL	50	ug/L	G & IS		x		x
		Water Quality for Agriculture (Ayers & Westcott)	250	ug/L	G & IS		x		x
	Tastes and Odors	California Secondary MCL	50	ug/L	G & IS		x		x
	Toxicity - humans	California DPH Notification Level for drinking water	500	ug/L	G & IS				
		USEPA National Recomen. WQ Criteria, fish consumption	100	ug/L	IS & E & O		x		x
<b>Nickel</b>						<b>2.94</b>	<b>13.88</b>	<b>3.33</b>	<b>11.2</b>
	Chemical Constituents	California Primary MCL	100	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	250	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	12	ug/L	G		x		
		USEPA National Recomen. WQ Criteria, fish consumption	4,600	ug/L	IS & E & O				
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	650	ug/L	IS				
		California Toxics Rule (USEPA) for other waters	4,600	ug/L	IS & E				
	CTR - fw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved (E)	58	ug/L	IS				
		California Toxics Rule (USEPA), 1-hour average, dissolved (I)	220	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	8	ug/L	E		x		x
		California Toxics Rule (USEPA), 1-hour average, dissolved	74	ug/L	E				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	5	ug/L	O		x		x
		Aquatic Life Protection Objective, daily maximum	20	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	50	ug/L	O				
<b>Selenium</b>						<b>0.438</b>	<b>0.47</b>	<b>0.516</b>	<b>0.627</b>
	Chemical Constituents	California Primary MCL	50	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	20	ug/L	G & IS				
	Toxicity - humans	California Public Health Goal for Drinking Water	30	ug/L	G & IS				
		USEPA National Recomen. WQ Criteria, water & fish consump.	170	ug/L	IS				
		USEPA National Recomen. WQ Criteria, fish consumption	4,200	ug/L	E & O				
	NTR - fw aquatic life	National Toxics Rule (USEPA), 4-day average, total	5	ug/L	IS				
		National Toxics Rule (USEPA), 1-hour average, total	20	ug/L	IS				
	CTR - sw aquatic life	California Toxics Rule (USEPA), 4-day average, dissolved	71	ug/L	E				
		California Toxics Rule (USEPA), 1-hour average, dissolved	290	ug/L	E				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective, 6-month median	15	ug/L	O				
		Aquatic Life Protection Objective, daily maximum	60	ug/L	O				
		Aquatic Life Protection Objective, instantaneous maximum	150	ug/L	O				
<b>Zinc</b>						<b>3</b>	<b>43.9</b>	<b>1.56</b>	<b>19.1</b>
	Chemical Constituents	California Secondary MCL	5,000	ug/L	G & IS				
		Water Quality for Agriculture (Ayers & Westcott)	2,000	ug/L	G & IS				
	Tastes and Odors	California Secondary MCL	5,000	ug/L	G & IS				
	Toxicity - humans	USEPA IRIS Reference Dose (RfD)	2,100	ug/L	G & IS				
		USEPA National Recomen. WQ Criteria, water & fish consump.	7,400	ug/L	IS				
		USEPA National Recomen. WQ Criteria, fish consumption	26,000	ug/L	E & O				
	CTR - fw aquatic life	California Toxics Rule (USEPA), 1-hour average, dissolved (I)	54	ug/L	IS				
		California Toxics Rule (USEPA), 4-day average, dissolved (?)	54	ug/L	IS				
	Toxicity - sw aquatic life	USEPA National Recomen. WQ Criteria, 4-day avg, dissolved	61	ug/L	E & O				
		USEPA National Recomen. WQ Criteria, 1-hour avg, dissolved	90	ug/L	E & O				
	CA Ocean Plan - aq life	Aquatic Life Protection Objective for Lead, 6-month median	20	ug/L	O		x		
		Aquatic Life Protection Objective for Lead, daily maximum	80	ug/L	O				
		Aquatic Life Protection Objective for Lead, instantaneous max	200	ug/L	O				

A “Reservoir Management Plan” is identified on page 6-47. The RMP Page 2D-37) states that “past studies of metal concentrations in the Sacramento River have not focused on high flows that will be the source water for Sites Reservoir. Metal concentrations at the diversion(s) will be measured within 24 hours of the start of diversions at RBPP and every 2 weeks during continuous diversions.” “After 2 years of measuring metal concentrations in the diversions, the frequency of measurements will decrease to monthly.” Rather than focusing on a strict protocol or set schedule of monitoring at 2-week intervals, monitoring should target a range of flow conditions to better understand the relationship between flow and metals concentrations. Event based monitoring may require data collection biweekly, weekly, or even on a daily basis as flow conditions vary. Additional consideration for monitoring would include analyzing differences in water quality based on whether flows are primarily composed of water from Shasta Lake or tributary inflows dominate the flow in the Sacramento River at the diversion points, and dry, normal, and wet year effects on water quality. Two years of data collection likely will not be sufficient to provide the required information.

The description of the SWRCB’s Antidegradation Policy on page 6-47 is misleading in stating that the policy allows for some degradation in consideration for increased beneficial uses, the supposed beneficial use being increased water supply from the proposed reservoir. The Antidegradation Policy prohibits discharges that would degrade water quality even though the degradation would not exceed water quality objectives because no capacity would exist for degradation that will be caused by the next downstream or downgradient uses – the ability to beneficially use the water would have been impaired, even though water quality objectives would not yet have been exceeded (SWRCB 2011). The contribution of additional metal loads from releases from the proposed Sites Reservoir during the summer would cause concentrations of metals in the Sacramento River (through direct releases or releases through the CBD or GCID) to exceed criteria and standards or at least be subject to the Antidegradation Policy due to an incremental increase in metals in the Sacramento River from the proposed project. Thus, the proposed project may face prohibition of releases if stored water does not meet water quality criteria or standards or if releases can cause criteria or standards to be exceeded by downstream inputs (i.e., Antidegradation Policy).

On page 6-54, page 6-57, and elsewhere, statements concerning expected mercury levels in fish, nutrients, and dissolved organic carbon in the reservoir explain that “this would be an effect on the Project itself occurring within the Sites Reservoir, rather than an effect from the Project on the surrounding environment.” This seems to imply that the project would not be responsible for these issues in the reservoir since it is the location where the reservoir is placed that is responsible. It is the construction of the reservoir that creates the problem. The creation of the reservoir creates a problem for the surrounding environment (i.e., birds that will prey on fish contaminated with high levels of mercury in the reservoir).

The discussion on page 6-57 also explains that “any increases in reservoir nutrient concentrations may benefit fish.” However, management of the mercury problem in the reservoir includes not introducing fish into the reservoir for at least 10 years (Mitigation Measure WQ-1.1). So, there are not any fish that would benefit from the increased nutrient concentrations in the reservoir. Even if there were fish in the reservoir, increased nutrient concentrations would lead to increased HABs (an impact) and anoxia in the hypolimnion as the organic materials (HABs) produced in

the epilimnion sink and decompose in the hypolimnion, eliminating the hypolimnion as habitat for fish (another impact). As well, the anoxic hypolimnion will result in the dissolution of metals from the sediments back into the water column, yet another adverse impact from the increases in reservoir nutrient concentrations.

This section on page 6-54 of the report also acknowledges that long-term methylmercury concentrations in fish in the proposed reservoir can reasonably be expected to be about 0.85 mg/kg ww, which greatly exceeds the 0.2 mg/kg ww of the California sport fish objective.

Because Harmful Algal Blooms (HABs) are expected to be relatively high in surface water of the reservoir (page 6-55), “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 downstream.” This is proposed as a strategy on page 6-57 to avoid effects from initial filling of Sites Reservoir on downstream conditions. However, a statement on page 6-16 indicates that water would be released from the surface rather than lower in the water column to avoid releasing water with high concentrations of mercury: “Due to this stratification, reservoir releases from the warmer, upper layer of water (i.e., the epilimnion) during the summer are less likely to have elevated methylmercury concentrations compared to releases from the deeper hypolimnion.” Water quality is affected whether water is released from the surface (HABs) or bottom (mercury). Neither release scenario, then, is effective at mitigating impacts; releases from the bottom to avoid HABs results in high levels of mercury being released, while releases from the surface to avoid mercury results in high levels of HABs being released. One mitigation strategy conflicts with the other. Withdrawing water between the epilimnion and hypolimnion (i.e., the metalimnion) may avoid releasing water with high HABs (epilimnion) or mercury (hypolimnion), but this narrow band of water would quickly be depleted, leaving no option but to release water with either high concentrations of HABs or mercury.

One of the methylmercury management strategies is to not stock Sites Reservoir with fish for the first 10 years following its initial filling (page 6-59). How will the project prevent someone from taking it upon themselves to stock fish of their choosing, as has happened at many other reservoirs (e.g., Northern pike in the Upper Feather River reservoirs). What will the project do to prevent someone from stocking fish and to mitigate this stocking when it does occur?

Another methylmercury management strategy is to introduce an oxidant, such as nitrate, to the reservoir bottom waters (near the sediment-water interface) to reduce anoxia (page 6-59). “If this method is employed, reservoir releases will be made from a higher tier (i.e., higher elevation) in the I/O tower to avoid discharging bottom waters.” Introduction of nitrates will serve as a nutrient source to stimulate increased algal ((HABs) growth following reservoir turnover. Releases from above the hypolimnion will be affected by HABs.

From page 6-70: “Thermal stratification in the summer would likely result in a reduction of oxygen toward the bottom of the reservoir in the hypolimnion. However, reservoir fish would likely not be affected by this reduction because they would not be in the hypolimnion.” According to this DEIR, some of the fish species that would be introduced into the reservoir

(after 10 years) include cold-water species. These fish require the cold water of the hypolimnion for survival. Reduction of oxygen in the hypolimnion will adversely affect these species.

The DEIR on page 6-81 states that “concentrations of metals released from Sites Reservoir could be higher than their concentrations in the Sacramento River at the point of discharge, potentially degrading river water quality.” “The release of Sites Reservoir water to the CBD under Alternatives 1, 2, and 3 would likely reduce metals concentrations in the CBD because metal concentrations in the CBD are generally higher than metals concentrations in the Sacramento River regardless of time of year.” As discussed earlier, release of water to the CBD from Sites reservoir results in elevated concentrations of most metals in the CBD. However, even if release of water from Sites Reservoir to the CBD did not cause metal concentrations in the CBD to be increased, the total volume of poor quality metal laden water being released to the Sacramento River at the CBD outfall is increased with the introduction of water from Sites Reservoir, thereby causing greater adverse impacts on water quality in the Sacramento River than if just CBD water was released. The additional metals load in CBD due to the addition of water from Sites Reservoir may, when combined with other downstream discharges, result in the need for additional water treatment by downstream users, particularly municipal or industrial users.

The DEIR states on page 6-81 that “high concentrations of total metals in the Sacramento River water diverted to storage may be reduced substantially by settling of suspended sediment. This would cause concentrations to drop and approach the dissolved, filtered measurements.” The DEIR does not take in account the dissolution of metals from the settled sediments under the anoxic conditions expected in the reservoir. Dissolution of metals from the settled sediments will add to those already present in the dissolved form. In addition, the DEIR states that evapoconcentration could increase metals concentrations in the reservoir by up to 48 percent.

The DEIR on page 6-82 states that “to demonstrate a range of results for the Sacramento River, these graphs show two types of results for concentrations in the Sacramento River downstream of the Sites discharge: Concentrations assuming median river concentrations mixed with Sites Reservoir concentrations that assume no settling of suspended sediment. This represents typical river concentrations mixed with Sites concentrations that are probably unrealistically high.” Sites Reservoir will not be diverting “median” river concentrations, but rather the higher concentrations occurring with higher flows in the January through March period. Throughout this DEIR, comments are made that analyses are “conservative,” meaning that the DEIR considers worst case scenarios in the analyses. The analyses are not “conservative” at all, but are an underestimation of the concentration of metals that will occur in the reservoir since the available data does not identify the higher concentration of metals that will occur with higher flows.

The DEIR on page 6-82 states that “the total aluminum, total copper, and total iron concentrations in Sites Reservoir are likely to frequently exceed aquatic life protection standards if settling did not reduce these concentrations.” As noted previously, settling of sediments is not a permanent sink for metals in the reservoir. Dissolution of metals under anoxic conditions will allow metals from the sediments to re-enter the water column, which may then lead to even more exceedances of water quality standards for aquatic life protection.

In discussing effects on aquatic communities in the reservoir due to metals, the DEIR on page 6-82 states “these effects would occur on an aquatic community in a reservoir that is not present under existing conditions so there would be no substantial degradation of water quality relative to existing conditions.” Strange statement. There is no degradation under existing conditions without the reservoir, but there are certainly impacts on the aquatic community when the reservoir is constructed. The SWRCB sets water quality standards and objectives that includes reservoirs.

The DEIR on page 6-83 states “acute synergistic metal effects in the river would be greater than what might occur in Sites Reservoir because metal concentrations in the Sacramento River during high flow events are much higher than concentrations expected in Sites Reservoir.” Diversions to Sites Reservoir would occur during high flow events, so metals concentrations in Sites Reservoir would be similar to those in the Sacramento River during these events. The DEIR goes on to state “as described above, once suspended sediment settles in Sites Reservoir, most metals are expected to occur at levels below water quality standards for aquatic life protection, which would limit the likelihood of synergistic effects.” The DEIR considered only four metals, but nonetheless found that “with these assumptions for partial settling, concentrations for total aluminum may be close to the 620 µg/L water quality standard for aquatic life protection, hovering between about 500 µg/L and 750 µg/L” and “total copper concentrations may occasionally exceed water quality standards for aquatic life protection” (page 6-82). This conclusion conflicts with the earlier and does not support the conclusion that most metals are expected to occur at levels below water quality standards for aquatic life protection.

Graphs are presented on pages 6-84 and 6-85 that depict estimated concentrations of various metals going back as far as the year 1920 to the year 2000. There are no metals data for nearly all the years depicted in the graphs, so how were the estimates determined?

The DEIR on page 6-86 states that “arsenic levels measured in the Sacramento River are below regulatory standards.” Arsenic levels in the Sacramento River near Red Bluff as well as at Hamilton City exceed several goals and objectives, including the California Public Health Goal for Drinking Water, USEPA National Recommended WQ Criteria for water and fish consumption, and USEPA National Recommended WQ Criteria for fish consumption. Though not regulatory, these goals are criteria to which arsenic concentrations should be compared to evaluate impacts.

The DEIR states on page 6-88 that “in drought years, releases from the reservoir’s normal operating dead pool would be made through the low-level intake” and on page 6-89 that “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 downstream. This hypolimnial release would result in water with high concentrations of methylmercury being released downstream.

In determining CEQA significance on page 6-92, the DEIR reiterates that “releasing water from lower in the reservoir if cyanobacteria and cyanotoxins are confirmed near the I/O tower at a level at or exceeding the “Caution” action trigger level, would further reduce any potential for

adverse water quality effects,” which ignores the conflicting issue of high methylmercury concentrations in the lower water. The DEIR on page 6-93 also states that “in the Sacramento River, discharges to the river from Sites Reservoir would occur after reductions in total metal concentrations due to settling of suspended sediment. These discharges would not cause substantial increases in concentration or exceedances or exacerbation of exceedances of water quality standards for metals in the Sacramento River.” This ignores the importance of redistribution of metals from the reservoir sediments due to dissolution. Any increases in concentrations or exceedances of water quality standards for metals is a concern for downstream water users, even if not “substantial.”

Mitigation for impacts to Stone Corral Creek include “release occasional pulses of high flow. Flow pulses could flush away low-quality sediment and water from the bottom of the reservoir adjacent to Sites Dam.” This would flush contaminant laden sediments downstream, resulting in downstream impacts including smothering of aquatic habitat with toxics laden sediments. Adding “a vertical extension in the reservoir at the withdrawal point. This extension would pull water from higher in the reservoir, where metal concentrations are expected to be lower” and “pump water from the top of Sites Reservoir for release into Stone Corral Creek.” But HABs are higher in this water that would be supplied from the upper water column of the reservoir – trading one impact for another.

Another mitigation for Stone Corral Creek (page 6-95) is to “pump water from the top of Sites Reservoir for release into Stone Corral Creek. Based on the demonstration of the effect of partial settling of suspended sediment on total metal concentrations in Sites Reservoir and the conservative nature of this assessment, metal concentrations in Sites Reservoir are expected to meet water quality standards for the protection of aquatic life during the drier parts of the year in water located above the deepest portions of the reservoir.” This conflicts with earlier statements in this DEIR (page 6-82) that states “based on the calculations that demonstrate the effect of partial settling of suspended sediments, settling of suspended sediment may have a substantial effect on total metal concentrations. With these assumptions for partial settling, concentrations for total aluminum may be close to the 620 µg/L water quality standard for aquatic life protection, hovering between about 500 µg/L and 750 µg/L (Figure 6-9). Total copper concentrations may occasionally exceed water quality standards for aquatic life protection.” Even higher concentrations could be expected had the effects of dissolution of metals from the sediments been considered in the analysis.

The DEIR on page 6-100 states that “the net effect of the Project would be to enhance beneficial uses of water, and water quality could improve in parts of the study area. For example, during some months the increases in Delta outflow could reduce seawater intrusion and under certain circumstances Alternatives 1, 2, and 3 could allow for seasonal storage changes in Shasta Lake that could help to preserve cold-water supply for fish through exchanges with Sites Project water.” Increased releases from Sites Reservoir to preserve water in Lake Shasta will result in a greater percentage of water in the Sacramento River being composed of Sites Reservoir water, which results in less dilution from Shasta releases, and greater metals concentrations in the Sacramento River.

This section goes on to say “the development of Sites Reservoir for Alternative 1, 2, or 3 would create in-reservoir habitat and thus net benefits for Reservoir cold-water and warm-water fish species.” Cold water fish species would be impacted by the anoxic conditions expected to occur in the hypolimnetic environment required by such fish. In addition, high methylmercury concentrations in the reservoir will impact all fish species. Mitigation for mercury includes not stocking fish for at least 10 years, so there would be no net benefits to cold-water and warm-water fish species for at least 10 years.

This section also states that “operations would increase water supply reliability for refuges, municipalities, and agriculture, particularly in Dry and Critically Dry Water Years.” Though reliability may increase, the quality of water provided by Sites Reservoir may not be suitable for wildlife habitat in refuges and may require additional treatment by municipalities, particularly in dry and critically dry years when less dilution water would be available from existing water projects.

The Sacramento River from Red Bluff to Knights Landing is on the Clean Water Act Section 303(d) Impaired Water Bodies list for PCBs, but there is no discussion in this DEIR about PCBs.

#### Chapter 5. Surface Water Resources

The DEIR on page 5-28 states that “in-lieu exchanges between Sites Reservoir releases and flow in the Sacramento River would occur when Sites Reservoir releases were used to meet local Storage Partner demands (Sacramento River Settlement Contractors, Reclamation, or, most likely, GCID) that normally would be met through diversions from the Sacramento River.” There would be no dilution of water from Sites Reservoir with water from the Sacramento River under such exchanges, and therefore water with higher levels of metals would be supplied to local Storage Partners, particularly GCID, with associated adverse effects. There is no discussion about the adverse effects of such exchanges from metals or other water quality parameters (HABs, cyanotoxins, etc.) to the local water users, including use on wildlife refuges.

The SWRCB is engaged in activities to address the precipitous declines of native aquatic species and the ecosystem they depend upon. These activities include updating the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary to protect the Bay-Delta watershed and its many beneficial uses. The SWRCB is focusing on the Sacramento River and its tributaries, Delta tributaries, Delta outflows, and interior Delta flows. As with the Lower San Joaquin River and Southern Delta update, the SWRCB is concerned about adequate flows in the Sacramento River system to protect instream fish and wildlife, and is proposing Delta inflows of up to 65% of unimpaired flow in the Sacramento River. These updates to the Bay-Delta Plan will reduce the amount of water available for diversion to the proposed Sites Reservoir. There is no discussion about how the reduced flows available for diversion from the Sacramento River due to updates to the Bay-Delta Plan will affect the viability of the proposed Sites Reservoir project.

## Chapter 10. Wildlife Resources

In discussing Impact WILD-1k: Golden Eagle and Bald Eagle, the DEIR states on page 10-96 that “the completed reservoir would provide new bald eagle foraging habitat (fish in the reservoir) and result in new nesting sites or wintering habitat because of the proximity to new foraging habitat. These would be beneficial effects.” There would be no fish in the reservoir for at least 10 years (Mitigation Measure WQ-1.1), so there would be no new bald eagle foraging habitat and no new nesting sites or wintering habitat because of the proximity to new foraging habitat, therefore no beneficial effects. After 10 (or more) years, any fish stocked into the reservoir would develop a mercury burden which would impact fish eating birds, such as the bald eagle.

*CEQA Significance Determination and Mitigation Measures* finds that implementation of Alternative 1 or 3 would have the beneficial effects of providing new bald eagle foraging habitat (Sites Reservoir) and new nesting sites or wintering habitat because of the proximity to the new foraging habitat. As explained above, there is no new foraging habitat or nesting or wintering habitat because there will be no fish in the reservoir for at least 10 years. This is also true for the *NEPA Conclusion* on page 10-99. There is no discussion of any mitigation measures to prevent bald eagles, or other fish eating birds, from ingesting fish contaminated with mercury, or how their populations will be mitigated due to the adverse effects from ingestion of mercury laden fish.

In discussing impacts to various species of bats, the DEIR states that “the completed reservoir would provide a new drinking water source and foraging habitat (insects associated with the reservoir) for bats. This would be a beneficial effect of the Project.” The DEIR does not address the impacts to bats from ingesting water laden with cyanotoxins from HABs in the reservoir, nor the effects of mercury in the insects that the bats would be eating.

DWR 2007. Mercury Contamination in Fish from Northern California Lakes and Reservoirs.  
July 2007



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**From:** King, Vanessa M [vking@usbr.gov]  
**Sent:** 1/5/2022 2:43:46 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Fw: [EXTERNAL] Comments on Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement  
**Attachments:** Sites DEIR 2.docx

I believe this is a duplicate of the comment sent to the Authority.

Vanessa King  
Hydrologist and Interim Project Manager for Sites Reservoir Project  
Bureau of Reclamation, Interior Region 10 · California-Great Basin, Division of Planning  
Office: 916-978-5077

---

**From:** Jerry Boles <chicojerry@yahoo.com>  
**Sent:** Wednesday, January 5, 2022 2:37 PM  
**To:** King, Vanessa M <vking@usbr.gov>  
**Subject:** [EXTERNAL] Comments on Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Dear Ms. King:  
Attached are my comments on the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.  
If you have any questions, you may contact me by email at [chicojerry@yahoo.com](mailto:chicojerry@yahoo.com).

Jerry Boles

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/5/2022 2:44:49 PM  
**To:** Jerry Boles [chicojerry@yahoo.com]  
**Subject:** RE: Comments on Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

Jerry – Thanks so much for your comments. We really appreciate them.

I hope you and your family are doing well and had a great holiday season!

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 | [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Jerry Boles <chicojerry@yahoo.com>  
**Sent:** Wednesday, January 5, 2022 2:39 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** Comments on Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

Hi Ali-

Attached are my comments on the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.

If you have any questions, you may contact me by email at [chicojerry@yahoo.com](mailto:chicojerry@yahoo.com).

Jerry Boles

---

**From:** Heydinger, Erin [Erin.Heydinger@hdrinc.com]  
**Sent:** 1/5/2022 3:11:06 PM  
**To:** Huber, Anne [Anne.Huber@icf.com]; steve.micko@jacobs.com  
**CC:** Spranza, John [john.spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** Sites Deadpool Considerations

Hi Steve and Ann,

We would like to set up an hour to discuss the deadpool in Sites and begin to get an understanding of whether we might be able to decrease the size of the deadpool while balancing water quality considerations. Do you have some time to meet for an hour over the next week? Here are some times that might work for us:

- Monday 1/10 3-4pm
- Wednesday 1/12 10:30-11:30 am
- Thursday 1/13 11:30-12:30 or 12-1
- Friday 1/14 2-3 pm

Also, please let me know if you think anybody else from your teams should be included in this discussion.

Thanks!

Erin

Erin Heydinger, PE, PMP  
*Project Manager - Water*

**HDR**  
2379 Gateway Oaks Dr, #200  
Sacramento, CA 95833  
D 916.679.8863 M 651.307.9758

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**From:** Huber, Anne [Anne.Huber@icf.com]  
**Sent:** 1/5/2022 3:28:42 PM  
**To:** steve.micko@jacobs.com; Heydinger, Erin [erin.heydinger@hdrinc.com]  
**CC:** Spranza, John [john.spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Williams, Nicole [Nicole.Williams@icf.com]  
**Subject:** RE: Sites Deadpool Considerations

The Thursday and Friday times work for me. Potentially also Monday.  
I think Lesa Erecius should attend if she happens to be available at the selected time.

Thanks,  
-Anne

---

**From:** Micko, Steve/SAC <Steve.Micko@jacobs.com>  
**Sent:** Wednesday, January 5, 2022 3:13 PM  
**To:** Heydinger, Erin <erin.heydinger@hdrinc.com>; Huber, Anne <Anne.Huber@icf.com>  
**Cc:** John Spranza <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** RE: Sites Deadpool Considerations

Hi Erin,

I'm available during all time slots.

Best,  
Steve

---

**From:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>  
**Sent:** Wednesday, January 5, 2022 3:11 PM  
**To:** Huber, Anne <Anne.Huber@icf.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>  
**Cc:** Spranza, John <john.spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** [EXTERNAL] Sites Deadpool Considerations

Hi Steve and Ann,

We would like to set up an hour to discuss the deadpool in Sites and begin to get an understanding of whether we might be able to decrease the size of the deadpool while balancing water quality considerations. Do you have some time to meet for an hour over the next week? Here are some times that might work for us:

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- Wednesday 1/12 10:30-11:30 am
- Thursday 1/13 11:30-12:30 or 12-1
- Friday 1/14 2-3 pm

Also, please let me know if you think anybody else from your teams should be included in this discussion.

Thanks!  
Erin

*Erin Heydinger, PE, PMP*  
*Project Manager - Water*

**HDR**

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Sacramento, CA 95833  
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**From:** Jerry Brown [jbrown@sitesproject.org]  
**Sent:** 1/6/2022 7:38:14 AM  
**To:** Vogel, Nancy@CNRA [Nancy.Vogel@resources.ca.gov]  
**CC:** Alicia Forsythe [aforsythe@sitesproject.org]; Marcia Kivett [MKivett@sitesproject.org]  
**Subject:** Requested Items for Sites  
**Attachments:** 2021215\_RDEIR-SDEIS\_Public Meeting\_Dec. 16 Presentation\_FINAL-updated.pptx; 20220103\_Key Points for State final.docx

Hi Nancy – Please find attached per your request the following items:

1. Key points from a State Perspective – there are many more, but we kept this list to what we think would be highest priority.
2. Graphics and maps to better understand the Project – this was the RDEIR/SDEIS public meeting presentation (attached). We can provide other graphics if needed.

You also requested our FAQs based on some of the comments and statements made in the RDEIR/SDEIS public meetings and other places. We should get this out to you tomorrow. We are in the process of reformatting.

Don't hesitate to let me know if there is anything else you need.

Jerry

**Key Points Important to the State Perspective  
Sites Reservoir Project**

January 6, 2022

**Sites Reservoir provides water and a dedicated storage space for the environment.** Sites is the largest of the Prop 1 storage assets and will create significant new water supply and operating flexibility committed solely for the benefit of the environment – this would be the first time that the State would have an asset of this magnitude, controlled by the State, dedicated to environmental uses. Sites puts the environment on an equal standing to the other Sites water users in having a deployable asset for environmental uses.

**Sites Reservoir is off stream and resilient to climate change making it a 21<sup>st</sup> century water asset.** Sites diverts water in high flow conditions for use in dryer times (see table below for total new water supply generated by water year type). It can help smooth out the huge variability that we are and expect to continue to see in our water supply – both within the year and from year to year – for California’s environment, agriculture, and cities. Performance of Sites Reservoir is anticipated to improve with climate change. The project will generate carbon-free energy, and the Authority has committed to net-zero carbon emissions from all project operations. The estimated water deliveries are as follows:

Water Year Type	Estimated Range of New Water Supply (thousand acre-feet)
Wet	80-90
Above Normal	92-292
Below Normal	190-296
Dry	398-429
Critically Dry	308-348
Long-Term Average	207-260

**Sites Reservoir has statewide and national significance.** The participants in Sites are diverse – from north and south of Delta, ag/urban, inland/coastal, and State and Federal governments – all finding a common interest in continuing to help our State adapt to climate change. The project is locally led and supported with local, state, and federal funding.

**Sites Reservoir enhances state and federal operations in the Delta and for managing temperatures in the upper Sacramento River for threatened salmon species.** Sites has the ability to extend cold water releases from Shasta Reservoir, Oroville and Folsom longer into the year, benefiting salmon and improving salmon survival for our ecosystems and the people of the State. Diversions will be controlled to protect salmon and limited to times when water is available in the river. Delta water quality in drier periods will be enhanced with water released from Sites for delivery to south of Delta participants.

---

**From:** Huber, Anne [Anne.Huber@icf.com]  
**Sent:** 1/6/2022 8:37:07 AM  
**To:** Spranza, John [john.spranza@hdrinc.com]; steve.micko@jacobs.com; Heydinger, Erin [erin.heydinger@hdrinc.com]; Erecius, Lesa [Lesa.Erecius@icf.com]  
**CC:** Alicia Forsythe [aforsythe@sitesproject.org]; Williams, Nicole [Nicole.Williams@icf.com]  
**Subject:** RE: Sites Deadpool Considerations

Hi John,  
I communicated with Lesa yesterday. All the time slots work for her.  
Thanks,  
-Anne

---

**From:** Spranza, John <John.Spranza@hdrinc.com>  
**Sent:** Thursday, January 6, 2022 8:33 AM  
**To:** Huber, Anne <Anne.Huber@icf.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Erecius, Lesa <Lesa.Erecius@icf.com>  
**Cc:** Alicia Forsythe <aforsythe@sitesproject.org>; Williams, Nicole <Nicole.Williams@icf.com>  
**Subject:** RE: Sites Deadpool Considerations

Including Lesa

John Spranza

D 916.679.8858 M 818.640.2467

---

**From:** Huber, Anne <Anne.Huber@icf.com>  
**Sent:** Wednesday, January 5, 2022 3:29 PM  
**To:** Micko, Steve/SAC <Steve.Micko@jacobs.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>  
**Cc:** Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Williams, Nicole <Nicole.Williams@icf.com>  
**Subject:** RE: Sites Deadpool Considerations

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The Thursday and Friday times work for me. Potentially also Monday.  
I think Lesa Erecius should attend if she happens to be available at the selected time.

Thanks,  
-Anne

---

**From:** Micko, Steve/SAC <Steve.Micko@jacobs.com>  
**Sent:** Wednesday, January 5, 2022 3:13 PM  
**To:** Heydinger, Erin <erin.heydinger@hdrinc.com>; Huber, Anne <Anne.Huber@icf.com>  
**Cc:** John Spranza <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** RE: Sites Deadpool Considerations

Hi Erin,

I'm available during all time slots.



Best,  
Steve

---

**From:** Heydinger, Erin <[Erin.Heydinger@hdrinc.com](mailto:Erin.Heydinger@hdrinc.com)>  
**Sent:** Wednesday, January 5, 2022 3:11 PM  
**To:** Huber, Anne <[Anne.Huber@icf.com](mailto:Anne.Huber@icf.com)>; Micko, Steve/SAC <[Steve.Micko@jacobs.com](mailto:Steve.Micko@jacobs.com)>  
**Cc:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** [EXTERNAL] Sites Deadpool Considerations

Hi Steve and Ann,

We would like to set up an hour to discuss the deadpool in Sites and begin to get an understanding of whether we might be able to decrease the size of the deadpool while balancing water quality considerations. Do you have some time to meet for an hour over the next week? Here are some times that might work for us:

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- Thursday 1/13 11:30-12:30 or 12-1
- Friday 1/14 2-3 pm

Also, please let me know if you think anybody else from your teams should be included in this discussion.

Thanks!  
Erin

**Erin Heydinger, PE, PMP**  
*Project Manager - Water*

**HDR**  
2379 Gateway Oaks Dr, #200  
Sacramento, CA 95833  
D 916.679.8863 M 851.307.9758

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**From:** Spranza, John [John.Spranza@hdrinc.com]  
**Sent:** 1/6/2022 9:23:17 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

We have been coordinating, she has the insurance issue covered and will pick the firm based on safety. Like me, there is some concern that the “soon” needs to be in the next week to make sure both firms have time to review the terms and get the admin taken care of.

John Spranza

D 916.679.8858 M 818.640.2487

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Thursday, January 6, 2022 9:16 AM  
**To:** Spranza, John <john.spranza@hdrinc.com>  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I looked through ICF’s contract and unfortunately, it doesn’t specify what is a subcontractor and what is a vendor.

In all of my google searches, I see the helicopter company as a vendor.

Can you check with Monique to see how challenging it will be to add the helicopter company as a subcontractor?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Spranza, John <John.Spranza@hdrinc.com>  
**Sent:** Thursday, January 6, 2022 8:14 AM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** FW: Sites - Eagle Surveys and Bids from Helicopter Surveys

I’m concerned we are going to miss our window waiting for the “soon to be released” document that will require additional management review and discussion from both ICF and the helo firm. Do you think there is any flexibility in Joe’s approach?

John Spranza

D 916.679.8858 M 818.640.2487

---

**From:** Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>  
**Sent:** Wednesday, January 5, 2022 7:09 PM  
**To:** Briard, Monique <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>  
**Cc:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Monique,

I had discussions with our contracts team today and below are initial comments.

- A helicopter firm is clearly not a vendor and especially not like a printing firm. They are categorized as a specialty subcontractor requiring approval from the Authority. The new standard Authority Consulting Agreement that will soon be released will more clearly address this item.
- Authority flow down contract provisions will be required for the firm per ICF's agreement with the Authority.
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**Sent:** Tuesday, January 4, 2022 7:08 PM  
**To:** Briard, Monique <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>  
**Cc:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

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Hi Joe,

Ali asked that I follow up with you directly on my clarification question below about vendors vs. subcontractors. We are planning to bring the helicopter company on as a vendor so I'd like to confirm with you the process that is required for us to do so.

Thanks,  
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**Monique Briard** | Sr. Managing Director, Environmental Planning | +1.916.231.9551 direct  
| [monique.briard@icf.com](mailto:monique.briard@icf.com) | [icf.com](http://icf.com)  
ICF | 980 9<sup>th</sup> Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.842.0894 mobile

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**From:** Briard, Monique  
**Sent:** Thursday, December 30, 2021 10:37 AM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** John Spranza <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>  
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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
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**From:** Briard, Monique [Monique.Briard@icf.com]  
**Sent:** 1/6/2022 9:50:19 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Thank you!

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Thursday, January 6, 2022 9:30 AM  
**To:** Briard, Monique <Monique.Briard@icf.com>  
**Subject:** FW: Sites - Eagle Surveys and Bids from Helicopter Surveys

FYI

---

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In doing a number of google searches on federal grant agreements, federal contracts, and just contracts in general, it seems like things all hone in on a vendor providing goods or services within normal business operations, operates in a competitive environment providing similar goods and services to a variety of customers, provides routine service, similar goods or services to many different purchasers, goods and services that are ancillary to the operation of the program, services are incidental to or facilitate performance (and are not in themselves a deliverable), etc.

I just feel like the helicopter company fits in this role of vendor. They aren’t making project decisions. They simply are providing transportation. They would be like hiring a driving service for the biologists to drive them around – just that this “car” flies in the air. We are telling them where to go, how high to fly, and what to do.

I am sure we can get the insurance covered as these helicopter services hold pretty hefty insurance by the nature of the work. It’s the lift of all of the flow down provisions in the contract for a something that really is a transportation service – and would be no different than hiring a driving service for these biologists.

I am available to chat at 4 PM today or tomorrow anytime after 2:30 PM.

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**Sent:** Wednesday, January 5, 2022 7:08:59 PM  
**To:** Briard, Monique <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>  
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ICF | 980 9<sup>th</sup> Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.842.0894 mobile

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**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
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**Sent:** 1/6/2022 11:42:24 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**CC:** Spranza, John [john.spranza@hdrinc.com]  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Thanks, not attempting to be troublesome but to protect the Authority. And, I'm not an expert but have discussed with our internal team.

Correct no definition of subcontractor in Agreements. I don't remember any definition of subs in the many federal and state contracts I've been involved with. We are looking to add language in the upcoming new Agreements to address this item. If helicopter services are deemed a vendor service then we would likely need to make further Agreement changes to ensure specialty vendors have appropriate insurance to protect the Authority.

Most of the subs do not make project decisions.

I would like Lori Jones to be in our meeting. Lori is leading our internal procurement and contracts audit and the development of the new standard Authority Agreements. She is a senior BC person who has been involved in many large contracts and currently working on a large SFPUC project.

I've also asked Hailey who recently supported the review of our required consultant insurance coverage limits to solicit input on this issue from her JPIA and Delta Conveyance insurance contacts.

During our team discussions on consultant insurance coverages, we identified 3 additional coverages that consultants have at times to use based on project specifics. They are aviation, marine and pollution insurances. I'll be talking to Jeriann about pollution insurance based on the geotech investigations. My understanding is the drillers usually carry pollution coverage. We will be further looking into insurance coverages the Authority may require later in the Project.

Thanks!

Joe

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Monique

**Monique Briard** | Sr. Managing Director, Environmental Planning | +1.916.231.9551 direct

| [monique.briard@icf.com](mailto:monique.briard@icf.com) | [icf.com](http://icf.com)

ICF | 980 9<sup>th</sup> Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.842.0894 mobile

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**From:** Briard, Monique

**Sent:** Thursday, December 30, 2021 10:37 AM

**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Cc:** John Spranza <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>

**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Thanks and agree that we have already done most of this.

Question. Our contract does require us to add subcontractors to our contract but there isn't any language about vendors. I believe we would hire the helicopter company as a vendor and not a subcontractor so I'm wondering if that makes a difference contractually. We didn't formally request ARC (printing company) to be added to our current contract E to print the EIR/S and the posters because we contracted with them as a vendor for services performed so now I'm hoping that I didn't miss a step for the work that they've already done and we've billed for.

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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 4:35 PM  
**To:** Briard, Monique <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>  
**Cc:** John Spranza <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>  
**Subject:** FW: Sites - Eagle Surveys and Bids from Helicopter Surveys

Monique – See below from Joe. I suspect this sounds like a lot at first blush, but I think you have already done most of this. We will need you to request that the vendor be added to your contract once you've made a selection. Let me know if you have questions or concerns.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 3:28 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
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Let me know if you have any questions or need clarification to the above.

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Do they need 2 bids? Monique asked, but I wasn't sure so wanted to check in with you.

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**From:** Joe Trapasso [jtrapasso@sitesproject.org]  
**Sent:** 1/6/2022 12:39:11 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; Marcia Kivett [MKivett@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Ali, Lorie said she can make 4:00 today so I asked Marcia to set up the meeting.

Marcia, please add John to the call.

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Thursday, January 6, 2022 12:29 PM  
**To:** Joe Trapasso <jtrapasso@sitesproject.org>; Marcia Kivett <MKivett@sitesproject.org>; Spranza, John <john.spranza@hdrinc.com>  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys  
**Importance:** High

Marcia – See below. Can you help schedule a call with me, John, Joe, Lori Jones, and Hailey on the above subject? We should have this ASAP as the surveys are planned to start January 24 so we need to resolve this quickly.

Ali

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I would like Lori Jones to be in our meeting. Lori is leading our internal procurement and contracts audit and the development of the new standard Authority Agreements. She is a senior BC person who has been involved in many large contracts and currently working on a large SFPUC project.

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Joe – Thanks for looking into this. Can we schedule a call on this? In looking through ICF's contract with the Authority, there is no definition of a subcontractor versus vendor. If I am missing this, please let me know.

In doing a number of google searches on federal grant agreements, federal contracts, and just contracts in general, it seems like things all hone in on a vendor providing goods or services within normal business operations, operates in a competitive environment providing similar goods and services to a variety of customers, provides routine service, similar goods or services to many different purchasers, goods and services that are ancillary to the operation of the program, services are incidental to or facilitate performance (and are not in themselves a deliverable), etc.

I just feel like the helicopter company fits in this role of vendor. They aren't making project decisions. They simply are providing transportation. They would be like hiring a driving service for the biologists to drive them around – just that this "car" flies in the air. We are telling them where to go, how high to fly, and what to do.

I am sure we can get the insurance covered as these helicopter services hold pretty hefty insurance by the nature of the work. It's the lift of all of the flow down provisions in the contract for a something that really is a transportation service – and would be no different than hiring a driving service for these biologists.

I am available to chat at 4 PM today or tomorrow anytime after 2:30 PM.

Ali

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**Sent:** Wednesday, January 5, 2022 7:08:59 PM  
**To:** Briard, Monique <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>  
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Monique,

I had discussions with our contracts team today and below are initial comments.

- A helicopter firm is clearly not a vendor and especially not like a printing firm. They are categorized as a specialty subcontractor requiring approval from the Authority. The new standard Authority Consulting Agreement that will soon be released will more clearly address this item.
- Authority flow down contract provisions will be required for the firm per ICF's agreement with the Authority.
- Insurance requirements for helicopter services will need to be addressed, especially to protect the Authority. What insurance coverage will ICF require the helicopter company to have? Assume insurance coverage would consider the scope of the surveys such as duration terrain, and risk factors. That needs to be addressed in the request to approve them as a sub. Our contracts team, including myself, do not have any experience with helicopter insurance so we will likely need do some research on this item.
- The team is busy right now but attempting to find time to develop a new sub approval form.

Thanks,

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Sorry, I forgot to say I will get back to you tomorrow with an answer if the helicopter services is considered a vendor or not.

Joe

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We don't have a form to complete for information needed for the Authority to approve a subconsultant per ICF's Agreement. The information needed will be relatively simple and highly likely you already have the information from your procurement process, such as company quals, staff that will be working on the project and their billing rates, what procurement process ICF used. Unsure how quickly you need the form but I will ask the staff to prepare one asap.

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Hi Joe,

Ali asked that I follow up with you directly on my clarification question below about vendors vs. subcontractors. We are planning to bring the helicopter company on as a vendor so I'd like to confirm with you the process that is required for us to do so.

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**Sent:** 1/6/2022 12:52:05 PM  
**To:** Joe Trapasso [jtrapasso@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Just a point of reference, when I was working for PG&E at Cardno we used heli firms for ingress and egress in mountainous areas. We did have them as a vendor and not a sub.

John Spranza

D 916.679.8858 M 818.640.2487

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**Monique Briard** | Sr. Managing Director, Environmental Planning | +1.916.231.9551 direct  
| [monique.briard@icf.com](mailto:monique.briard@icf.com) | [icf.com](http://icf.com)  
ICF | 980 9<sup>th</sup> Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.842.0894 mobile



---

**From:** Briard, Monique  
**Sent:** Thursday, December 30, 2021 10:37 AM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** John Spranza <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Thanks and agree that we have already done most of this.

Question. Our contract does require us to add subcontractors to our contract but there isn't any language about vendors. I believe we would hire the helicopter company as a vendor and not a subcontractor so I'm wondering if that makes a difference contractually. We didn't formally request ARC (printing company) to be added to our current contract E to print the EIR/S and the posters because we contracted with them as a vendor for services performed so now I'm hoping that I didn't miss a step for the work that they've already done and we've billed for.

Monique

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 4:35 PM  
**To:** Briard, Monique <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>  
**Cc:** John Spranza <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>  
**Subject:** FW: Sites - Eagle Surveys and Bids from Helicopter Surveys

Monique – See below from Joe. I suspect this sounds like a lot at first blush, but I think you have already done most of this. We will need you to request that the vendor be added to your contract once you've made a selection. Let me know if you have questions or concerns.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 3:28 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Subject:** RE: Sites - Eagle Surveys and Bids from Helicopter Surveys

Good question with quick response!

Short answer is I'm good with them issuing RFPs to two consultants and going with the only submission. Preference is getting more than one submittal but I suspect there are not many vendors that provide this service. That said, ICF needs to ensure the competitive process was truly open (i.e., no bias in the RFP to one firm over the other). In addition, the submitted response is fully responsive to the RFP, especially to the scope, and the cost estimate is reasonable. Also, request that they keep the procurement materials in case an auditor may want to review how the sub was selected. Also remind Monique that the Authority needs to formally approval all new subs via the ICF contract with the

Authority. We currently don't have a form to complete for adding new subs but I could quickly have one prepared likely next week. Quick thoughts; the consultant approval request will need to address, how the consultant was selected, resume for the sub, is the sub's budget within ICF's approved A3 TO, listing of expenses including billable staff with their estimated rates and hours, etc.

As background to procurements, attached is the approved Procurement and Contract Policy that was developed to be consistent with requirements in the Authority's state and federal contracts. The Authority needs to follow the Policy and soon the Procurement Approval Procedure which is currently in a draft form (attached). In the revised Agreements we will be issuing to the consultants likely in February, it will be clear that they need to abide by our State and federal contract requirements and the Authority's policies and procedures. We will be providing the consultants these material with the revised Agreements.

Let me know if you have any questions or need clarification to the above.

Joe

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 2:35 PM  
**To:** Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>  
**Cc:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Subject:** Sites - Eagle Surveys and Bids from Helicopter Surveys

Hi Joe – We are working on getting ready for eagle surveys in January. These will be done via helicopter.

ICF has reached out to two flights firms for bids. One has responded with a bid. The second has not.

Do they need 2 bids? Monique asked, but I wasn't sure so wanted to check in with you.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** dkp1387@socal.rr.com [dkp1387@socal.rr.com]  
**Sent:** 1/6/2022 2:44:47 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Specific limits for salmon need to be specified.

Your document states that 10,700 cfs is the minimum flow required to support salmon.

Your document also states that 5,900 cfs would be taken for Sites.

Your document needs to state that water would not be taken if the flow is less than 16,600 cfs at the specified location.

Salmon reproduction rates need to be improving every year. The document needs to declare that water will not be taken for at least a year if salmon populations are not increasing.

Deborah Paul



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NOV 18 2021

SITES PROJECT AUTHORITY

Tehama County  
RECEIVED

NOV 10 2021

BY: 

**Sites Project Authority**

**Notice of Availability of the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS)**

**Location:** Colusa, Glenn, Tehama, and Yolo Counties, California

**Purpose of the Notice:** The Sites Project Authority and the U.S. Bureau of Reclamation (Reclamation) are circulating for public review and comment a joint Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS). In August 2017, the Authority and Reclamation jointly issued a Draft Environmental Impact Report/Environmental Impact Statement (2017 Draft EIR/EIS) for the Project. The RDEIR/SDEIS includes a complete revision of the 2017 Draft EIR/EIS to reflect changes to the Project. The RDEIR/SDEIS has been prepared in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and is being recirculated for public review and comment in accordance with Section 15088.5 of the State CEQA Guidelines.

The Project's purpose is to provide direct and real benefits to instream flows, the Sacramento-San Joaquin Delta ecosystem, and water supply reliability. Water that would be stored and released from Sites Reservoir would be used for local, State, and federal water use needs. These include municipal, industrial, and agricultural uses as well as to provide benefits to anadromous fish species in the Sacramento River watershed, wildlife refuges and habitats, and to help supply food for delta smelt in the Yolo Bypass.

**Lead Agency:** The Sites Project Authority is the lead agency under CEQA; the Bureau of Reclamation is the lead agency under NEPA.

**Description of the Project:** The Project consists of the construction and operation of an offstream surface water reservoir. The Project would use existing infrastructure to divert unappropriated flow from the Sacramento River at Red Bluff and Hamilton City and convey the water to a new offstream reservoir west of the community of Maxwell, California. New and existing facilities would move water into and out of the reservoir, with ultimate release back to the Sacramento River system via existing canals and a new pipeline located near Dunnigan, California. The Project would require modifications to the Glenn-Colusa Irrigation District system and the Tehama-Colusa Canal to move water into and out of the reservoir. Water conveyance between Sites Reservoir and the canals and Dunnigan pipeline would be facilitated by an existing and one new regulating reservoir and two new associated pumping/generating plants. New electrical substations would connect the pumping/generating facilities and their associated electrical switchyards to an existing overhead power line. Three new recreation areas would also be constructed around the new Sites Reservoir. New roads would be constructed to provide access to Project facilities and recreation areas, and some existing roads would be relocated or improved. Construction of Sites Reservoir would necessitate construction of a bridge or bypass road to connect Maxwell with the community of Lodoga. The RDEIR/SDEIS evaluates four alternatives, including the No Project/No Action Alternative.

**Significant Environmental Effects:** Based on analysis in the RDEIR/SDEIS, all action alternatives would result in significant and unavoidable impacts/adverse or substantially adverse effects on the following resource categories: surface water quality, vegetation and wetland resources, wildlife resources, geology and soils, agricultural and forestry resources, air quality, cultural resources, tribal cultural resources (CEQA only), visual resources, environmental justice and socioeconomics (NEPA only). The Project is not located on or near a property included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.



P.O. Box 517  
Maxwell, CA 95955  
530.438.2309

**Availability of the RDEIR/SDEIS:** Copies are available for public review at the following locations:

1. Sites Project Authority, 122 Old Highway 99 West, Maxwell, CA 95955
2. Bureau of Reclamation, California-Great Basin Regional Office Library, 2800 Cottage Way, Sacramento, CA 95825
3. Maxwell Branch Library, 34 Oak Street Maxwell, CA 95955
4. Sacramento Public Library, Central Branch, 828 I Street, Sacramento, CA 95814
5. Colusa County Free Library, Main Branch, 738 Market Street, Colusa, CA 95932
6. Glenn County Public Library, Willows Branch, 201 N. Lassen Street, Willows, CA 95988
7. Tehama County Library, Red Bluff Branch, 645 Madison Street, Red Bluff, CA 96080
8. Yolo Branch Library, 37750 Sacramento Street, Yolo, CA 95697
9. Mary L. Stephens – Davis Branch Library, 315 E. 14<sup>th</sup> Street, Davis, CA 95616

The RDEIR/SDEIS is also accessible from the following websites:

<https://sitesproject.org/environmental-review>

[https://www.usbr.gov/mp/nepa/nepa\\_project\\_details.php?Project\\_ID=29024](https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=29024)

Please contact the Authority at 530-438-2309 if you need additional assistance in reviewing the RDEIR/SDEIS.

**Public Review Period:** The RDEIR/SDEIS will be available for a 60-day public review from November 12, 2021 to January 11, 2022. Please submit written comments on the RDEIR/SDEIS by 5p.m. PST January 11, 2022 via email at [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org) or via U.S. Mail to either: Sites Project Authority, P.O. Box 517, Maxwell, CA 95955; or, U.S. Bureau of Reclamation, 2800 Cottage Way, W-2830, Sacramento, CA 95825

**Public Meetings:** Two virtual public meetings will be held to receive comments from individuals and organizations on the RDEIR/SDEIS. Information on accessing the virtual public meetings is available at <https://sitesproject.org/environmental-review>.

- *Virtual Meeting:* Wednesday, December 15, 2021, 6:00 p.m. to 8:00 p.m. PST
- *Virtual Meeting:* Thursday, December 16, 2021, 9:00 a.m. to 11:00 a.m. PST

For individuals requesting reasonable accommodations, please contact the Sites Project Authority at 530-438-2309 or [Boardclerk@SitesProject.org](mailto:Boardclerk@SitesProject.org).


**SUPPLEMENTARY INFORMATION:** The RDEIR/SDEIS describes the environmental setting and evaluates the potential direct, indirect, and cumulative impacts that could result from implementation of each alternative. The RDEIR/SDEIS includes feasible mitigation measures to avoid, minimize, rectify, reduce, or compensate for significant adverse impacts. The proposed alternatives meet all or the majority of the purpose, need, and objectives of the Project and were developed to avoid or substantially reduce one or more of the Project's significant impacts. Information about the differences between the alternatives from the 2017 Draft EIR/EIS and the three action alternatives in the RDEIR/SDEIS can be found in Appendix 2B of the RDEIR/SDEIS, *Additional Alternatives Screening and Evaluation*.

**FOR FURTHER INFORMATION:** Please contact Alicia Forsythe, Sites Project Authority, at 530-438-2309.

Dated: 11/9/21

Signed: 

Jerry Brown, Executive Director

  
P.O. Box 517  
Maxwell, CA 95955  
530-438-2309



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NOV 18 2021

SITES PROJECT AUTHORITY

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NOV 12 2021

YOLO COUNTY  
CLERK/RECORDER

**Sites Project Authority  
Notice of Availability of the Sites Reservoir Project Revised Draft Environmental Impact  
Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS)**

**Location:** Colusa, Glenn, Tehama, and Yolo Counties, California

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POSTED 11/12/21 TO \_\_\_\_\_

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3. Maxwell Branch Library, 34 Oak Street Maxwell, CA 95955
4. Sacramento Public Library, Central Branch, 828 I Street, Sacramento, CA 95814
5. Colusa County Free Library, Main Branch, 738 Market Street, Colusa, CA 95932
6. Glenn County Public Library, Willows Branch, 201 N. Lassen Street, Willows, CA 95988
7. Tehama County Library, Red Bluff Branch, 645 Madison Street, Red Bluff, CA 96080
8. Yolo Branch Library, 37750 Sacramento Street, Yolo, CA 95697
9. Mary L. Stephens – Davis Branch Library, 315 E. 14<sup>th</sup> Street, Davis, CA 95616

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[https://www.usbr.gov/mp/nepa/nepa\\_project\\_details.php?Project\\_ID=29024](https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=29024)

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For individuals requesting reasonable accommodations, please contact the Sites Project Authority at 530-438-2309 or [Boardclerk@SitesProject.org](mailto:Boardclerk@SitesProject.org).


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**FOR FURTHER INFORMATION:** Please contact Alicia Forsythe, Sites Project Authority, at 530-438-2309.

Dated: 11/9/21

Signed: 

Jerry Brown, Executive Director

  
P.O. Box 517  
Maxwell, CA 95955  
530.438.2309

---

**From:** Spranza, John [John.Spranza@hdrinc.com]  
**Sent:** 1/10/2022 9:40:57 AM  
**To:** Borneman, Tracy E [tracy\_borneman@fws.gov]  
**CC:** Norton, Brad [Brad.Norton@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** Sites Project Eagle Survey Plan  
**Attachments:** Sites Eagle Survey Plan\_12-29-21.pdf

Hello Tracy,

Attached for your reference is the survey plan that we discussed during our meeting. We are scheduled to start surveys on January 24<sup>th</sup>, if you have any questions please do not hesitate to reach out to Brad or I.

Regards,  
John

**John Spranza, MS, CCN**  
*Senior Ecologist / Regulatory Specialist*

**HDR**  
2379 Gateway Oaks Drive, Suite 200  
Sacramento, CA 95833  
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[hdrinc.com/follow-us](https://hdrinc.com/follow-us)





## Memorandum

<b>To:</b>	Ali Forsythe, Sites Project Authority
<b>From:</b>	Brad Norton and Doug Leslie
<b>Date:</b>	December 29, 2021
<b>Re:</b>	<b>Sites Reservoir Revised Draft Eagle Survey Plan</b>

The purpose of this memorandum is to provide a revised draft eagle survey plan to facilitate continued discussion with the U.S. Fish and Wildlife Service (USFWS), Migratory Bird Division regarding issuance of eagle take permits. This survey approach is based on discussions with USFWS in late 2018 and again in 2021, land-cover mapping that occurred to support the preparation of an updated Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and current project needs. This memorandum does not address the details of preparing the permits to support the project.

### Introduction

The Sites Project Authority, a coalition of northern California water districts, is proposing to construct a 1.8 million acre-foot off-stream reservoir, the Sites Reservoir Project (Project), approximately 10 miles west of Maxwell in Colusa County, California. Based on the analysis in the Project Environmental Impact Report/Environmental Impact Statement (EIR/EIS), the Project could result in the loss of an unknown number of golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) nest sites within 947 to 1,006 acres of nesting habitat and an estimated 12,752 to 13,109 acres of foraging habitat for golden eagle; bald eagle foraging habitat would be created. Historical data on the distribution and abundance of golden and bald eagles in the Project Area (here defined as the project footprint and associated buffers) is incomplete, and no recent inventories of eagle nests have been conducted. Therefore, additional information is needed to quantify the extent of potential impacts, develop an appropriate mitigation strategy, and support applications for eagle act permits.

Two permits authorized under the Bald and Golden Eagle Protection Act (BGEPA) may be needed for the project: an eagle nest take permit for removal of eagle nests authorized under 50 Code of Federal Regulations 22.27 and an eagle incidental take permit authorized under 50 Code of Federal Regulations 22.26 for the take of golden eagle and/or bald eagle. BGEPA defines “take” to mean “pursue, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb.” The term “disturb” is further defined by regulation as “to agitate or bother a bald or golden eagle to a degree that causes or is likely to cause...injury to an eagle, a decrease in productivity, or nest abandonment.” Because the Project may result in the removal of golden eagle nest site(s) and in the flooding and removal of potential golden eagle foraging habitat, the Project is likely to cause a decrease in productivity of the local golden eagle breeding population. Therefore, it is critical for the

Sites Project Authority to implement a survey plan to collect the information necessary to accurately assess the potential impacts of the Project on both the local breeding population of golden and bald eagles and migrating or wintering golden and bald eagles that may use the area.

At a meeting on October 15, 2018 to discuss the first draft of this survey plan and the associated reservoir project scope, schedule, and access issues, the USFWS suggested the Sites Project Authority consider the following:

- Separate construction permitting (i.e., bald and golden eagle nest removal and relocation permitting) from the operational permitting (i.e., eagle take permitting via preparation of an Eagle Conservation Plan to address potential impacts on the local breeding population of golden eagles and potential migrating and wintering eagles associated with flooding of the reservoir and associated loss of foraging habitat).
- Conducting surveys to assess the potential impacts of the Project on any migrating and/or wintering eagles that may use the area.
- Put more emphasis on the use of ground surveys to augment helicopter surveys to decrease the likelihood that nesting pairs are missed.
- Create a long-term survey plan associated with an Eagle Conservation Plan to address operational impacts.

In addition, USFWS provided minor written comments on the first draft of the survey plan on October 31, 2018. Based on these discussions and comments, the survey plan was revised in January 2019 to reflect the strategy of pursuing separate construction and operational permitting. However, the survey plan was temporarily placed on hold as an updated EIS/EIR was prepared and other project permitting proceeded. The survey plan was updated again in December 2021 to account for the most recent project information and timelines.

Though access to the area surrounding the project footprint is currently very limited, the survey area the survey area is comprised of the project footprint and a 4-mile buffer around the project footprint. Finally, to quantify use of the area by breeding, wintering, and migrating golden and bald eagles and thus more accurately assess the effects of removal of potential foraging habitat, point count surveys will be conducted throughout the reservoir portion of the Project Area.

## Goals and Objectives of the Survey Plan

The goal of the eagle survey plan is to collect the basic information necessary to accurately assess the potential impacts of the Project on golden and bald eagles. This eagle survey plan is designed to facilitate the collection of basic information to help support permit decisions regarding the project's impacts on eagles. To achieve the goal of this survey plan, the following three objectives have been identified.

**Objective 1.** Determine the extent of nesting and foraging habitat loss on the local breeding population of golden eagles.

**Objective 2.** Determine the distribution, abundance, and productivity of the breeding population of bald and golden eagles.

**Objective 3.** Evaluate and quantify use of the reservoir portion of the Project Area by breeding, wintering and migrating bald and golden eagles.

## Methods

### **Objective 1. Determine the extent of nesting and foraging habitat loss on the local breeding population of golden eagles.**

Habitat maps of the reservoir portion of the Survey Area were updated to support preparation of the most recent EIS/EIR for the project. Blue oak woodland and escarpments/cliffs were considered potential nesting habitat. Annual grassland and chaparral, as well as blue oak woodlands, were considered potential foraging habitat. Based on the updated habitat maps, the project could affect 947 to 1,006 acres of nesting habitat and an estimated 12,752 to 13,109 acres of foraging habitat (including the nesting habitat comprised of blue oak woodland) for golden eagles. Similar model parameters were applied to coarser scale land-cover data in the portion of the Survey Area outside the reservoir footprint.

The habitat mapping effort will help inform Objective 2 below.

### **Objective 2. Determine the distribution, abundance, and productivity of the local breeding population of bald and golden eagles.**

Two approaches have been used to determine the distribution and abundance of golden eagles in large project areas: ground-based occupancy surveys and helicopter surveys.

Ground-based occupancy surveys can be used to estimate the distribution, abundance, and density of nesting pairs and to collect information on the productivity of the local breeding population. The advantage of these types of surveys is that information on the probability of detection can be used to provide a more accurate count or at least an assessment of the accuracy of the count. However, individual nesting pairs that may go unidentified due to access and visibility issues.

Helicopter surveys provide a near complete census of the local breeding population without requiring ground access. If multiple surveys are conducted through the breeding season, the probability of detection can also be estimated to provide an assessment of the accuracy of the count.

For the purpose of quantifying the distribution and abundance of the population of golden and bald eagles nesting, a complete census is proposed. Helicopter surveys are the primary survey approach, supplemented with ground surveys in areas where access is available and survey results indicate that additional evaluation of the habitat is needed.

Surveys will be conducted using the methodology outlined in Pagel et al. (2010). Three surveys will be conducted corresponding to the early courtship, egg laying, and near fledging periods. Three surveys will allow for an estimate of detection probability so that an accurate population estimate can be obtained. Surveys will be conducted by helicopter over all areas identified as having potential to support eagle nesting pairs. Survey transects during the first survey will be spaced to provide complete coverage of all potential nesting habitat. The first aerial survey will be completed in January before trees begin to leaf out and the visibility of nest structures declines (i.e., late February). Survey personnel will be experienced conducting surveys for, and monitoring of, nesting bald and golden eagles (Pagel et al. 2010).

During the first aerial survey, an attempt will be made to identify and map all potential eagle nest structures, including all alternate nests within a territory. All incidental sightings of eagles will also be mapped. During the second aerial survey, all areas with potential to support nesting eagles will be surveyed, and all previously located nest structures will be checked for activity. All eagles observed will be mapped. During the third survey, aerial or ground surveys may be employed; all areas with potential to support nesting eagles will be surveyed, and the status and nest success of each previously detected nesting pair will be documented. Ground surveys will be used in areas where access is available and survey results indicate that additional evaluation of the habitat is needed. The survey area is illustrated in Figure 1 with 5.5-mile grid cells; helicopter surveys will focus on grid cells 1-8 and other areas will be evaluated by ground surveys from public roads.

### **Objective 3. Evaluate and quantify the use of the reservoir portion of the project area by breeding, wintering and migrating bald and golden eagles.**

Avian use surveys (often referred to as “point count surveys”) will be used to quantify use of the Project Area by foraging eagles. Eagle use of the Project Area will be evaluated during both the breeding and non-breeding seasons to allow for an assessment of use by eagles migrating from other areas. Given the size of the Project Area, approximately 41 observation points would be needed. However, as access to all points is not possible, ICF has identified 8 potential observation points. Observation points will be located on ridgetops that provide an unobstructed view of the Project Area. The number of observation points will be determined by the final size of the Project Area, access issues, and an assessment of the sample sizes likely to be obtained (i.e., if use of the area is high, fewer observation points would be needed to detect an increase in use of the area by wintering or migrating eagles). Figure 2 illustrates potential use survey points.

Sixty-minute surveys will be conducted at each point weekly by trained observers for one year. The order in which the observation points are surveyed will be rotated systematically to ensure that each observation point is sampled throughout the day. During each survey, the surveyor will conduct observations of a 360-degree viewshed. The maximum survey radius will be 800 meters. Every minute, the observer will scan the viewshed and record the number of eagles seen or heard, the location of the eagle, and the behavior and age class (when possible) of the eagle.

“Minutes” are defined as the minute of the survey in which the bird is detected. A stopwatch is started at the beginning of the session. If an eagle is detected 5 minutes and 38 seconds into the survey, the minute is recorded as minute 6. More than one entry for each minute is allowed and each detection can be recorded on a separate line in the same minute (i.e., if an eagle is soaring in one location and another eagle is contouring in another area both can be recorded in that minute).

“Age class” is defined as the age of the bird at the time of detection. Although it is possible to identify six age classes of golden eagle (i.e., juvenile, Basic I, Basic II, Basic III, Subadult, and Adult) age class identification is often difficult in a field setting. Therefore, the following three categories have been defined to allow for recording the age class to the level of accuracy typically achieved in the field. The adult, non-adult, and unknown categories are to be used most of the time. If a more precise age classification can be determined, that age classification can be documented in the notes.

“Number” is the number of individuals observed in the minute of the observation period being recorded and engaging in the same behavior at the same location.

“General location” is defined as the region of the survey area designated by an alpha-numeric code and defined by the four directional quadrants and the four distance categories in which a bird is located at the minute it is engaging in the behavior being recorded. The survey area is divided into quadrants by the four intercardinal directions (i.e., NE, NW, SE, SW), and the survey radius is divided into four distance categories (i.e., 0-100 meters, 101-300 meters, 301-600 meters, and 601-800 meters). This results in potential 16 locations, each designated by a location code (e.g., A1 thru A4, B1 thru B4), that may be recorded for each bird observation of each minute of survey.

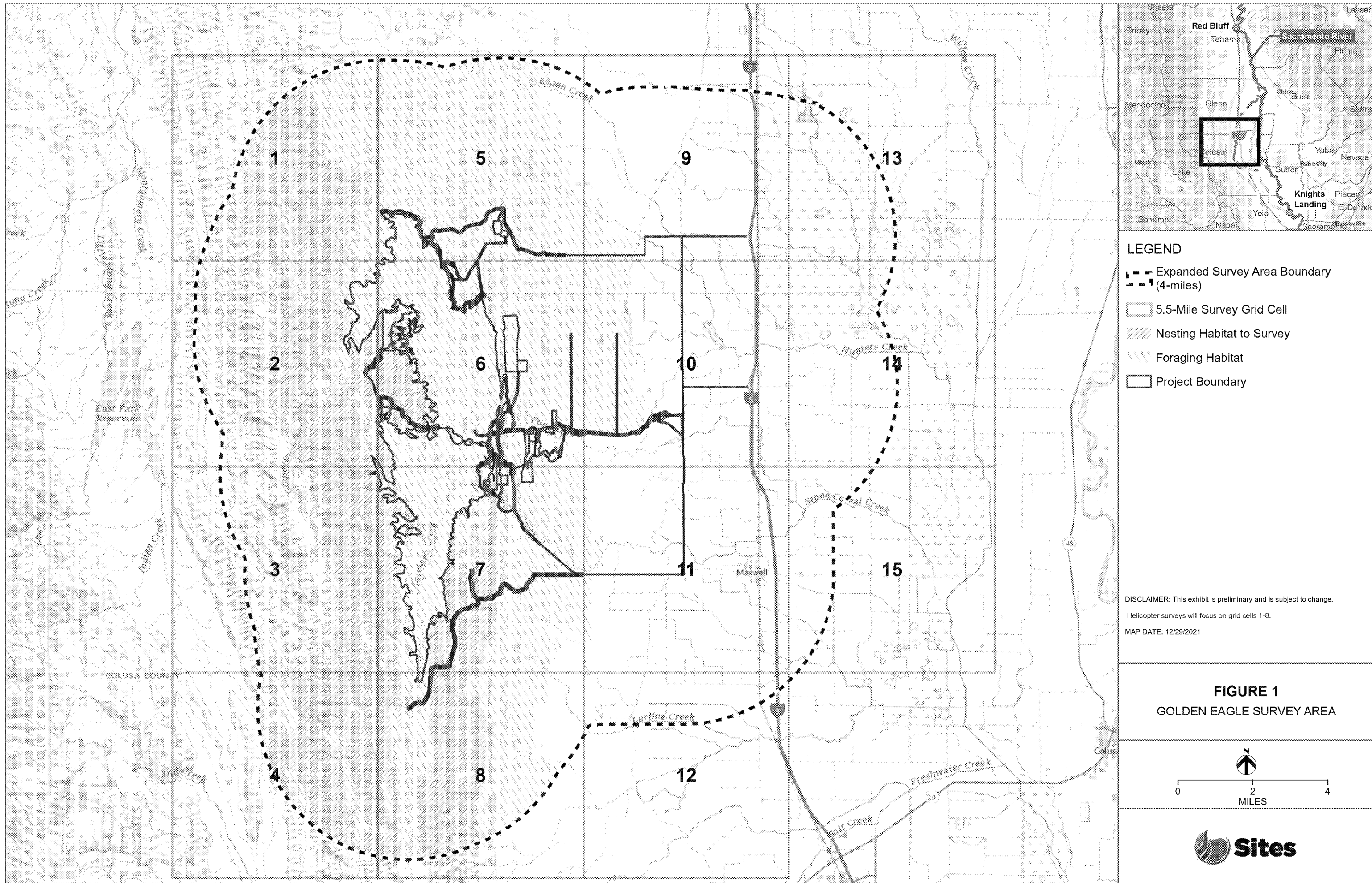
## Reporting

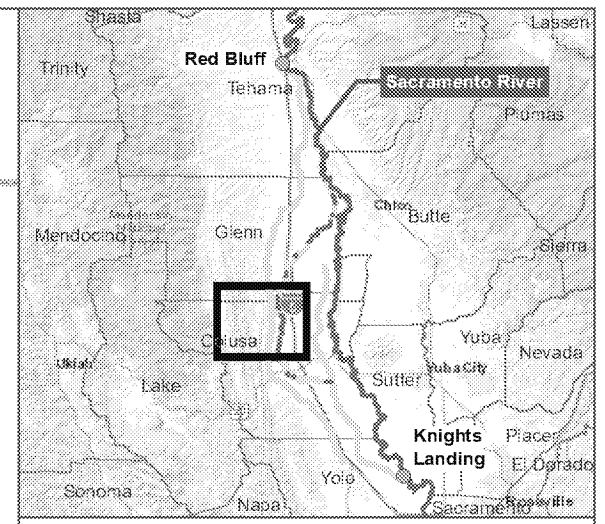
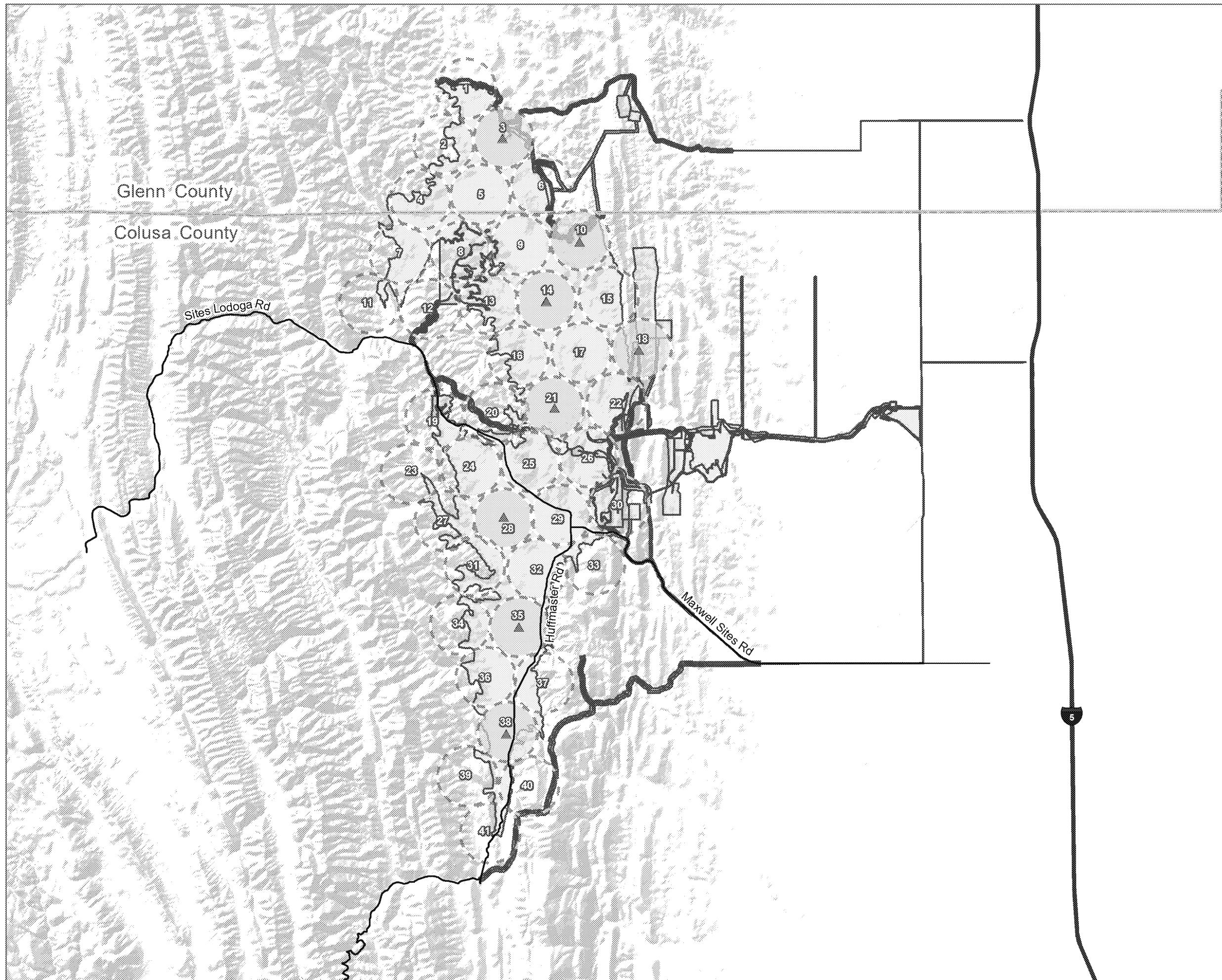
The results of the habitat assessment and eagle survey will be compiled in a report that will include a thorough discussion of methods, results, and conclusions regarding the distribution, abundance, and productivity of, and potential impacts on, eagles nesting within the area surveyed by December 2022. This information will be used to inform the development of an eagle nest take permit, a short-term take permit for project construction, and a long-term take permit for project operation.

Results of the assessment of use of reservoir portion of the Project Area by breeding, wintering and migrating eagles, and the assessment of the distribution and abundance of breeding eagles in the survey area will be provided at the end of the year in which the work is conducted. This information will be used to inform the development of an Eagle Conservation Plan.

## Literature Cited

Pagel, J. E., D. M. Whittington, and G. T. Allen. 2010. *Interim golden eagle technical guidance: inventory and monitoring protocols; and other recommendations in support of eagle management and permit issuance*. Division of Migratory Bird Management, U.S. Fish and Wildlife Service.

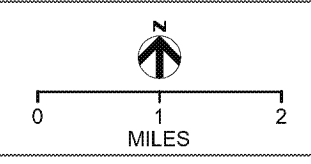




- LEGEND**
- Project Boundary
  - Observation Point
- 800-meter Observation Buffer**
- To Observe
  - Not to Observe

DISCLAIMER: This exhibit is preliminary and is subject to change.  
 MAP DATE: 12/29/2021

**FIGURE 2**  
 POTENTIAL USE SURVEY POINTS



---

**From:** Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]  
**Sent:** 1/11/2022 11:00:29 AM  
**To:** Jbill411@yahoo.com  
**CC:** Kevin Spesert [kspesert@sitesproject.org]; Risse, Danielle [Danielle.Risse@hdrinc.com]; Conner McDonald [conner@cmdwest.com]  
**Subject:** Sites: Geotech Tribal Monitoring

**Importance:** High

Hey Doc

Great talking to you. I'm glad you and the family are doing well. I'm glad that you/your tribe can support us again by providing tribal monitoring.

There are two separate efforts that are coming up.

The first is an early evaluation, and that is scheduled from February 21<sup>st</sup> through March 10<sup>th</sup>. The second, we are still working through permitting, etc., and is anticipated to start June/July of this year and extend through 2024.

Lets keep in touch for the first effort. I, or Danielle Risse, will contact you. We are aiming to conduct preconstruction surveys no more than 2 weeks before February 21<sup>st</sup> – hoping you can make it.

Thanks again and chat soon! Looking forward to seeing you soon!

*Jelica Arsenijevic*  
*Environmental Project Manager*

**Due to COVID-19, I will be working from home. Please contact me via cell # listed below. Be safe out there!**



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[Jelica.Arsenijevic@hdrinc.com](mailto:Jelica.Arsenijevic@hdrinc.com)

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)





As some of you may know, a 2017 Change.org petition containing inaccuracies about Sites Reservoir Project began recirculating in recent weeks. While being promoted now, it is important to note that a majority of the signatures gathered were collected in response to a previous version (2017) of the Sites Reservoir proposal. Numerous, meaningful changes have been made to the proposed project over the past five years, including substantial and critical modifications to ensure the environment receives ample benefits from Sites. At the core of some of the criticisms in the petition are issues we at the Sites Project Authority and our participants care deeply about – environmental health, freshwater fish preservation, and preserving river water supplies. However, many statements being made today are either based on the outdated version of Sites Reservoir from 2017 or, are simply false.

It's critical for our participants to have factual, timely information on hand as Sites progresses and gains more attention. Below, we have prepared a summary of common misinformation about Sites, and responses that may assist in communicating to others about the 2022 proposed Sites Reservoir Project.

### **Is Sites Reservoir a private reservoir?**

No. Sites Reservoir is funded 100% by local, state, and federal public dollars. There are environmental, recreational and flood control benefits – as well new dry year water supplies secured for public agency ratepayers throughout California. Participation in Sites is broad and diverse, including the Bureau of Reclamation, State of California, urban areas of Southern California and the Bay Area, as well as public irrigation districts in the Sacramento and San Joaquin Valley's.

### **Does Sites Reservoir need new Delta conveyance?**

No. The project is not dependent on the construction of Delta tunnels. Sites Reservoir will function independently, with or without a new Delta conveyance system. The Draft Environmental Impact Report/Statement evaluates Sites Reservoir as a standalone project.

### **Has the Sites Project Authority consulted with Native American tribes during this process?**

Yes. Both the Sites Project Authority and the Bureau of Reclamation have consulted and will continue to consult with recognized Native American tribes regarding impacts to Tribal people and resources. The Authority has reached out to over a dozen tribes under Assembly Bill 52 and is in ongoing consultation under AB 52 with several tribes.

### **Will the project harm fish species in the Sacramento-San Joaquin Delta?**

No. Sites Reservoir does not threaten salmon and other fish. In fact, there are highly protective operating conditions in place that must be in place before diversions into Sites Reservoir can proceed, including adapting to evolving conditions. In addition, the intakes being used for diverting water into Sites Reservoir include state-of-the-art fish screens that are proven to be highly effective at protecting fish. And, the current proposed project includes more cold water for salmon in the driest years when it is needed most. Not only is no harm done, but

there is also a net benefit from this project to Sacramento River salmon, Delta smelt, and the Sacramento-San Joaquin Delta estuary.

### **Will Sites Reservoir will harm the environment?**

Transformational projects of the magnitude and importance of Sites are not without tradeoffs. There are specific elements of the Project that are critical to enhancing environmental conditions. First, the State has made a large investment, through the 2014 passage of Proposition 1, to enhance their ability to support critical aquatic needs. Second, there are opportunities to partner with the State and Federal water projects in coordinated operations that will enhance fishery protections associated with their operations. Beyond these enhancements, the Project itself is being designed to avoid and lessen any environmental concerns and, when necessary, provide appropriate mitigation.

### **Will Sites Reservoir help increase water supplies in future droughts?**

Yes. Sites Reservoir is an insurance policy for future droughts. Sites Reservoir does not rely on snowpack and if the scientific projections are correct about the impacts of climate change (i.e. California is expected to receive about the same annual precipitation that it currently does but more will come as rain instead of snow), then having Sites Reservoir will mean we can safely collect more water in the reservoir for use during future droughts.

### **Will Sites Reservoir divert water from the Sacramento River even during critically dry years?**

It depends. Even during drier years there can be significant precipitation events that present conditions where water can be diverted safely from the river and placed in Sites Reservoir. All diversions will be subject to the highly protective operating conditions that are currently being proposed and will ultimately be permitted by State and Federal regulatory agencies for the Sites Reservoir Project.

### **Does Sites Reservoir guarantee water to participants?**

Sites Reservoir is a beneficiary pays project, which means that the benefits of the project go to those paying. Each participant (including environmental uses) has control over their portion of the storage space and a proportionate share of the water diverted into Sites Reservoir. There is flexibility in the timing and uses of the water, including for the environment. The assurance of water being in the reservoir is largely the result of the individual participant decisions in their operations of their portion of the facility. This way, each member is assured to receive what they pay for in a way that works within and complements that member's water supply portfolio.

### **Is water from the project is too expensive?**

The Sites Project Authority will continue to look at all options as to ensure that the project is affordable to all participants. Affordability is essential, and the Project will only move forward if participants decide that it is affordable.

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/12/2022 3:19:12 PM  
**To:** Heydinger, Erin [Erin.Heydinger@hdrinc.com]; mmaltby@brwnald.com; Spranza, John [john.spranza@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Thanks Erin. Let's complete in mid-2024. By that time, we will have our water right, or BA, and our Operations ITP well in hand. I would like to wait to complete it until we have our Funks and Stone Corral Creeks release plan so we can factor that in as that would be a key component for some members. But I would image that we would be done with that by that time also.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 | [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>  
**Sent:** Wednesday, January 12, 2022 3:05 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; mmaltby@brwnald.com; Spranza, John <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

I added the Ops Plan Version 2. We budgeted this to complete end of 2024, but Ali, do you think it needs to be done sooner? We can't finish it until the water right is complete, but we could possibly push it to complete in early 2024.

There are other ops deliverables, but I'm not sure they're really key deliverables. The work outside of supporting other deliverables would be shifting to CalSim 3, expanded daily operations model, and participant-specific modeling. They aren't really schedule drivers or required for specific milestones. Let me know if you want me to add any of these.

Thanks!  
Erin

Erin Heydinger PE, PMP  
D 916.679.8863 M 651.307.9758

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---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 12, 2022 2:54 PM  
**To:** mmaltby@brwnald.com; Spranza, John <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

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Thanks. I rebooted and was able to get in there.

I made a number of changes. John and Laurie, take a look at them. I left off the management plans as I feel like these are a little in flux. We could add these in later once we have a better sense of how these are going to frame up.

John, I left off Funks and Stone Corral Creeks Plan. I debated about putting it in, but decided to leave it out for now. What do you think?

Erin, can you add in a line for the Ops Plan, V2? Anything else for operations? We seem sort of short here, but most of this effort is encompassed in other efforts. So maybe we are fine.

Ali

---

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[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>  
**Sent:** Wednesday, January 12, 2022 2:00 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

That's strange. Here is a link to the parent folder:  
[Project Controls - Schedules - Amendment 3 - Schedule updates \(sharepoint.com\)](#)

If that doesn't work its:

- Project Controls
- WorkPlans/Schedules
- Schedules – Amendment 3
- A3 Schedule.docx

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, January 12, 2022 2:50 PM  
**To:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Marcus – the file only opens a Read Only for me. Where is it located so I can open in my web browser?

Ali

---

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**From:** Alicia Forsythe  
**Sent:** Wednesday, January 12, 2022 12:59 PM  
**To:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Hi all – I read through all of the emails and will take a look at this after my 1 PM call. I should be done around 2 PM and will email you both.

Ali

-----  
 Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 | [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>  
**Sent:** Wednesday, January 12, 2022 11:53 AM  
**To:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Cc:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** FW: Sites A3 Milestone Schedule - Review and Edit Request

Hi John – I also wanted to let you know that I moved over a few items from last years work plan reporting. This was likely added after your review, so please take one more look at these items. See items highlighted in green. The ITP Construction Permit has a finish date of Dec 2021. We will either need to flag this as completed or push the finish date out.

Table 1. Work Plan Key Deliverables				
Reporting Period: January 2022				
Deliverable	Start	Finish	Status	Notes, New Issues or Potential Impacts
Receive Water Right Order and Permit	Apr-2022	Oct-2023	●	We will need to add an interim milestone (maybe getting through <u>protest</u> period) by Dec 2022
Biological Assessment	Oct-2020	Mar-2022		Schedule revised based on discussions with <u>CDEW</u> and Reclamation on diversions and exchanges.
Section 105 Programmatic Agreement	Sep-2020	Mar-2022		Ongoing meetings and coordination, draft PA under development.
ITP Section 2081 Permit Construction Application	Sep-2020	Dec-2021		Application in final review and on schedule for a December 2021 submittal.
ITP Section 2081 Permit Operations Application	Sep-2020	Mar-2022		Schedule revised based on discussions with <u>CDEW</u> and Reclamation on diversions and exchanges.
Clean Water Act 204/401 Applications	Sep-2020	Mar-2022		Schedule adjusted to reflect additional time for discussions on local facility approach. Ongoing joint meetings with <u>SWBCB</u> , <u>BWQCB</u> and <u>USACE</u> .
Obtain Local Agency Agreements & Permits	Jul-2022	Dec-2023	●	
Certify Final EIR/EIS and approve preferred project and MMRE (30 day period for legal challenge)	Jan-2022	Dec-2022	●	The current target for certification of the Final EIR and issuance of an NOD is the end of 2022. Reclamation's ROD will follow.
Approve Land Acquisition Master Plan and ROW Manual	Jan-2022	Dec 2022	●	
Complete Landowner Negotiations with "Willing Seller" Properties	Jan-2023	Dec-2024	●	

**Bold = Anticipated Finish Date in 2022**      ● = On Track      ● = Area of Potential Concern      ● = Delayed      ● = Completed

**From:** Marcus Maltby  
**Sent:** Wednesday, January 12, 2022 12:39 PM  
**To:** Spranza, John <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>; Jerry Brown <[jbrown@sitesproject.org](mailto:jbrown@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>;

JP Robinette <JRobinette@BrwnCald.com>; laurie.warner.herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; conner <conner@cmdwest.com>; Westcot, Cathy <cathy.westcot@hdrinc.com>; Luu, Henry <henry.luu@hdrinc.com>

Cc: Marcia Kivett <MKivett@sitesproject.org>

Subject: RE: Sites A3 Milestone Schedule - Review and Edit Request

Hi John – Thanks for reviewing the schedule and providing input. To respond to your comments:

- The ESA Permits are different than the Operations Agreements. To my knowledge these were not left off intentionally. Please add ESA to the schedule.
- The line referencing the Mitigation Acquisition Master Plan came from the Strategic Plan. I've included a screenshot of the exact language below to hopefully provide more context.

Strategic Plan Goal Area	Work Period Objective	Optional Duration of activity (months)
4		
23	g. Develop a mitigation acquisition master plan and approach for mitigating the Project effects. Begin biological and cultural resources surveys to refine impacts and mitigation obligations on properties where willing land access can be obtained.	18
24		(related to key
25		permits)
26		36
27		(for all other
28		work)

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Wednesday, January 12, 2022 11:28 AM

To: Marcus Maltby <mmaltby@BrwnCald.com>; Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; Joe Trapasso <jtrapasso@sitesproject.org>; JP Robinette <JRobinette@BrwnCald.com>; laurie.warner.herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; conner <conner@cmdwest.com>; Westcot, Cathy <cathy.westcot@hdrinc.com>; Luu, Henry <henry.luu@hdrinc.com>

Cc: Marcia Kivett <MKivett@sitesproject.org>

Subject: RE: Sites A3 Milestone Schedule - Review and Edit Request

Marcus,

I left some comments in the document for you, I also don't see some key milestones associated with state and federal ESA permits (among others). I don't know if this was done intentionally based of discussions with Ali but I wanted to point it out in case not.

John Spranza

D 916.679.8858 M 818.640.2487

From: Marcus Maltby <mmaltby@BrwnCald.com>

Sent: Friday, January 7, 2022 1:10 PM

To: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; Joe Trapasso <jtrapasso@sitesproject.org>; JP Robinette <JRobinette@BrwnCald.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <john.spranza@hdrinc.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; conner <conner@cmdwest.com>; Westcot, Cathy <cathy.westcot@hdrinc.com>; Luu, Henry <henry.luu@hdrinc.com>


Cc: Marcia Kivett <MKivett@sitesproject.org>

Subject: Sites A3 Milestone Schedule - Review and Edit Request

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Hello Everyone – Please see draft milestone schedule for the A3 work period linked below. I’ve compiled this information from a combination of the strategic plan goals, A3 work plan, and general conversations with various leads. While I think this is a good starting point, I ask that each of you review and edit the attached document to accurately reflect major milestones and deliverables in your area. I’ve placed the file on Sharepoint with track changes turned on so we can see what edits others have made. This should help with some of the areas that may have some overlap in responsibility.

Please have any edits incorporated by **COB Tuesday 1/11**. Feel free to reach out with any questions. I plan to go back in and clean up formatting after everyone has provided their input, so for now please just focus on content.

 [A3 Schedule.docx](#)

Thanks,

**Marcus Maltby, PE\***

Brown and Caldwell

[MMaltby@brwncald.com](mailto:MMaltby@brwncald.com)

T 714.689.4826 | C 714.392.1909

\*Professional Registration in Specific States



---

**From:** Heydinger, Erin [Erin.Heydinger@hdrinc.com]  
**Sent:** 1/12/2022 3:31:42 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Done!

Erin Heydinger PE, PMP  
D 916.679.8863 M 651.307.9758

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---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 12, 2022 3:19 PM  
**To:** Heydinger, Erin <erin.heydinger@hdrinc.com>; mmaltby@brwncald.com; Spranza, John <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

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Thanks Erin. Let's complete in mid-2024. By that time, we will have our water right, or BA, and our Operations ITP well in hand. I would like to wait to complete it until we have our Funks and Stone Corral Creeks release plan so we can factor that in as that would be a key component for some members. But I would image that we would be done with that by that time also.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>  
**Sent:** Wednesday, January 12, 2022 3:05 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; mmaltby@brwncald.com; Spranza, John <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

I added the Ops Plan Version 2. We budgeted this to complete end of 2024, but Ali, do you think it needs to be done sooner? We can't finish it until the water right is complete, but we could possibly push it to complete in early 2024.

There are other ops deliverables, but I'm not sure they're really key deliverables. The work outside of supporting other deliverables would be shifting to CalSim 3, expanded daily operations model, and participant-specific modeling. They aren't really schedule drivers or required for specific milestones. Let me know if you want me to add any of these.

Thanks!  
Erin



Erin Heydinger PE, PMP  
D 916.679.8863 M 651.307.9758

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, January 12, 2022 2:54 PM  
**To:** [mmaltby@brwncald.com](mailto:mmaltby@brwncald.com); Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Laurie Warner Herson <[laurie.warner.herson@phenixenv.com](mailto:laurie.warner.herson@phenixenv.com)>; Heydinger, Erin <[erin.heydinger@hdrinc.com](mailto:erin.heydinger@hdrinc.com)>  
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[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**Sent:** Wednesday, January 12, 2022 12:59 PM  
**To:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
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Obtain Local Agency Agreements & Permits	Jul-2022	Dec-2023	●	
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Approve Land Acquisition Master Plan and ROW Manual	Jan-2022	Dec 2022	●	
Complete Landowner Negotiations with "Willing Seller" Properties	Jan-2023	Dec-2024	●	

**Bold = Anticipated Finish Date in 2022**     
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**Cc:** Marcia Kivett <[MKivett@sitesproject.org](mailto:MKivett@sitesproject.org)>

**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Hi John – Thanks for reviewing the schedule and providing input. To respond to your comments:

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- The line referencing the Mitigation Acquisition Master Plan came from the Strategic Plan. I've included a screenshot of the exact language below to hopefully provide more context.

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24		(related to key
25		permits)
26		36
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28		work)

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**Cc:** Marcia Kivett <MKivett@sitesproject.org>

**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Marcus,

I left some comments in the document for you, I also don't see some key milestones associated with state and federal ESA permits (among others). I don't know if this was done intentionally based of discussions with Ali but I wanted to point it out in case not.

John Spranza

D 916.679.8858 M 818.640.2487

---

**From:** Marcus Maltby <mmaltby@BrwnCald.com>

**Sent:** Friday, January 7, 2022 1:10 PM

**To:** Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; Joe Trapasso <jtrapasso@sitesproject.org>; JP Robinette <JRobinette@BrwnCald.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <john.spranza@hdrinc.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; conner <conner@cmdwest.com>; Westcot, Cathy <cathy.westcot@hdrinc.com>; Luu, Henry <henry.luu@hdrinc.com>

**Cc:** Marcia Kivett <MKivett@sitesproject.org>

**Subject:** Sites A3 Milestone Schedule - Review and Edit Request

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Hello Everyone – Please see draft milestone schedule for the A3 work period linked below. I've compiled this information from a combination of the strategic plan goals, A3 work plan, and general conversations with various leads. While I think this is a good starting point, I ask that each of you review and edit the attached document to accurately reflect major milestones and deliverables in your area. I've placed the file on Sharepoint with track changes turned on so we can see what edits others have made. This should help with some of the areas that may have some overlap in responsibility.

Please have any edits incorporated by **COB Tuesday 1/11**. Feel free to reach out with any questions. I plan to go back in and clean up formatting after everyone has provided their input, so for now please just focus on content.

 [A3 Schedule.docx](#)

Thanks,

**Marcus Maltby, PE\***

Brown and Caldwell

[MMaltby@brwn Caldwell.com](mailto:MMaltby@brwn Caldwell.com)

T 714.689.4826 | C 714.392.1909

\*Professional Registration in Specific States



---

**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/12/2022 4:16:01 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; mmaltby@brwncald.com; Spranza, John [john.spranza@hdrinc.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Looks good for planning - thanks Ali !

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 12, 2022 2:54 PM  
**To:** mmaltby@brwncald.com; Spranza, John <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>  
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Brown and Caldwell

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T 714.689.4826 | C 714.392.1909

\*Professional Registration in Specific States





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**To:** Alicia Forsythe [aforsythe@sitesproject.org]; mmaltby@brwnald.com; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

It looks good, I agree on the stream studies and not a "major" milestone.

John Spranza

D 916.679.8858 M 818.640.2487

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**From:** Marcus Maltby <mmaltby@BrwnCald.com>  
**Sent:** Wednesday, January 12, 2022 2:00 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; Spranza, John <john.spranza@hdrinc.com>  
**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

That's strange. Here is a link to the parent folder:  
[Project Controls - Schedules - Amendment 3 - Schedule updates \(sharepoint.com\)](#)

If that doesn't work its:

- Project Controls
- WorkPlans/Schedules
- Schedules – Amendment 3
- A3 Schedule.docx

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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Sent:** Wednesday, January 12, 2022 2:50 PM

**To:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>

**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Marcus – the file only opens a Read Only for me. Where is it located so I can open in my web browser?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Alicia Forsythe

**Sent:** Wednesday, January 12, 2022 12:59 PM

**To:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>

**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Hi all – I read through all of the emails and will take a look at this after my 1 PM call. I should be done around 2 PM and will email you both.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>

**Sent:** Wednesday, January 12, 2022 11:53 AM

**To:** Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>

**Cc:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Subject:** FW: Sites A3 Milestone Schedule - Review and Edit Request

Hi John – I also wanted to let you know that I moved over a few items from last years work plan reporting. This was likely added after your review, so please take one more look at these items. See items highlighted in green. The ITP Construction Permit has a finish date of Dec 2021. We will either need to flag this as completed or push the finish date out.

Table 1. Work Plan Key Deliverables				
Reporting Period: January 2022				
Deliverable	Start	Finish	Status	Notes, New Issues or Potential Impacts
Receive Water Right Order and Permit	Apr-2022	Oct-2023	●	We will need to add an interim milestone (maybe getting through protests period) by Dec 2022
Biological Assessment	Oct-2020	Mar-2022		Schedule revised based on discussions with CDFW and Reclamation on diversions and exchanges.
Section 105 Programmatic Agreement	Sep-2020	Mar-2022		Ongoing meetings and coordination, draft PA under development.
PPP Section 2081 Permit Construction Application	Sep-2020	Dec-2021		Application in final review and on schedule for a December 2021 submittal.
PPP Section 2081 Permit Operations Application	Sep-2020	Mar-2022		Schedule revised based on discussions with CDFW and Reclamation on diversions and exchanges.
Clean Water Act 404/401 Applications	Sep-2020	Mar-2022		Schedule adjusted to reflect additional time for discussions on local facility approach. Ongoing joint meetings with SWRCB, RWQCB and USACE
Obtain Local Agency Agreements & Permits	Jul-2022	Dec-2023	●	
Certify Final EIR/EIS and approve preferred project and MMRP (30 day period for legal challenge)	Jan-2022	Dec-2022	●	The current target for certification of the Final EIR and issuance of an NOD is the end of 2022. Reclamation's ROD will follow.
Approve Land Acquisition Master Plan and ROW Manual	Jan-2022	Dec 2022	●	
Complete Landowner Negotiations with "Willing Seller" Properties	Jan-2023	Dec-2024	●	

Bold = Anticipated Finish Date in 2022     
 ● = On Track     
 ○ = Area of Potential Concern     
 ● = Delayed     
 ● = Completed

**From:** Marcus Maltby

**Sent:** Wednesday, January 12, 2022 12:39 PM

**To:** Spranza, John <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>; Jerry Brown <[jbrown@sitesproject.org](mailto:jbrown@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>; JP Robinette <[JRobinette@BrwnCald.com](mailto:JRobinette@BrwnCald.com)>; laurie.warner.herson <[laurie.warner.herson@phenixenv.com](mailto:laurie.warner.herson@phenixenv.com)>; Heydinger, Erin <[Erin.Heydinger@hdrinc.com](mailto:Erin.Heydinger@hdrinc.com)>; conner <[conner@cmdwest.com](mailto:conner@cmdwest.com)>; Westcot, Cathy <[cathy.westcot@hdrinc.com](mailto:cathy.westcot@hdrinc.com)>; Luu, Henry <[henry.luu@hdrinc.com](mailto:henry.luu@hdrinc.com)>

**Cc:** Marcia Kivett <[MKivett@sitesproject.org](mailto:MKivett@sitesproject.org)>

**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Hi John – Thanks for reviewing the schedule and providing input. To respond to your comments:

- The ESA Permits are different than the Operations Agreements. To my knowledge these were not left off intentionally. Please add ESA to the schedule.
- The line referencing the Mitigation Acquisition Master Plan came from the Strategic Plan. I've included a screenshot of the exact language below to hopefully provide more context.

Strategic Plan Goal Area	Work Period Objective	Optional Duration of activity (months)
4		
23	g. Develop a mitigation acquisition master plan and approach for mitigating the Project effects. Begin biological and cultural resources surveys to refine impacts and mitigation obligations on properties where willing land access can be obtained.	18
24		(related to key
25		permits)
26		36
27		(for all other
28		work)

**From:** Spranza, John <[John.Spranza@hdrinc.com](mailto:John.Spranza@hdrinc.com)>

**Sent:** Wednesday, January 12, 2022 11:28 AM

**To:** Marcus Maltby <[mmaltby@BrwnCald.com](mailto:mmaltby@BrwnCald.com)>; Jerry Brown <[jbrown@sitesproject.org](mailto:jbrown@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Joe Trapasso <[jtrapasso@sitesproject.org](mailto:jtrapasso@sitesproject.org)>; JP Robinette <[JRobinette@BrwnCald.com](mailto:JRobinette@BrwnCald.com)>; laurie.warner.herson <[laurie.warner.herson@phenixenv.com](mailto:laurie.warner.herson@phenixenv.com)>; Heydinger, Erin <[Erin.Heydinger@hdrinc.com](mailto:Erin.Heydinger@hdrinc.com)>; conner <[conner@cmdwest.com](mailto:conner@cmdwest.com)>; Westcot, Cathy <[cathy.westcot@hdrinc.com](mailto:cathy.westcot@hdrinc.com)>; Luu, Henry <[henry.luu@hdrinc.com](mailto:henry.luu@hdrinc.com)>

**Cc:** Marcia Kivett <MKivett@sitesproject.org>

**Subject:** RE: Sites A3 Milestone Schedule - Review and Edit Request

Marcus,

I left some comments in the document for you, I also don't see some key milestones associated with state and federal ESA permits (among others). I don't know if this was done intentionally based of discussions with Ali but I wanted to point it out in case not.

John Spranza

D 916.679.8858 M 818.640.2487

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**From:** Marcus Maltby <mmaltby@BrwnCald.com>

**Sent:** Friday, January 7, 2022 1:10 PM

**To:** Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; Joe Trapasso <jtrapasso@sitesproject.org>; JP Robinette <JRobinette@BrwnCald.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <john.spranza@hdrinc.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; conner <conner@cmdwest.com>; Westcot, Cathy <cathy.westcot@hdrinc.com>; Luu, Henry <henry.luu@hdrinc.com>

**Cc:** Marcia Kivett <MKivett@sitesproject.org>

**Subject:** Sites A3 Milestone Schedule - Review and Edit Request

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Everyone – Please see draft milestone schedule for the A3 work period linked below. I've compiled this information from a combination of the strategic plan goals, A3 work plan, and general conversations with various leads. While I think this is a good starting point, I ask that each of you review and edit the attached document to accurately reflect major milestones and deliverables in your area. I've placed the file on Sharepoint with track changes turned on so we can see what edits others have made. This should help with some of the areas that may have some overlap in responsibility.

Please have any edits incorporated by **COB Tuesday 1/11**. Feel free to reach out with any questions. I plan to go back in and clean up formatting after everyone has provided their input, so for now please just focus on content.

 [A3 Schedule.docx](#)

Thanks,

**Marcus Maltby, PE\***

Brown and Caldwell



[MMaltby@brwn Caldwell.com](mailto:MMaltby@brwn Caldwell.com)

T 714.689.4826 | C 714.392.1909

\*Professional Registration in Specific States



**The changes identified in this summary document are further explained in various engineering reports prepared by Integration/HR/HC.**

- Cost Estimate TM discussing Value Engineering components:  [HR Feasibility Cost Estimate TM.pdf](#) (see PDF page 27 of 246).
- Draft Feasibility Report:  [Admin Draft Sites Reservoir Feasibility Report.pdf](#) (see PDF page 15 of 906).

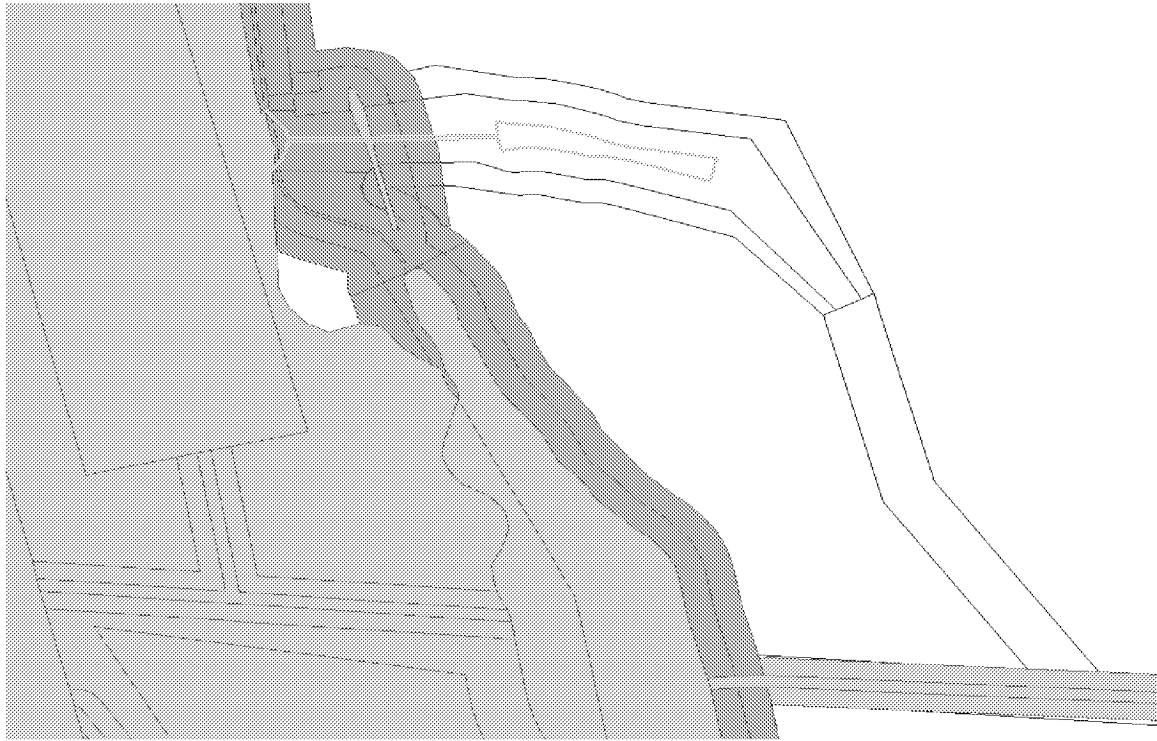
**Additional Information:**

- The feasibility reports only considers the cost of the project.
- There are no drawings (and there will be no drawings) of these changes for the Final EIR/EIS.
- These project components will not be fleshed out until preliminary engineering (36-month assumption for amendment 3) and after gathering Geotech information starting summer of 2022.
- Engineering needs the geotech information before can advance any design components beyond where they currently are.
- 30% design will not be completed until late 2023/2024 timeframe.

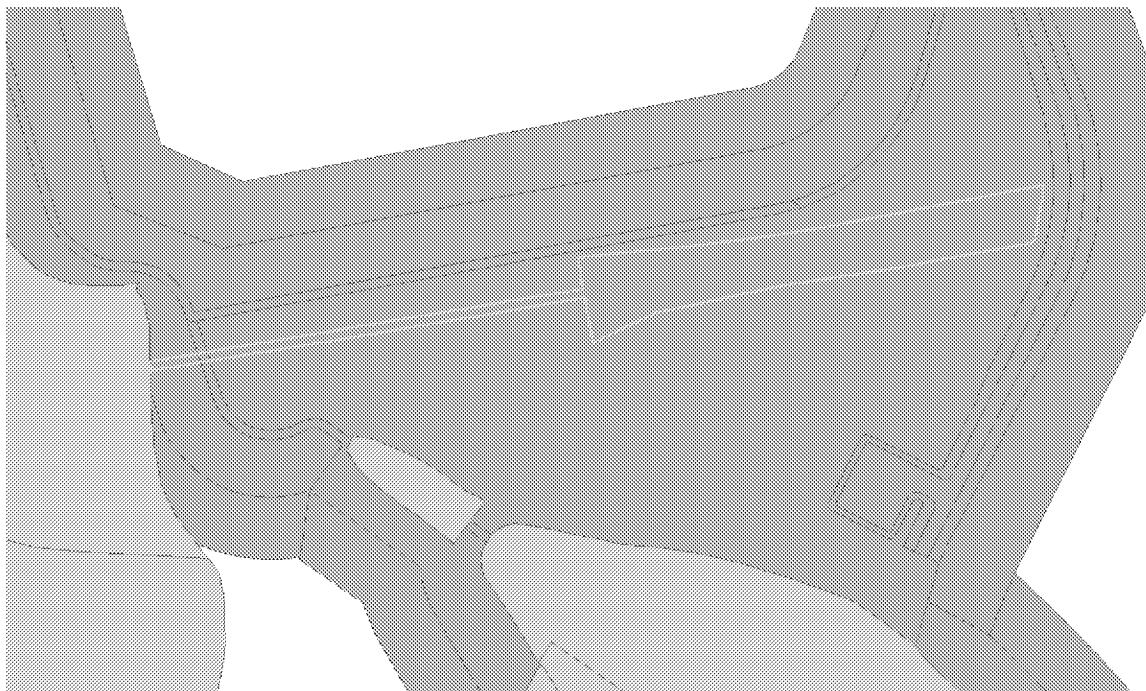
**Potential Facility/Footprint Changes:**

1. **Saddle dams & Emergency Release Structures: two emergency release structures identified in the EIR/ESI are eliminated**
  - a. Removal of these two emergency release structures eliminates flows to Hunters Creek and downstream agricultural lands.
  - b. Removal of emergency release structures will avoid flooding impacts in Hunters Creek and recognize cost savings to the project, also eliminates the footprint of the emergency release structures.
  - c. The footprints of the emergency release structures have been removed in ICF GIS files for Alternatives 1 and 3 based on ICF interpretation of structures (see two screenshots below).
  - d. All releases will be routed through Sites Dam and Stone Corral Creek (which is different than what was evaluated in the EIR/EIS)
    - i. Need engineering/ICF to provide confirmation of flows that can be accommodated by Stone Corral Creek (2,000 cfs on Stone Corral Creek, but could go up to the crest of the bank)
    - ii. Engineering identified that there would be water levels that might be a little bit higher in the Stone Corral Creek, but the area would still been inundated.

Sites Reservoir Project  
List of Potential Facility/Footprint Changes for Final EIR/EIS



ERS-1 is the blue outline from V1. In V3 ERS-1 has been removed, the green area has been deleted, and the area around the cutoff wall re-worked.



ERS-2 is the blue outline from V1. In V3 ERS-2 has been merged into the Saddle Dam 5 Multi-Purpose Use Area



- b. Potential to increase to 1,000 cfs or 2,000 cfs. If this is increased, this would result in a change to the footprint; presumably resulting in a larger footprint than what ICF currently has in GIS.
  - c. Integration/Authority needs to resolve this with the agency that proposed this before engineering does anything.
  - d. Assumption: Changes in environmental releases would not result in downstream improvements as part of the final.
5. **Huffmaster Road: reduction in the width of Huffmaster, reduction from 32 feet (ICF GIS) to 15 feet wide.**
- a. Shortened it and realigned it toward the south, shortened slightly where it connects back into Huffmaster Road.
  - b. This is only for Alternative 1 (no paved remains the same).
6. **GCID System Upgrades: Walker and Willow Creek Siphons – eliminating**
- a. Initial condition assessment by HC indicates the siphons may not require improvements; therefore, the engineering team did not include siphon improvement costs in the Feasibility Cost Estimate.
  - b. These will be eliminated in the Final EIR/EIS, unless conversations with GCID/TCCA indicate otherwise.
7. **TRR West: may become part of Alternative 1/Proposed Project**
- a. The team will know in January/Feb 2022 whether TRR West is going to be part of Alternative 1/proposed project.
  - b. If it is, it will be incorporated as such in the Final EIR/EIS (i.e., no longer part of Alternative 2).
8. **Any potential changes to infrastructure related to Colusa Basin Drain outfall or Sacramento Discharge Outfall**



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**From:** Janet T [gavelgoddess@gmail.com]  
**Sent:** 1/13/2022 6:17:35 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** We oppose the Sites reservoir project

We stand with the Native Americans who oppose the environmental damage that would be caused by the reservoir.

Janet and Mark Thew  
Loomis CA

---

**From:** Leland Frayseth [leland.frayseth@gmail.com]  
**Sent:** 1/13/2022 10:22:54 PM  
**To:** Samantha.Arthur@cwcc.ca.gov; Alexandre.Makler@cwcc.ca.gov; daniel.curtin@cwcc.ca.gov; Teresa.Alvarado@cwcc.ca.gov; Matthew.Swanson@cwcc.ca.gov; Kimberly.Gallagher@cwcc.ca.gov; fern.steiner@cwcc.ca.gov; jose.solorio@cwcc.ca.gov; cwcc@water.ca.gov; Shoemaker, Brianna@DWR [Brianna.Shoemaker@water.ca.gov]; amy.young@water.ca.gov; Cambra, Paul@CWC [Paul.Cambra@cwcc.ca.gov]; Yun, Joseph@DWR [joseph.yun@water.ca.gov]; Klopfenstein, Rachael@DeltaCouncil [rachael.klopfenstein@deltacouncil.ca.gov]; erik.erreca@deltacouncil.ca.gov; John Cunningham [john.cunningham@dcd.cccounty.us]; spalmer@zone7water.com; john@goldenstatesalmon.org; Bob Wright [bwrightatty@gmail.com]; Obegi, Doug [dobegi@nrhc.org]; Daniel Bacher [danielbacher@fishsniffer.com]; Scott Anderson [scotta@newsreview.com]; Rachel Murphy [rmurphy@ccwater.com]; Kennedy, Kellye J [kkennedy@usbr.gov]; Jennifer Allen [jallen@ccwater.com]; EIR-EIS-Comments [eir-eis-comments@sitesproject.org]; jciampa@lagerlof.com; rperea@lagerlof.com  
**Subject:** 5 years and 45 letters later the Los Vaqueros Reservoir debacle continues

Subject: 5 years and 45 letters later the Los Vaqueros Reservoir debacle continues

Dear California Water Commission (CWC) Commissioners, Los Vaqueros Reservoir Joint Powers Authority (JPA) Directors, Staff and the Public,

This is my 45th letter to the CWC. My first letter was March 2017. Ms. Shoemaker and Commissioner Curtin are the only ones on that letter that remain on the Commission today. Please add this public comment to the 19 Jan 2022 CWC meeting agenda under item 7 public comment.

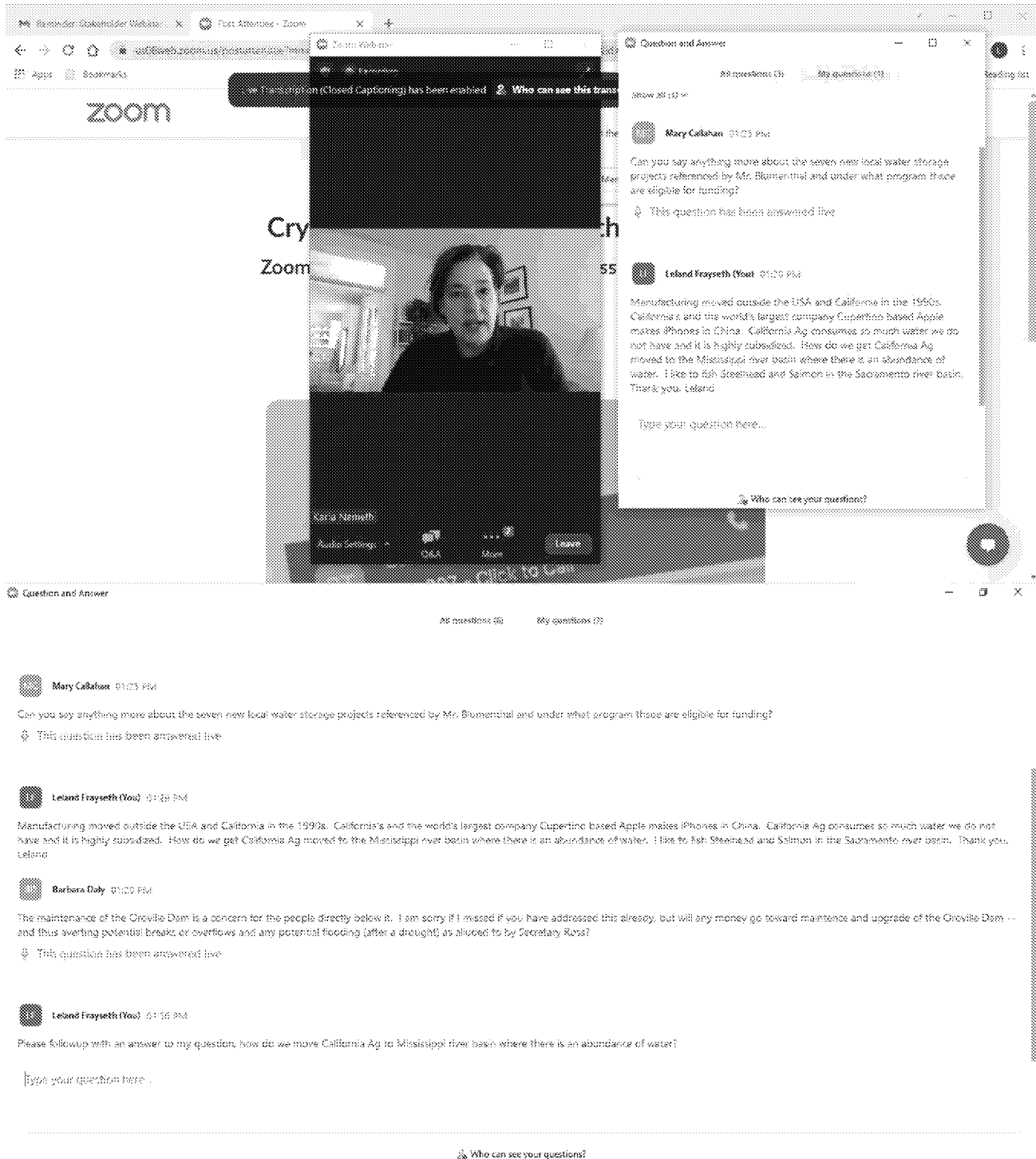
I watched the Dec 2021 meeting with so many public comments including me opposing Sites off stream reservoir continuing eligibility. A petition from Save California Salmon was presented to the CWC Commissioners with 50,000 signatures opposing Sites off stream reservoir. Commissioners unanimously approved Sites. I was devastated. I said I am missing something basic. I cast a wide net for public records of Form 700 Statement of Economic Interests to Natural Resources, Department of Water Resources, Fish and Wildlife, Fair Political Practices Commission and Los Vaqueros off stream reservoir JPA. Many of my public records requests bounced but I just put the requests back in the queue with another agency.

There are big farms on Form 700s so agriculture is represented including cannabis. There is not 1 fisherwoman or fisherman on Form 700s. I do not smoke or drink and I think too many people during the Covid lockdown have over indulged to the point where it is not healthy for them or our society so I am not a fan of water for grapes or marijuana. With the unreliability of rain and snow in California I think farmers should have the sense to know they need water to grow crops and hitch up their wagon and move to the Mississippi river basin and not let the Golden Gate hit them in the butt on the way out. I know there are a couple of Commissioners on the CWC with family farms that will read this but their trajectory is unsustainable. 50% of off stream reservoir dams paid for by the State and 25% by the Feds is wasteful. Farmers have overdrafted groundwater, settling has damaged their canals. I am not paying for canal repairs and the recent \$9 Billion water bond that failed shows the voters are not paying. Agriculture is 2.6% of California GDP. Apple, not the fruit, but the Cupertino company is the economic engine of California and the World and iPhones are made in China. Manufacturing left the USA in the late 1980s, Agriculture can move to the Mississippi river basin where there is an abundance of water today.

I provided public comment at the January 2022 Los Vaqueros Reservoir JPA Board Meeting and they convinced me they do not have their act together and that is going to be a huge waste of money. Their plan is to lop off the top 101 feet of the 2011 dam raise for the 160,000 acre feet expansion and cart all that debris to Cowboy Canyon, one of the arms to the reservoir. Gate 5 was stuck in 2011, CCWD knew about it then and the

most recent 2021 Division of Safety of Dams (DSOD) inspection shows Gate 5 could not be opened because they were worried they could not close it again. I found the JPA's Chair condescending, impulsive and out of control of her Zoom meeting. My woodworking and astronomy club meeting hosts can mute others without barking at them to mute themselves. I was on mute when my dogs were barking. It wasn't me.

I was invited to a webinar on California's budget surplus and Natural Resources \$750,000,000 ask of the legislature. The moderator did not ask my question for the panel but you can read it in this screenshot.



Thank you for reading my comments and happy 5 year anniversary to me.  
Leland Frayseth



---

**From:** Sandra Yarbrough [syarbrough@sitesproject.org]  
**Sent:** 1/14/2022 9:38:45 AM  
**To:** Marcia Kivett [MKivett@sitesproject.org]  
**Subject:** FW: Mail received at the Sites Office In Maxwell with comments about the project  
**Attachments:** Comments from Dolores Brannigan.pdf; Comments submitted by Trygve B. Slettland.pdf

Marcia,

This was the email I was mentioning with the mail that came in. Future I will just blind copy you like we talked about.

Sandra

---

**From:** Sandra Yarbrough  
**Sent:** Thursday, January 13, 2022 1:55 PM  
**To:** EIR-EIS-Comments <eir-eis-comments@sitesproject.org>; laurie.warner.herson@phenixenv.com  
**Subject:** Mail received at the Sites Office In Maxwell with comments about the project

I have attached mail that the Sites office received today regarding opposition of the Sites project.

Thank You,

Sandra Yarbrough  
Sites Project Admin  
Phone: 530.438.2309  
122 Old Hwy 99 West  
Maxwell, CA 95955  
Web: [www.SitesProject.org](http://www.SitesProject.org)

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JAN 13 2022

SITES PROJECT AUTHORITY

**Comments Submitted by Trygve B. Sletteland on the Proposed Sites Reservoir Project RDEIR/RDEIS, January 10, 2022**

Disclosure: These comments are edited by Sletteland from news story by Dan Bacher titled "Tribal Representatives Voice Opposition to Sites Reservoir, Lack of Consultation". Mr. Bacher specifically approved of this use of his story.

The California Water Commission ("Commission") on December 15 voted to approve its staff's findings to maintain Sites Reservoir's Project's eligibility for \$800 million of project subsidies from State of California Proposition 1, despite a multitude of comments by California Tribal representatives and environmental advocates *opposing* the project because of the devastating impact that they can prove it would have on fish, water, the environment.

If built, the Sites Reservoir ("Sites") would be situated on the west side of the Sacramento Valley; approximately 10 miles west of the town of Maxwell, in Glenn and Colusa Counties.

The Commission's vote on Sites means that this project is considered "environmentally and financially feasible" and continues to remain eligible for Proposition 1 funding, which is around \$2.7 billion, according to the environmental group Friends of the River.

Commission Chair Teresa Alvarado of San Jose, the Regional Vice President-South Bay/Central Coast for Pacific Gas and Electric Company, ran the Commission's meeting. Environmental justice and conservation groups and Tribal leaders were not only extremely disappointed with the decision, but upset with the treatment of California Tribal leaders at the meeting. "We're utterly appalled by how Shingle Springs Band of Miwok Vice Chair Malissa Tayaba was treated," said Sierra Club California organizer Caty Wagner. "Earlier in the comments, they said that they would call on Tribal elders first. Eventually, they cut commenters to 2 minutes rather than 3." This was done without proper explanation in the opinion of the Tribal elders. As Vice Chair Tayaba was speaking about how her Tribe has not been adequately consulted in the process, Commission Chair Alvarado spoke over her several times and then cut her off.

The Tribe's TEK program manager, Krystal Moreno, then addressed the situation, noting how Vice Chair Tayaba's position is akin to the Vice President of the United States, and finished reading Tayaba's comment. "This was incredibly disrespectful and appalling. There was no apology or even acknowledgment by the Commission about what just happened. I am floored by that behavior," Wagner stated. Below is the comment that Tayaba delivered at the meeting. She was forced to stop her commentary at the section, where, ironically, she was going to talk about the lack of Tribal Consultation, as required by state and federal law, on the Sites Project:

*"Good Morning Commissioners, thank you for the opportunity to speak. I am Malissa Tayaba, Vice Chair of the Shingle Springs Band of Miwok Indians. The Shingle Springs Band of Miwok Indians derives from both Miwok and Nisenan lineage with major village sites in Sacramento, the Delta and beyond. The Tribe's ancestral homelands span seven counties, including Sutter, Yuba, Yolo, Sacramento, El Dorado, Placer & Amador. The interconnectivity of the land, the waterways, the people, the plants, animals and resources is*

*deep, reciprocal, and timeless. The ancestral waterways are the life blood of the Tribe and include the Sacramento River, American River, Feather River, Bear River, Consumnes River and the watersheds therein.*

*The Shingle Springs Band of Miwok Indians were originally displaced by colonization, the mission system, disease brought by the fur trade, the arrival of John Sutter, the genocidal violence of the gold rush, the political violence of California statehood and anti-Indian laws and policies. Delta ancestral homelands were lost to reclamation and colonization in the nineteenth century, and we have been kept out by private land ownership and state and federal water resource development in the Delta region.*

*The Delta is a diminishing resource that once stretched at least as far north as the confluence of the Sacramento and Feather Rivers in Sutter County (near the Nisenan village of Wallok). It is being further diminished, along with its cultural and traditional resources that tribes have utilized from the Delta for food, medicine, transportation, shelter, clothing, ceremony and traditional lifeways from the beginning of time. Additional diversions from the Sacramento River watershed will exacerbate an already damaged and diminishing Delta ecosystem and estuary, and our tribe's ties to our homelands.*

*I am here today because your decisions regarding the Sites Reservoir have a direct impact on the health, life expectancy, and future of our tribe. Our waterways must be managed holistically.”*

After several more speakers, TEK Project Leader Krystal Moreno was able to read the final paragraph of Tayaba's presentation. Before reading it, Moreno said, "I was originally not going to make a statement, but after witnessing how inappropriately my boss and Vice-Chair of the Tribe was treated, I felt a statement was necessary. Earlier in the meeting you were going to take tribal representatives first, I believe, and provide them time to speak. You cut off Malissa Tayaba, who again is Vice Chair of the Shingle Springs Band of Miwok Indians. She is equivalent to the Vice President of the United States. She should have been allowed time to complete her statement. As a result, I will complete it for her."

Moreno then read the last paragraph regarding the lack of Tribal consultation on plans to fund and build Sites Reservoir:

*"In addition, true and meaningful tribal consultation has not occurred. In fact, my tribe was not consulted at all. In President Biden's November 12th memo heads of federal agencies and departments, he emphasizes the importance and intentions of advancing equity for indigenous people with commitments to ensure that federal agencies conduct 'regular, meaningful and ROBUST consultation' with tribes. To date, consultation efforts have been neither regular, meaningful, nor robust. We urge the commission to not move forward with this project. Thank You."*

Here is the link to the recording. Tayaba's statement is at 2:41:22 and Moreno's statement is at 2:48:24: <https://www.water-ca.com/archives.html>

Members of other California Tribes also indicated their opposition to the Sites Reservoir project because of the impact that it would have on salmon populations and native people. "The rivers are barely surviving," said Margo Robbins, a member of the Yurok Tribe on the Klamath River. "They can barely sustain life as it is. I would hope that you would take into

consideration the huge detriment that this will be to the salmon and native people. We have been working to restore flows to help water quality, and to bring salmon back over the dams and back to native lands for salmon survival and Tribal people,” explained Pit River Tribal member Morning Star Gali regarding Sites Reservoir in a press release by the environmental group Save California Salmon. “California is losing the salmon and our clean water. This is an issue of justice. We already have over a thousand reservoirs, and more water allocated than exists in California. This is called “paper water”! An environmentally destructive private reservoir being built in an area that is important to native people is a step in the wrong direction.”

The massive opposition to the project by one commenter after another was underlined by the submission to the Commission of a petition created by Save California Salmon -containing nearly 50,000 signatures - urging them to reject the proposed Sites Reservoir project.

Friends of the River (“FOR”), a Sacramento-based non-profit that has been engaged in tracking and opposing Proposition 1 funding for surface water storage projects since 2014, was also disappointed with the results of the commission meeting. “After having to deal with essentially the same destructive projects for decades, I found the Commission’s ‘rubber stamp’ approach during the meeting particularly concerning,” noted Ron Stork, FOR’s Senior Policy Advocate. “The Commission was given the authority under Proposition 1 to do a rigorous technical review of consequential water projects, and it was clear they were not willing to do so.”

In response to the Commission vote, Brandon Dawson, director of Sierra Club California, issued the following statement: “The Commission’s actions today will harm California communities, ecosystems, lands, and wildlife. These two destructive projects provide marginal public benefits but massive destruction, such as depleting salmon populations and flooding precious California lands. The climate crisis and its impacts on California water supplies demand that we move away from large storage projects like these, and start investing in local and sustainable water conservation, efficiency, and recycling programs and technology.

Even more egregious than the Commission’s vote was its rejection of the public comments opposing the project, and its treatment of tribal representatives who will be adversely affected by the project. Tribal members continuously voiced concerns about the lack of tribal consultation during the meeting’s public comment portion, and were resoundingly ignored. Every member of the public deserves the time and opportunity to voice their opinion without fear of being shut down.”

The 13,200 acres Sites Reservoir would include new water diversions from the Sacramento River that could also impact the Trinity River, the largest tributary of the Klamath River, according to Save California Salmon. The Yurok, Hoopa Valley, Karuk and other tribes have depended on the salmon and other fish as part of their livelihood and culture for many thousands of years, but the salmon populations have collapsed dramatically in recent years. The plan includes water storage for the Bureau of Reclamation, the agency that delivers federal Central Valley Project water to Westlands Water District, the major diverter of Trinity River water.

Sites could cause the Sacramento River and Shasta and Trinity Reservoirs to be over-drafted. Sites Reservoir would be used to divert more Northern California water to San



Joaquin Valley agribusiness for export crops like almonds through the Delta Tunnel when what is needed to restore fish populations is *more* water for fish, not less. For the past three years, no Delta smelt, once the most abundant fish in the entire Sacramento-San Joaquin River Delta, have been found in California Department of Fish and Wildlife's "Fall Midwater Trawl" survey. Two other surveys on the Delta have turned up similar results for the Delta smelt, with only 1 (one) smelt captured between the two surveys. "This year's results indicate that Delta smelt are likely virtually extinct in the wild," said California Sportfishing Protection Alliance fishery biologist Tom Cannon.

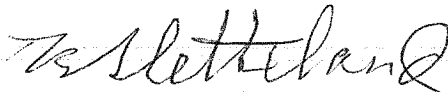
The virtual extinction of Delta smelt in the wild is part of a greater ecosystem crash caused by massive water exports to corporate agribusiness interests in the San Joaquin Valley, combined with toxics, declining water quality, and invasive species in the Delta. The diversion and export of water for Central Valley agribusiness interests during a drought has also had a huge impact on imperiled Sacramento River fish populations, just as it has had on driving the Delta smelt to become virtually extinct in the wild. This year up to 98 percent of winter-run Chinook salmon juveniles in the Sacramento River perished as water was delivered to water contractors as the Bureau of Reclamation violated their own plan to only kill 80 percent of winter run salmon every day but one through the diversion season. Not only did nearly all of the winter-run Chinook salmon juveniles perish due to warm water conditions in the Sacramento River this year, but so did the majority of adult spring-run Chinook salmon on Butte Creek - over 14,500 of an estimated 18,000 fish - before spawning this year, due to an outbreak of disease in low and warm water conditions.

It is worth noting again that Commission Chair Teresa Alvarado of San Jose is Regional Vice President-South Bay/Central Coast for Pacific Gas and Electric Company, the company that is largely responsible for the fish kill by not releasing enough cold water from its hydroelectric facilities on Butte Creek to keep the majority of salmon alive until they spawned.

After the Commission's votes moving the project forward, FOR's Resilient Rivers Director Ashley Overhouse, emphasized, "While it was a setback, this is not the end. The Commission noted that 'this is just the beginning' and there is 'plenty of time before funding allocations.' We agree, and believe these projects will not hold up under more rigorous scrutiny. Friends of the River and our allies will continue to fight for healthy rivers and sustainable water solutions like water recycling and groundwater recharge in 2022. We must continue to engage with the Commission and other stakeholders to ensure our state achieves a resilient water future in the face of climate change," Overhouse concluded.

**Please keep me informed of any further action by the Commission regarding this project.**

Sincerely,



**Trygve B. Sletteland , Founding Executive Director, Sacramento River Council (now part of Sacramento River Preservation Trust)**

**P.O. Box 256, Laguna Beach, CA 92652, (949) 376-7450, [tbsletteland@gmail.com](mailto:tbsletteland@gmail.com)**

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**From:** Angela Rex [westermid@hotmail.com]  
**Sent:** 1/15/2022 11:00:29 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Sites Reservoir

I am writing in opposition to the proposed Sites Reservoir. I live in Salyer, CA, and believe that water in Northern California needs to stay in the rivers to support healthy fish populations and ecosystems. We already have 5X the water allocated than exists in the Sacramento and Trinity rivers, Sites Reservoir will exacerbate this dilemma. This project would flood Three Creeks and degrade salmon runs that are already struggling.

I am also concerned with the harm and disrespect this project would have towards many of our indigenous communities, including the flooding of cemeteries and ceremony sites.

Further, I think that the \$816 million dollars of California taxpayer money should not be spent supporting dams that will be privately owned and degrade drinking water for those downstream.

Sites Reservoir is not a solution, it is the continuation of historical policy blunders and water mismanagement and a project that should be denied.

~Angela Rex  
PO Box 501 Salyer CA

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**From:** zoe mcbeth [z\_mcbeth@yahoo.com]  
**Sent:** 1/15/2022 1:04:34 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** No on sites reservoir

Hello, please don't allow sites reservoir to further damage the environment. California already has over 1400 reservoirs, or dams and 5 times more water is allocated than actually exists in the Sacramento and Trinity rivers.

---

**From:** Henry Roller [henry.j.roller@gmail.com]  
**Sent:** 1/15/2022 10:36:57 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Stop Sites Reservoir

Hello,

I am writing to provide a comment about the proposed Sites Reservoir off the Sacramento River.

I am strongly opposed to this reservoir. This reservoir would divert water from the Sacramento River, water which the river urgently needs for the ecosystem to keep functioning. The reservoir would have significant negative impacts on salmon runs, which are important to both Native American tribes and commercial fishermen. Additionally, the reservoir would likely result in decreased drinking water quality for millions of Californians.

California must place more emphasis on protecting the natural environment. Please stop Sites Reservoir.

Sincerely,  
Henry Roller

---

**From:** Katya Forsyth [forsyth.katya@gmail.com]  
**Sent:** 1/16/2022 11:31:48 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** STOP SITES RESERVOIR

Hello,

As a non-indigenous, white resident of Southern California, I want to express my opposition to the Sites Reservoir off of the Sacramento River. I have a Masters in Environmental Science and Policy from Northeastern University, and this is an ecological disaster. California's water shortages are only exacerbated by new dams and reservoirs, especially when one of their main functional purposes is to support wasteful and water intensive agriculture.

Additionally, the negative impact of this reservoir on indigenous land is both unconscionable, and highly disruptive to the state's goals of environmental sustainability. Indigenous communities and the salmon populations are incredibly important to regenerating the health of California's forests, which are suffering from poor management and years of fire suppression, aided by poor water management (which this reservoir would continue).

Thank you,

Katya Forsyth  
((310)648-4250

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**From:** Alicia Trider [aliciatrider@hotmail.com]  
**Sent:** 1/16/2022 12:07:45 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Sites Reservoir

I do not support the creation of a new reservoir, the Sites Reservoir. It is not needed and it is not in the best interest of all Californians. Please stop privatizing public resources like water. Water is life.

Thanks,  
Alicia Trider

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**From:** Diana Raynes [dianarayneswork@gmail.com]  
**Sent:** 1/18/2022 10:40:08 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Comment - Stop Sites Reservoir

Hi,

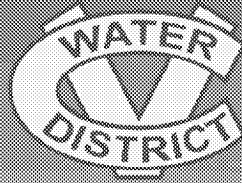
I am submitting a comment to voice the strong disapproval of the Sites reservoir. This reservoir would flood Native American cemeteries, ceremony sites, and three creeks. It would further degrade salmon runs which are an important source of food for tribes, a staple for commercial fisherman, and essential to the health of the river itself because there is no inclusion of protection for the Trinity River or Upper Sacramento River salmon in the proposal. In theory, these pumps are meant to divert and store “surplus” water in winter and summer months, but they would also increase diversions and that would later return as sun-warmed water increasing the river’s temperature causing further harm to the salmon.

California already has over 1400 reservoirs or dams and 5x more water is allocated than actually exists in the Sacramento and Trinity rivers. Sites would build new diversion pumps to take fresh water from the Sacramento near Red Bluff, and release polluted water to the delta. This will make vital drinking water quality worse for millions of Californians.

A recent report from U.C. Davis shows that over 45% of California salmon are facing extinction. Furthermore, the Klamath River is facing the worst salmon returns in history and wild Spring Chinook returns in the Klamath, Trinity and Sacramento Rivers last year numbered in the hundreds. No amount of short term economic benefit will outweigh the quick, swift, painful and expensive damage this project will cause.

Thank you,  
Diana Raynes

Sites Reservoir Project  
Third Amendment to 2019 Phase 2 Agreement



Board of Directors Meeting

March 8, 2022



## Requested actions

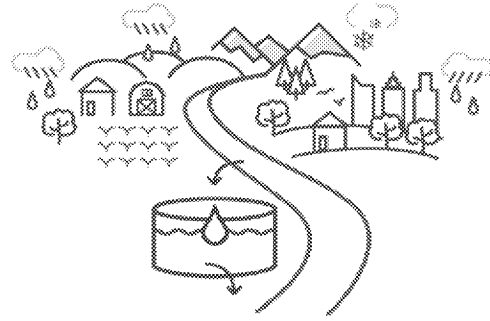
- ❑ **Authorize General Manager to execute Third Amendment to the Sites Reservoir Project 2019 Phase 2 Agreement**
  - ✓ *CVWD's participation in Phase 2 Agreement approved by Board on Jan 22, 2019*
  
- ❑ **Approve expenditure not-to-exceed \$4 million (M) for Amendment 3 tasks from January 2022 to December 2024**
  - ✓ *2022 - \$1 M*
  - ✓ *2023 - \$1.4 M*
  - ✓ *2024 - \$1.6 M*



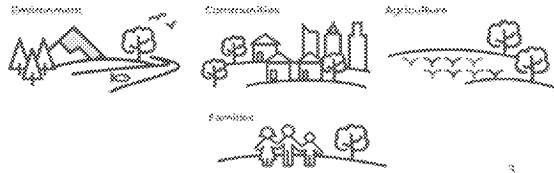
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# Project benefits

- Off-stream reservoir originally envisioned as part of State Water Project (SWP)
- Increases State's water supply resiliency
- Dry year water supply
- Provides environmental flow needs
- Adaptable to climate change
- Flood control and protection
- Recreational opportunities



Water from Sites directly benefits:



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© 2014 State Water Project

# Status of Sites participation



Carter Mutual Water Company | Colusa County Water District  
 Cortina Water District | Davis Water District | LaGrande Water District

Participants Include:  
**9** Sacramento Valley governing agencies  
**23** Reservoir Committee members

Participants Serve:  
**24.5+** million people  
**500,000+** acres of farmland

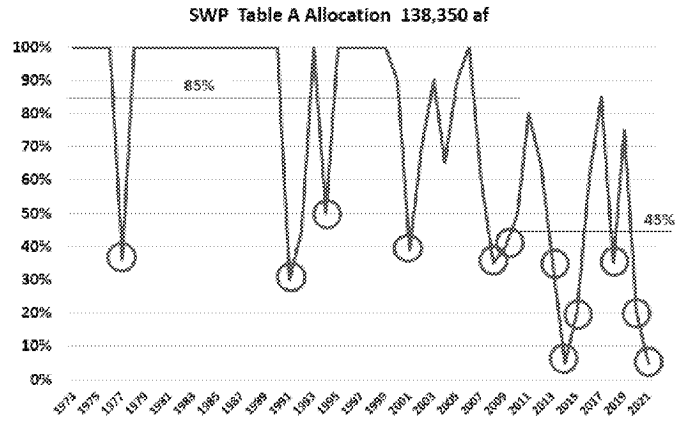


If we had Sites Reservoir in this 2021 drought year we estimate we would have nearly 1MAF of additional water for California's

# CVWD's need for Sites?

## Part of CV's water management plan

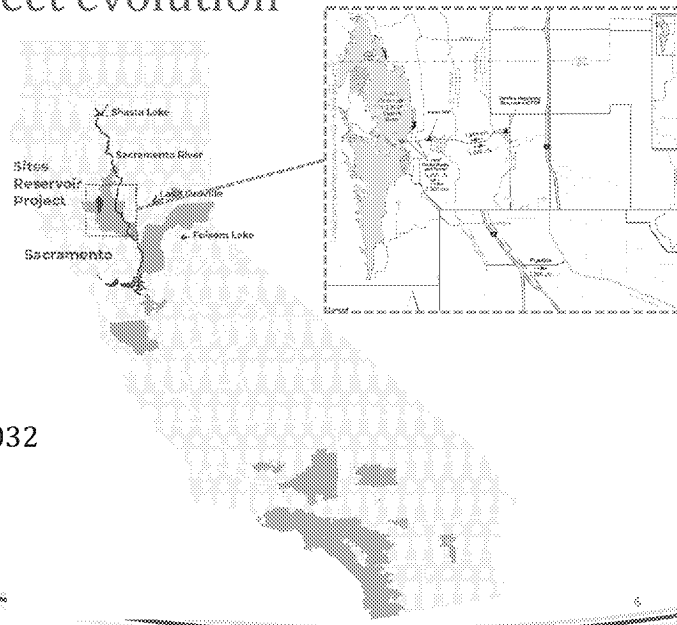
- State Water Project
  - ✓ avg annual reliability < 50%
- Colorado River
  - ✓ in drought conditions since 2000
  - ✓ total system storage < 40% of capacity
  - ✓ Drought Contingency Plan contribution
    - CVWD (up to 24,500 af)
- recycled water (regulations)
- conservation



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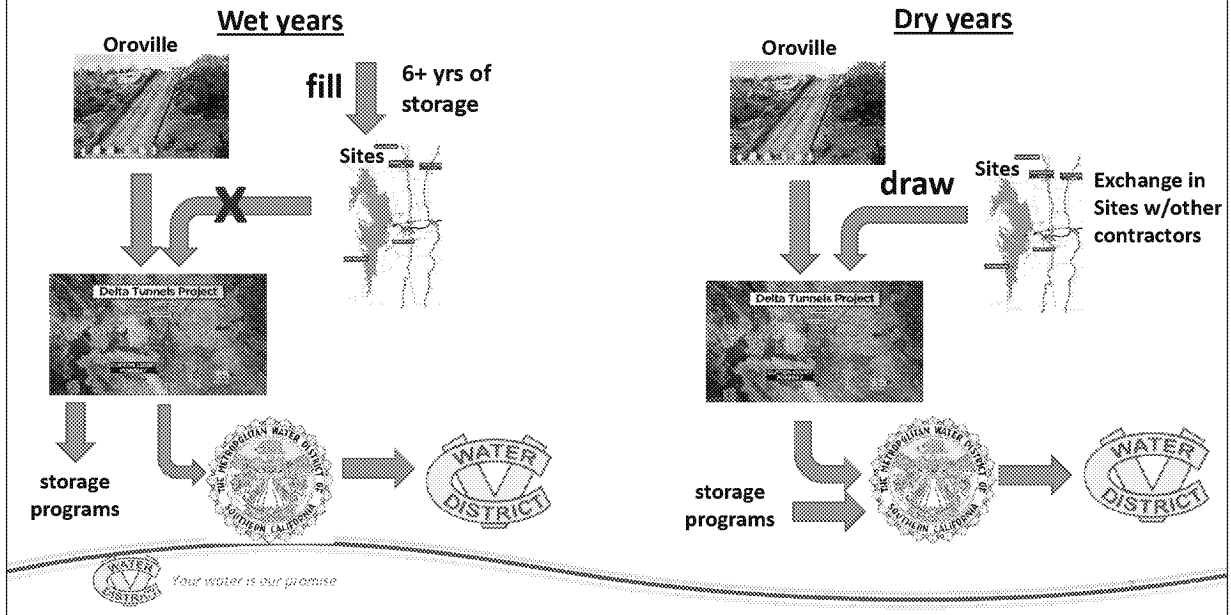
# Project evolution

- Original project (2017)
  - ✓ \$5.2 billion (B), 1.85 maf reservoir
  - ✓ ~250 taf for non-State, non-Federal participant demand
- Revised project (2020)
  - ✓ \$3.9 B, 1.5 maf reservoir
  - ✓ ~229 taf total participant delivery
- Construction starts after 2025
- First water to be delivered after 2032



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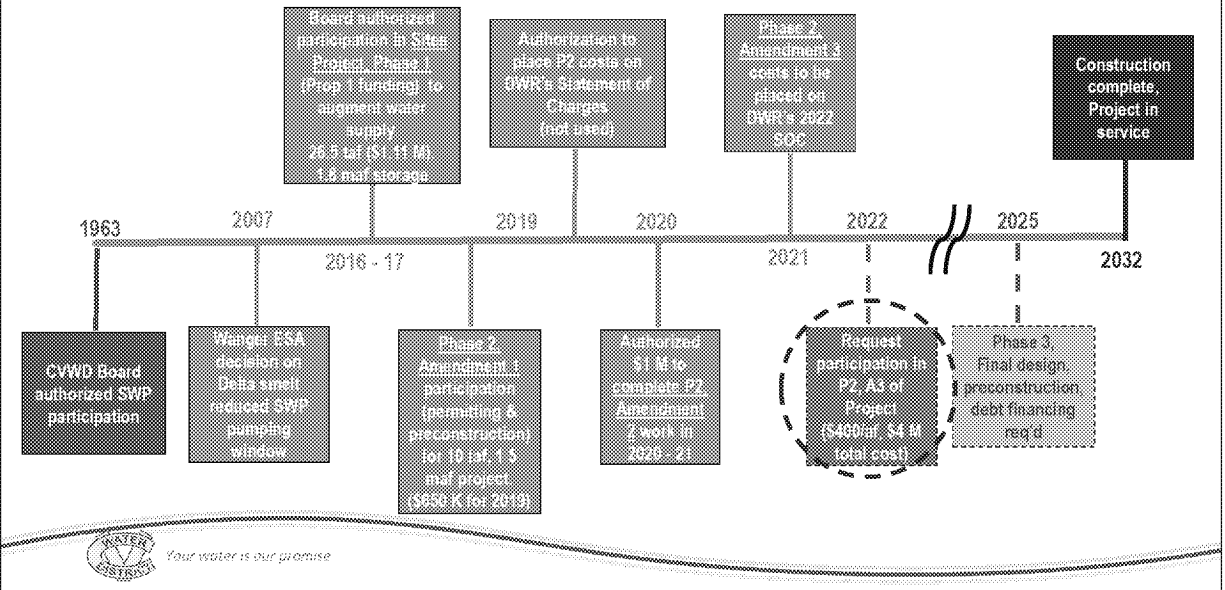
# How would CVWD use Sites?



## Site Project, by phases

Phase	Period	Activities	P2, Amend 2 (2020)	P2, Amend 3 (2022)
1	2015 - 19	Prop 1 funding applications, <del>leader selection</del> , final EIR/S (1.85 maf)	\$15 M	\$15 M
2 (Amend 2)	2019 - 22	Permits (1.5 maf), geotechnical studies, preliminary design, <del>early construction</del>	\$39 M	\$39 M
2 (Amend 3)	2022 - 24	Obtain permits, water rights order, finalize Prop 1, loan applications, 30% design, geotech evaluations, land acquisition master plan	\$3.0 B	\$143 M
3	<del>2023 - 24</del> 2025 - 26	Final design, right of way, begin construction management		\$3.72 B
4	<del>2024 - 32</del> 2027 - 32	Construction management & construction, begin operations		

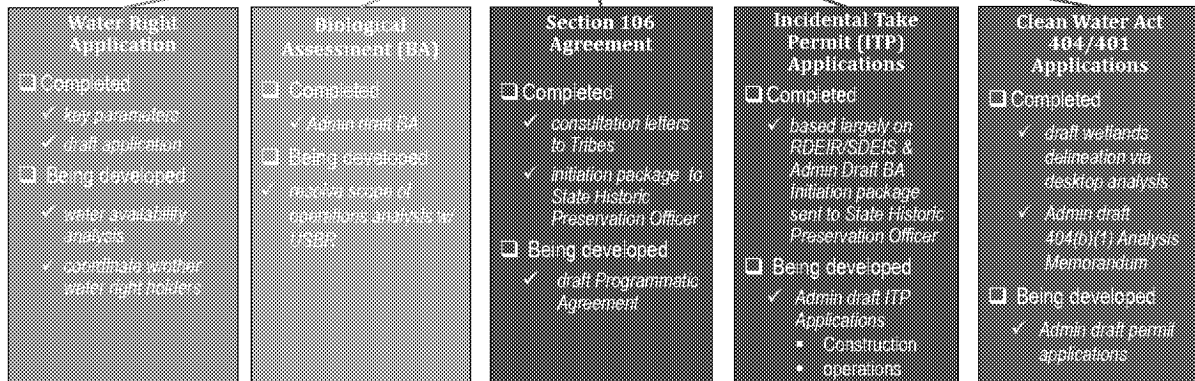
# CVWD's participation in Sites Project





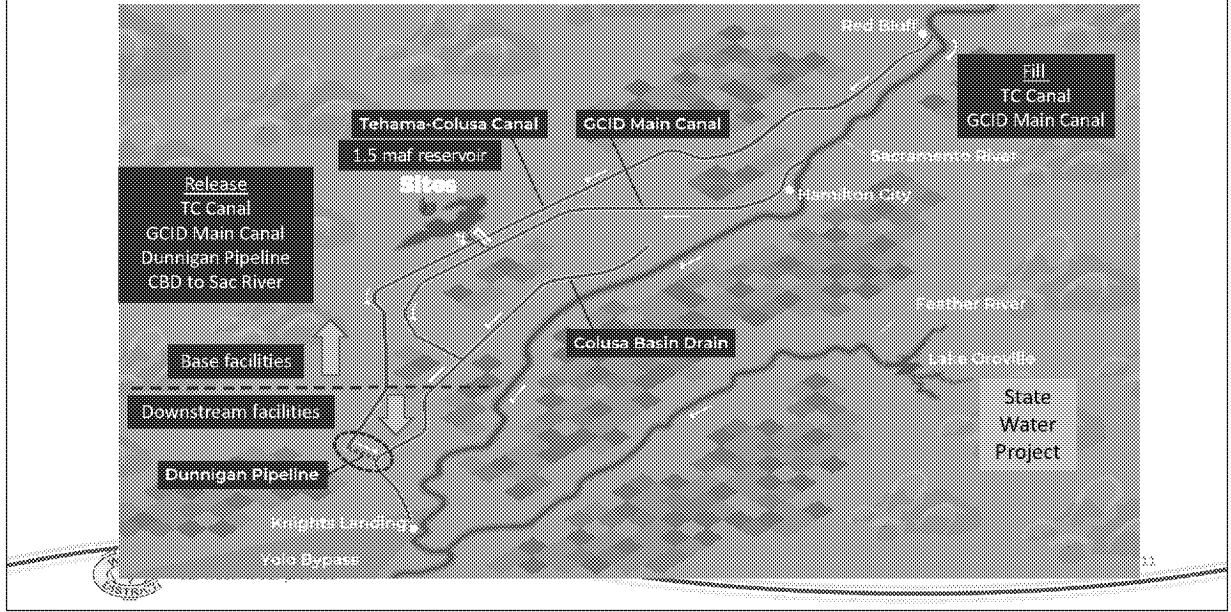
# Phase 2, Amendment 2 progress

## Key activities to date (2021)

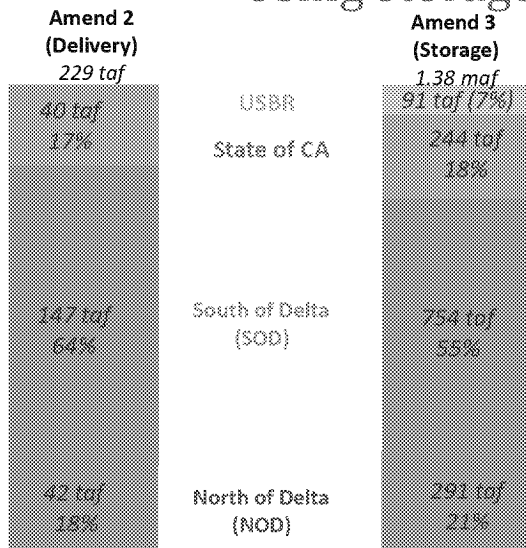


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# Current project uses existing infrastructure for fill & release



# Using storage as cost basis

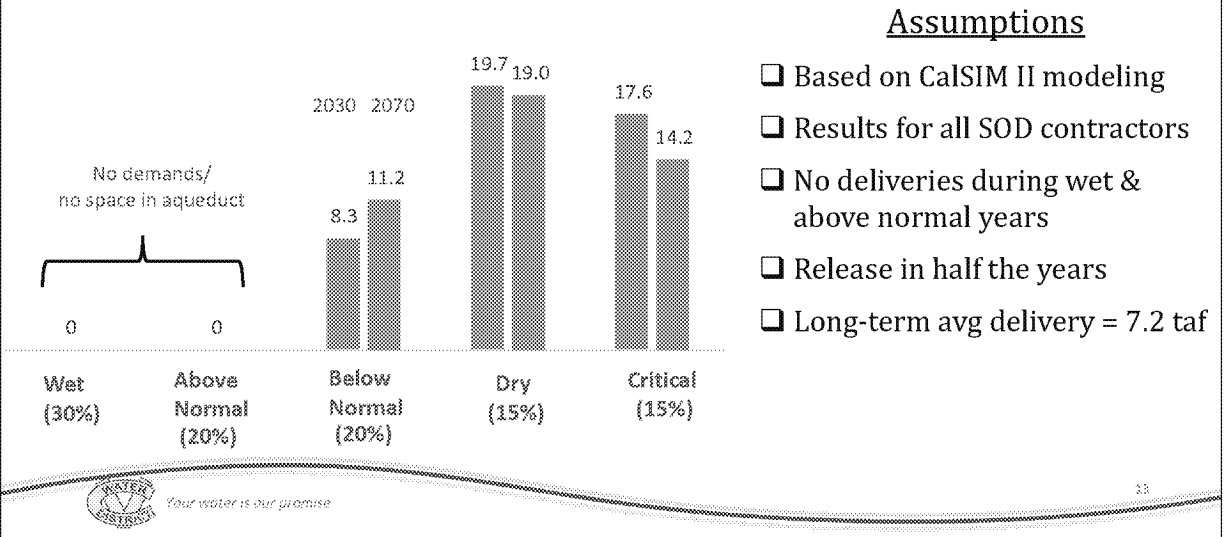


- Annual deliveries will be variable
- Change to asset-based cost allocation
  - ✓ SWP-like cost model
  - ✓ storage is an asset
  - ✓ total live volume = 1.38 maf
    - 120 taf for dead storage
  - ✓ each contractor has 6.23 x participation volume
  - ✓ Based on 10 taf of participation, CVWD has 62.3 taf storage
- Slight changes to cost contributions



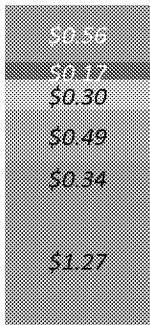
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# Simulated delivery patterns (2030 & 2070)



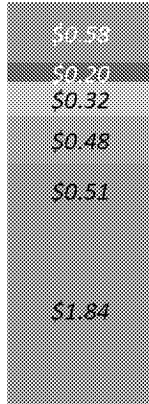
# Project cost changes (*\$B [2021]*)

**Amend 2**  
\$3.13 B



Environmental mitigation  
Transmission/switchyard  
Canals/conduits  
Pumping/generation plants  
Roads  
Reservoir/ Dams

**Amend 3**  
\$3.93 B



## Main cost changes

- Rates reflect current market conditions
- Reservoir/Dams (\$0.57 B)
  - ✓ aggregate for fillers & drains
  - ✓ waste removal/clean up/restoration
  - ✓ long-term dam monitoring
  - ✓ larger diversion for ecosystem related creek releases (new)
- Roads (\$0.17 B)
  - ✓ road length increase
  - ✓ rock slope protection (new)
  - ✓ additional access roads (new)



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# Project funding (\$B [2021])

**\$3.93 B**

Contractors \$1.26
WIFIA/Contractors \$0.60
WIFIA \$0.60
USDA \$0.43
WSIP \$0.24

Contractor  
payment (pay-go  
or bond sales)  
32%

20%

Federal  
low-cost loan

Federal  
low-cost loan

State grant



Bank line  
Bonds

**Current**

1.75%  
3.5%

2.38% - 3.5%

2.38%

3.875%

**Rates**

**Historical**

3%  
5%

3.5% - 5%

3.5%

3.875%

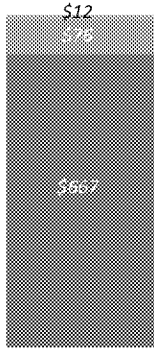


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# CVWD preliminary cost analysis

**Current interest**  
**WIFIA = \$1.4 B**  
 (\$685 - \$923/af)  
 (differing O&M costs)

Avg = \$755/af



O&M (variable)  
 O&M (fixed)

Debt service

**Historical interest**  
**WIFIA = \$0**  
 (\$846 - \$1,084/af)

Avg = \$916/af



## Cost drivers

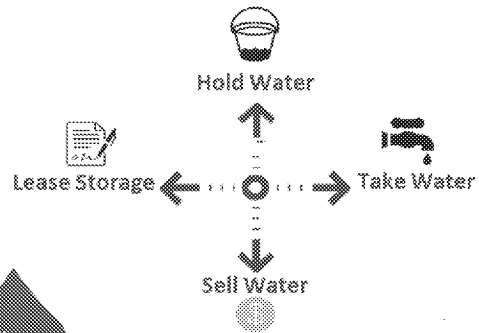
- WIFIA award (up to \$1.4 B)
- Contractor bonding
  - ✓ loan amount
  - ✓ interest rate (up to 5%)
- O&M
  - ✓ fill & release patterns
  - ✓ wheeling charges
  - ✓ power generation
- Delivery adjustment
  - ✓ may be  $\geq 20\%$  based on delivery patterns & Delta loss
- Transportation
  - ✓ SWP conveyance cost



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# CVWD – what do we get, what does it cost?

- ❑ 62.3 taf of storage
  - ✓ ability to manage storage space to meet CVWD's need
- ❑ Long-term delivery average = 7,200 af/yr
  - ✓ augment SWP
- ❑ \$179 M (2021\$) capital cost w/o debt service
- ❑ Paid to date ~ \$2.5 M
- ❑ P2, Amendment 3, not to exceed \$4 M
  - ✓ 2022 - \$1 M
  - ✓ 2023 - \$1.4 M
  - ✓ 2024 - \$1.6 m



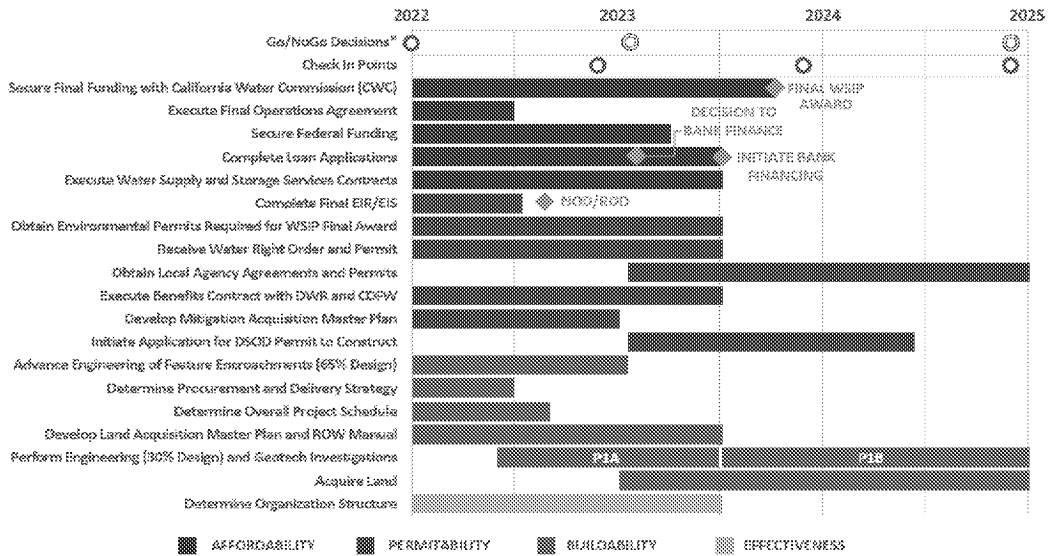
CVWD decides



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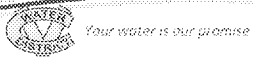
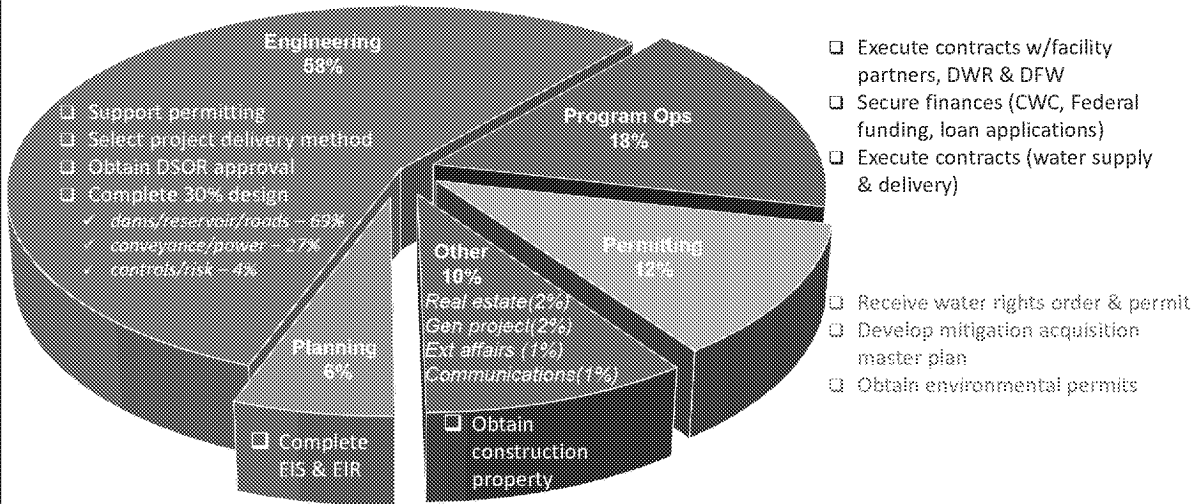


# Sites – Schedule



\* FINAL GO/NO-GO DECISION WILL ONLY OCCUR AT ONE OF THESE TWO POINTS PRIOR TO BANK FINANCING

## P2 Agreement, Amendment 3 key deliverables (*\$120 M effort*)



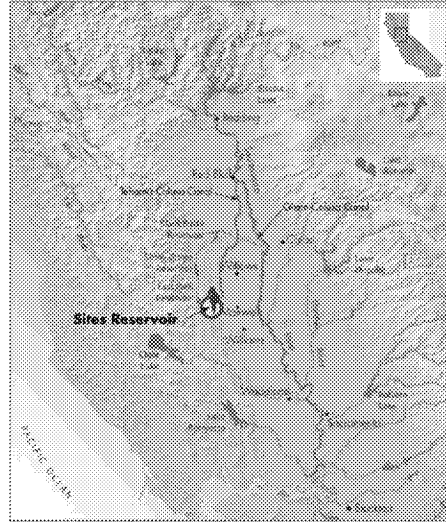
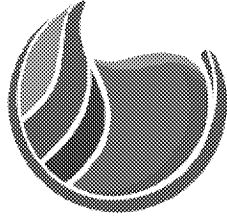
## Requested actions

- ❑ **Authorize General Manager to execute Third Amendment to the Sites Reservoir Project 2019 Phase 2 Agreement**
  - ✓ *CVWD's participation in Phase 2 Agreement approved by Board on Jan 22, 2019*
  
- ❑ **Approve expenditure not-to-exceed \$4 million (M) for Amendment 3 tasks from January 2022 to December 2024**
  - ✓ *2022 - \$1 M*
  - ✓ *2023 - \$1.4 M*
  - ✓ *2024 - \$1.6 M*

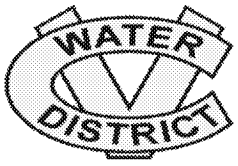


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# Questions



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COACHELLA VALLEY WATER DISTRICT  
AGENDA STAFF REPORT

Meeting Date: 3/8/2022

TO: Board of Directors

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SUBJECT: Third Amendment to 2019 Sites Reservoir Project Agreement

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FOR:  Action                       Public Hearing                       Ordinance  
 Presentation/Recognition                       Informational Report

**STAFF RECOMMENDATION:** *It is recommended that the Board of Directors:*

Authorize the General Manager to 1) execute the attached Third Amendment to the 2019 Sites Reservoir Project (Sites Project) Agreement, continuing the Coachella Valley Water District's (CVWD's) participation in Phase 2 from January 1, 2022 to December 31, 2024, and 2) authorize funding not to exceed \$4.0 million (M) for this period, based on CVWD's annual participation level of 10,000 acre-feet (taf).

**SUMMARY:** *This request consists of:*

In recognition of the need to secure additional water supply for the Coachella Valley, CVWD began its participation in the Sites Project after the Board authorization on January 24, 2017.

The Sites Project, currently sized at 1.5 million af (maf) at an estimated cost of \$3.93 billion (B, 2021\$) is divided into the following four phases:

- Phase 1: calendar years (CY) 2015 – 19, Funding/ Proposition 1 Application
- Phase 2: CY 2019 – 24, Final Environmental Impact Report (EIR), Final Feasibility Report, Permits, Water Rights, Full Operation Analysis, Secure Federal and State Funding, Preliminary Engineering, Land Acquisition
- Phase 3: CY 2025 - 26, Right of Way and Final Design
- Phase 4: CY 2026 - 32, Construction and Close-Out

Phase 1

Being included as part of the proposed solutions to the State's water supply challenges in Governor Newsom's 2019 Water Resilience Portfolio was a significant recognition of the importance of the Sites Project. Other Phase 1 accomplishments include receiving: 1) \$816 M from the Proposition 1 (Prop 1), Water Storage Investment Program (WSIP, administered by the California Water Commission), 2) \$449 M in low interest construction loan from the U.S. Department of Agriculture (USDA), and 3) \$6 M in federal grant through the Water Infrastructure Improvements for the Nation (WIIN) Act.



## COACHELLA VALLEY WATER DISTRICT AGENDA STAFF REPORT

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### Phase 2

The primary focus of this phase is engaging in preconstruction activities to ensure project success; this includes critically analyzing that the project's costs and benefits are aligned and that all attempts to reduce financial impacts are explored. The completion of the value planning process in April 2020 was a major step in this effort, which recommended a project reservoir size of 1.5 maf vs. the original size of 1.8 maf. The reduction in storage volume, with the additional changes in construction and the use of existing facilities allowed the annual subscription volume of approximately 229 taf to be met at a cost of \$3.93 B (2021\$) vs. \$5.2 B (2019\$).

The most recent Board authorization for continued participation was in 2020, at which time the cost estimate was approximately \$3 B (\$3.13 B [2021\$]). The change to the more recent cost of \$3.93 B is largely accounted by increases in the areas of reservoir/dams and roads, which include 1) increases in material and construction, 2) more accurate analysis of the geotechnical conditions and associated remedies, and 3) larger diversion for ecosystem-related creek releases, and 4) road-related costs (additional and longer roads, rock slope protection).

The completion of preliminary water delivery studies during this time confirmed that the Sites Project can provide more water in drier hydrology conditions and help improve water supply reliability for all participants. Other Phase 2 work progress include 1) finalizing the EIR (completed by December 2021 and in public review), 2) starting the process in securing water rights, 3) performing operational analysis for delivery patterns, and 4) securing State and Federal funding. These efforts are on-going and proceeding as planned.

Efforts to reduce the participants' cost-share focused on securing State and Federal funding, either through grants or low-interest loans. The efforts on State funding resulted in the receipt of additional \$20 M in Prop 1 money (for a total of \$836 M). Requirements to be satisfied by January 1, 2022 to retain Prop 1 funding include 1) completion of feasibility studies and draft environmental documentation issued for public review, 2) issuance of opinion from the California Water Commission that Sites Project is feasible, and 3) proof of funding commitment for 75% of the non-public (i.e., non-Prop 1) cost share. Sites staff have made good progress on these issues and are expecting these requirements to be satisfied by the deadline.

Federal cost contributions are also an important part of the financial affordability of the project, and an additional \$13.7 M was secured in grants through the WIIN Act (for a total of \$19.7 M). However, a decision was made to abandon the work activities to securing WIIN Act loans (originally estimated to be as much as \$1 B). A condition of this loan required the Sites Project to be in construction by December 16, 2021, which would have necessitated the unrealistic acceleration of multiple studies, designs, and permitting activities.

As an alternative to WIIN Act funding, use of the Water Infrastructure Finance Innovation Act (WIFIA) loans was viewed equally beneficial but without the more stringent requirements. The Sites Reservoir Authority submitted a Letter of Interest for a \$600 M low interest loan under this program, which is under consideration from the U.S. Environmental Protection Agency. Depending



## COACHELLA VALLEY WATER DISTRICT AGENDA STAFF REPORT

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on the outcome of the initial WIFIA funding phase, there may be future plans to secure an additional \$800 M in WIFIA loans.

A change to the participants' cost recovery model made in this amendment was the linkage to the storage volume (obtained by the product of the each contractors' annual participation level multiplied by a storage factor of 6.23). The storage volume allocated to CVWD is 62.3 taf., to be used in a manner that best suits the organization's needs. This is a similar cost recovery model used for the State Water Project, where in CVWD case the contract does not guarantee deliveries of 138,350 af each year, but provides the Department of Water Resources (DWR) the certainty that CVWD's share of the facility ownership costs to be able convey the maximum delivery is met.

As a result of these efforts, the annual cost for CVWD's participation is estimated to range between \$6.85 M to \$10.84 M (2021\$), which includes debt service and operations and maintenance [O&M]. The lower cost represents the potential to obtain up to \$1.4 B from WIFIA (with minimal O&M charges), and the higher cost represents no WIFIA funding (with maximum O&M charges). Based on CVWD's 10 taf participation level, the unit cost of water ranges from \$685 to \$1,084/af (all prices are north of Delta). It is recognized that the final delivered cost may be different as other factors including delivery patterns, potential losses through the Delta, and conveyance cost through the State Water Project will need to be included. Factors that might mitigate these issues include whether additional waters can be conveyed in wet or above normal years, operations of the Delta Conveyance Project and whether water can be exchanged in Sites Reservoir. The financial impacts on the delivered costs have not yet been completely quantified as these issues are being actively discussed and analyzed.

Additional tasks to be completed in Phase 2 to narrow the range and provide for more accurate costs include:

- Continue to secure Federal and State Funding
- Complete Final EIR/Environmental Impact Statement (EIS)
- Obtain environmental permits required for WSIP final award
- Advance engineering of project feature encroachments to 65% design level (in support of permitting)
- Complete preliminary engineering (30% design level) and Phase 1A/1B of Geotechnical Investigations
- Execute final operations agreement with Facility Partners, and Federal and State Agencies
- Receive Water Right Order and Permit
- Develop Mitigation Acquisition Master Plan
- Develop Land Acquisition Master Plan and ROW Manual
- Acquire land

It is anticipated that 36 months are needed to complete the Phase 2 work effort (Jan 2022 to Dec 2024), at a cost of \$400/af. For CVWD, the 10 taf of participation results in an additional total of \$4.0 M for fiscal years (FY) 2022 - 24 and allocated as follows (all are presented as not-to-exceed



COACHELLA VALLEY WATER DISTRICT  
AGENDA STAFF REPORT

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costs): \$100/af (FY22), \$140/af (FY23), and \$160/af (FY24). If the current request is approved, CVWD will have contributed \$6.5 M to the Sites Project since the start of participation.

**FISCAL IMPACT:**

The requested amount of \$1.0 M for FY22 is included in the FY22 Operating Budget, and future expenditures will be included in the appropriate year's operating budget if this request is approved.

**ENVIRONMENTAL REVIEW:**

No, this item is not a "project" as defined by CEQA; therefore, approval does not require any CEQA action.  Yes, see below.

**LEGAL REVIEW:**  Yes – Reviewed by Counsel  No – Not Applicable

**FIRM:** Redwine & Sherrill

Prepared by: Petya Vasileva  
Financial Analyst II

Submitted by: Robert Cheng  
Assistant General Manager

Approved by:

\_\_\_\_\_  
J. M. Barrett  
General Manager

ATTACHMENTS/1  
FILE: 0644.115  
PROJECT ID NO: N/A



**Will Sites Reservoir help increase water supplies in future droughts?**

Yes. Sites Reservoir is an insurance policy for future droughts. Sites Reservoir does not rely on snowpack and if the scientific projections are correct about the impacts of climate change (i.e. California is expected to receive about the same annual precipitation that it currently does but more will come as rain instead of snow), then having Sites Reservoir will mean we can safely collect more water in the reservoir for use during future droughts.

**Will Sites Reservoir divert water from the Sacramento River even during critically dry years?**

It depends. Even during drier years there can be significant precipitation events that present conditions where water can be diverted safely from the river and placed in Sites Reservoir. All diversions will be subject to the highly protective operating conditions that are currently being proposed and will ultimately be permitted by State and Federal regulatory agencies for the Sites Reservoir Project.

**Will Sites Reservoir decrease Delta flows?**

Yes, slightly, when the Project is diverting. However, since the Sites Reservoir diversions occur only when there are high river flows, any reduction to Delta flows would be minor and would not impact any of the beneficial uses of the water in the Delta. Storing water in Sites Reservoir during times when there is a lot of flow in the Sacramento River for use during times with the flows are low, including during drought periods, is part of the statewide strategy for adapting to changing climate conditions and to return much needed flexibility to the statewide water management system.

**Have concerns about the impact of Sites Reservoir operations on the environment been addressed in the current proposal?**

The Project operations have been modified substantially over the last two years to be more protective of the environment. These modifications have reduced the Project diversions from the Sacramento River substantially, in fact diversions have been reduced almost in half, as compared to the criteria proposed in 2017. The current Project operations strikes the needed balance between environmental protections and Project affordability that must exist for the Project to proceed.

**How much would have been diverted in 2021?**

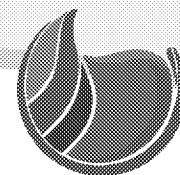
Zero diversions into the reservoir in 2021 would have occurred if Sites Reservoir would have been in place. This is in accordance with the highly protective operating conditions that are currently being proposed for the Project. However, the one million acre-feet estimate that would have already been stored as result of the wetter years in 2017 and 2019 is the water that would be available today. And if 2022 is another dry year it is estimated there could be approximately 400,000 acre-feet of that left in Sites. This water is badly needed addition to a severely depleted water supply system that was not built to address future climate.

**Is Sites Reservoir compliant with Proposition 1?**

Even with the Project changes that have occurred since the original award in 2018, the Sites Reservoir Project continues to provide the public benefits the California Water Commission conditionally approved for the Project in State Proposition 1 funding in 2018. The Project meets the Proposition 1 conditions and continues to meet all the feasibility requirements for investment by the State. In December 2021, the California Water Commission deemed the Project feasible.

**Who profits from Sites Reservoir?**

The Sites Reservoir Project is led by a Joint Powers Authority made up of irrigation agencies, water districts, cities, and counties in the Sacramento Valley area. The Project is being developed on a beneficiary pays principle which means that the benefits received are paid for by those receiving the benefits. The beneficiaries of the Project include the federal government, state government, and local public agencies. The water generated by the Project will be used for agriculture, meeting water demands of businesses and residents, and serving the needs of the environment throughout California.



**Is Sites Reservoir a private reservoir?**

No. Sites Reservoir is funded 100 percent by local, state, and federal public dollars. There are environmental, recreational and flood control benefits – as well new dry year water supplies secured for public agency ratepayers throughout California. Participation in Sites is broad and diverse, including the Bureau of Reclamation, State of California, urban areas of Southern California and the Bay Area, as well as public irrigation districts in the Sacramento Valley and San Joaquin Valley.

**How does the cost of water from Sites compare to other sources during dry years?**

The Sites Reservoir compares favorably to other dry year water supply alternatives which improves water affordability for Project participants and the 24 million users they serve, including disadvantaged communities. With water being one of California's most scarce and valuable resources, it is essential to develop a diverse portfolio of sustainable water supply solutions. But it is equally important for decision-makers and stakeholders to evaluate the most cost-effective options available to maximize the value of these investments. The Project has been designed to put the state's limited water resources to the best use in an affordable, flexible, and sustainable way.

**How can member agencies be assured that there will be water in Sites Reservoir if they are paying for storage?**

Sites Reservoir is a beneficiary pays project, which means that the benefits of the project go to those paying. Each participant (including environmental uses) has control over their portion of the storage space and a proportionate share of the water diverted into Sites Reservoir. There is flexibility in the timing and uses of the water, including for the environment. The assurance of water being in the reservoir is largely the result of the individual participant decisions in their operations of their portion of the facility. This way, each member is assured to receive what they pay for in a way that works within and complements that member's water supply portfolio.

**Why has it taken so much time to get Sites to the finish line?**

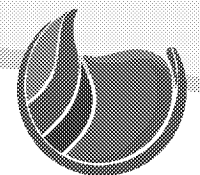
Sites has been around for decades with efforts originally being led by the California Department of Water Resources and the Bureau of Reclamation. The Project had starts and stops, as is typically seen in large projects led by the state or federal government. The Sites Project Authority was formed in 2010 to move the Project more expeditiously. Big projects take time and careful consideration, and the Authority has done that over the last decade and will continue into the future. Sites Reservoir is anticipated to be operational around 2030. The Authority has made great strides over the last two years to "right-size" the Project for affordability and permitability, two critical success factors. This represents a huge milestone for Project advancement and sets a turning point that makes the Project more feasible and more likely to be built than ever before.

**Why does this project make sense now, after 60 years?**

Many aspects of water management in California have changed in the recent decade that put the Sites Reservoir on the fast track to completion. These changes include the implementation of the Sustainable Groundwater Management Act, the continued declining reliability of the state and federal water projects, increasing regulatory changes requiring diversification of water purveyors' water portfolios, and the need for water resiliency to address the inevitable uncertainty of the changing climate. Additionally, never before has California had a means to invest in storing water for the environment which was made possible with the overwhelming voter passage in 2014 of Proposition 1 making \$2.7 billion available for public benefits of water storage. Approximately 18% of Sites Reservoir is dedicated to delivering water for the environmental purposes as a result of Proposition 1 funds which, for the first time, creates an asset California's regulators can use to adaptively manage for the benefit of fish and wildlife.

**In hindsight, should this project have been built when originally contemplated, and if so what would be different today?**

Hindsight is always 20/20 and if Sites had been built decades ago the added flexibility it would have created would have been very beneficial for California water management over the years. From a more recent perspective, if California had Sites Reservoir in a dry year like 2021 it is estimated there would be close to 1 million acre-feet of additional water supplies available for farms, cities and the environment. Sites Reservoir diverts water in wet periods and stores that water for use in the drier times.



**Is Sites being built to send more water South?**

Sites is being built to provide resiliency, reliability and flexibility to the statewide water supplies for all of California to adapt to the impacts of climate change to the state's water management infrastructure. The new water created by the Project and the added flexibility that comes from being able to store water will improve and enhance water management throughout California.

**Is this reservoir a stand-alone, or does it work with other regional reservoirs?**

Sites Reservoir is uniquely located in relation to other major components of the state and federal water projects like Shasta Lake, Lake Oroville and Folsom Lake. Sites is complementary to these existing crucial elements of statewide water management and could act to extend the functions they serve by creating flexibility to adapt to changing river and Delta management conditions. For example, Sites can be operated in coordination with Shasta Lake to preserve and enhance cold water for endangered salmon in the Sacramento River. Or Sites could contribute to the increased fresh-water flow into the Delta during drier periods to assist with salinity management of this critical estuary. Sites would not compete for the water resources stored in these state and federal facilities but would increase the total amount of managed water in storage. With the uncertainty California water managers face in the next century, having the Sites Reservoir is a necessity for statewide water management.

**Does Sites Reservoir need new Delta conveyance?**

No. The project is not dependent on the construction of Delta tunnels. Sites Reservoir will function independently, with or without a new Delta conveyance system. The Draft Environmental Impact Report/Statement evaluates Sites Reservoir as a standalone project.

**Since Sites only receives water when there is "surplus" flow in the Sacramento River, how long is it projected now before the reservoir is full under "normal" precipitation patterns?**

In California water there is no "normal" water year. Based on 82 years of past hydrology analyzed using standard models and methods, it would take, on average, approximately five to seven years for the reservoir to fill completely on first fill. In contrast, in a single water year like 2016-2017 it would have been possible to fill the reservoir in one year. Similarly, if a string of dry years was to occur, it would take longer to fill, maybe as much 10 years. Surprisingly, there tends to be "surplus" flow in the river in all years. Even in dry and critically dry years, there would be filling opportunities, albeit fairly limited.

The original construction of Los Vaqueros Reservoir in Contra Costa County provides a real-life example of the possible variability in fill rates. The first fill of the 100,000 acre-foot reservoir was expected to take five to seven years. However, the first year of operation was 1997-1998, a fairly wet year of high-quality water being available at the intakes, which allowed the reservoir first fill to be completed in just two years.

**How much above the statistical normal for rainfall in the region does rainfall have to be for Sites to receive "surplus" water from the Sacramento River?**

Sites is designed to divert water through existing state-of-the-art fish screens only when actual flows on the Sacramento River exceed that needed by more senior water right holders, the Delta is in "excess" conditions, and based on stringent criteria to protect aquatic resources. Sites primarily diverts flows into the Sacramento River from streams and creeks downstream of Shasta/Keswick Dams. The exception is that Sites could pick up water that gets released from these dams under flood control conditions. The operations modeling typically conducted for water projects does not rely on rainfall statistics. Instead, model simulations (CalSim) calibrated to actual flow conditions for an 82-year period covering 1921-2003 are overlaid with current permit and operating constraints to evaluate with project conditions.

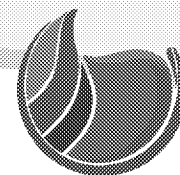


**How much above the statistical normal for rainfall in the region does rainfall have to be for Sites to receive “surplus” water from the Sacramento River? *(continued)***

The beneficial thing about this approach is that you can simulate future with climate change conditions which has been done for the Sites Project. The results of these with climate change simulations demonstrate that the performance of the project actually improves 5 to 10 percent with climate change. This is good for all of the project partners including the state and federal governments which are approximately 25 percent shareholders for environmental purposes.

**How will this project utilize and capitalize on existing infrastructure and what does that mean for the project footprint?**

Extending the performance of existing infrastructure is good public policy, good business practice and makes for a more sustainable footprint by reducing the environmental impact of the constructed work. The Project will utilize existing facilities and infrastructure to a great extent and the existing topography of the reservoir site itself is a natural bowl perfectly situated to accommodate a water reservoir. A significant portion of the 100+ miles of conveyance (canals and pipelines) involved in the Project will be existing facilities. The only new conveyance envisioned is the inlet/outlet works for the reservoir and the four miles of 10-foot diameter pipeline to convey water back to the Sacramento River between the Tehama-Colusa Canal and the Colusa Basin Drain.



**What are the environmental implications of this project?**

The environmental effects of the Project have been analyzed in detail in the Revised Draft EIR/ Supplemental Draft EIS. Transformational projects of the magnitude and importance of Sites are not without tradeoffs. There are specific elements of the Project that are critical to enhancing environmental conditions. First, the State has made a large investment, through the 2014 passage of Proposition 1, to enhance their ability to support critical aquatic needs. Second, there are opportunities to partner with the State and Federal water projects in coordinated operations that will enhance fishery protections associated with their operations. Beyond these enhancements, the Project itself is being designed to avoid and lessen any environmental concerns and, when necessary, provide appropriate mitigation. The Revised Draft EIR/Supplemental Draft EIS Executive Summary (available here [sitesproject.org/environmental-review](http://sitesproject.org/environmental-review)) summarizes the environmental effects that have been identified, including those that are significant and unavoidable.

**How much water will Sites take from the Trinity River? Or how will Sites impact the Trinity River?**

No water will be diverted from the Trinity River to fill Sites Reservoir. The unique location of the reservoir means the Project is not competing for other water resources. Instead the Sites Reservoir will be complementary to these facilities and enhance the ability to optimize the limited water resources. All water diverted into Sites Reservoir will come from the Sacramento River, primarily from the streams and creeks that flow into the river downstream of the Shasta and Keswick Dams, with the exception of extreme events where Shasta Dam is releasing water to avoid flooding in which case some of this released water may be diverted into Sites.

**Will the project harm fish species in the Sacramento-San Joaquin Delta?**

No. Sites Reservoir does not threaten salmon and other fish. In fact, there are highly protective operating conditions in place that must be in place before diversions into Sites Reservoir can proceed, including adapting to evolving conditions. In addition, the intakes being used for diverting water into Sites Reservoir include state-of-the-art fish screens that are proven to be highly effective at protecting fish. And, the current proposed project includes more cold water for salmon in the driest years when it is needed most. Not only is no harm done, but there is also a net benefit from this project to Sacramento River salmon, Delta smelt, and the Sacramento-San Joaquin Delta estuary.

**Has the Sites Project Authority analyzed and considered a comprehensive range of environmental mitigation and protections to support salmon and the Bay-Delta ecosystem?**

Absolutely, and there are a couple of specific elements of the Project that are critical to supporting environmental needs. First, the State has made a large investment in the Project through Proposition 1 to enhance their ability to support these critical systems. Second, there are opportunities to partner with the State and Federal water projects in coordinated operations that will enhance fishery protections associated with their operations. Beyond these enhancements, the Project itself is being designed to avoid and lessen any environmental concerns and, when necessary, provide appropriate mitigation.

**How does Sites address temperature management efforts for salmon protection?**

All species have varying needs throughout their lives. Suitable water temperatures for cold-water fish are important but not the only important component. They need food to sustain and grow along with places to take cover and rest while migrating to the ocean among other things. While temperature management alone does not meet all of the needs of cold-water fish, it is an important component.

Sites has been shown to have the ability to assist in the Bureau of Reclamation's temperature management efforts for salmon protection in the Sacramento and American River systems through water exchanges. The Bureau of Reclamation would establish the criteria for these exchanges through its temperature management planning which weighs risks and rewards of various potential protective actions. Sites is a potential tool for use in managing temperature but is not limited to serving this purpose only. Sites provides additional benefits to the environment, including assisting in providing stability for flows in the fall to reduce salmon redd dewatering, providing additional food resources for Delta smelt in the north Delta, among other existing and potential benefits. It would be shortsighted to conclude that the federal government should not invest in Sites based on conclusions about current temperature management efforts being less than optimal. The fact is that Sites creates new water supply for drier periods and flexibility to deal with uncertainty of climate change. Both of these attributes are beneficial to the environment and worthy of federal investment.

**Is Sites being built on native lands? How will it impact tribal people?**

Both the Sites Project Authority and the Bureau of Reclamation have consulted and will continue to consult with recognized Native American Tribes regarding impacts to Tribal people and resources. This is described in detail in Chapter 23 and Chapter 29 of the Revised Draft EIR/Supplemental Draft EIS. The Authority has reached out to over a dozen Tribes under Assembly Bill 52 and is in ongoing consultation under AB 52 with several tribes. There are Native American human remains and other tribal resources in the footprint of the reservoir and the Authority is working closely with the Tribes that historically inhabited the reservoir footprint to address impacts to these resources and ensure Native American human remains are addressed consistent with the Tribes' requests. As described in Chapter 29 of the Revised Draft EIR/Supplemental Draft EIS, the Project does not occur in an area that would affect Indian hunting or water rights nor is the alternative on Indian trust lands.

**Have Native American tribes been consulted?**

Yes. Both the Sites Project Authority and the Bureau of Reclamation have consulted and will continue to consult with recognized Native American tribes regarding impacts to Tribal people and resources. The Authority has reached out to over a dozen tribes under Assembly Bill 52 and is in ongoing consultation under AB 52 with several tribes.

**How were the RDEIR/SDEIS virtual public meetings announced?**

A variety of notification methods and channels were used to announce the virtual public meetings, availability of the RDEIR/SDEIS, and public comment period, including:

- Authority's Notice of Availability emailed to agencies, Tribes, NGOs, and interested parties
- Reclamation's Notice of Availability published in the Federal Register
- Press release disseminated to media outlets
- Notices posted to the Authority and Reclamation's websites
- Numerous Authority and Reclamation social media posts
- Advertisement published in eight local area newspapers
- Direct mailing to landowners and interested parties
- A series of email blasts to interested public members

To receive future project updates, sign up to be added to the Authority's email list here:  
[Contact - Sites Reservoir \(sitesproject.org\)](https://sitesproject.org).



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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/19/2022 12:42:37 PM  
**To:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Fisher, Linda [linda.fisher@hdrinc.com]  
**Subject:** FW: Ltr from Joyce-concerned citizen on Sites Project  
**Attachments:** 01-19-22 Ltr from Joyce re Comments on Sites Project.pdf

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Board Clerk <[boardclerk@sitesproject.org](mailto:boardclerk@sitesproject.org)>  
**Sent:** Wednesday, January 19, 2022 11:10 AM  
**To:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>  
**Cc:** Jerry Brown <[jbrown@sitesproject.org](mailto:jbrown@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Marcia Kivett <[MKivett@sitesproject.org](mailto:MKivett@sitesproject.org)>; Sandra Yarbrough <[syarbrough@sitesproject.org](mailto:syarbrough@sitesproject.org)>; EIR-EIS-Comments <[eir-eis-comments@sitesproject.org](mailto:eir-eis-comments@sitesproject.org)>  
**Subject:** Ltr from Joyce-concerned citizen on Sites Project

Hi All,

Received this today.

Yolanda Tirado, Board Clerk  
Sites JPA  
122 Old Highway 99W  
PO Box 517  
Maxwell, CA 95955

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**From:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Sent:** 1/19/2022 7:59:58 PM  
**To:** Heydinger, Erin [erin.heydinger@hdrinc.com]  
**Subject:** Fwd: Sites - Prop 1 Presentation  
**Attachments:** Sites\_Prop 1 Benefits Summary\_20211006.docx

Erin - see below and attached. Gokce did get back to me and asked that we share amounts without transportation losses. Is this something you can pull out? By water year type like in the attached?

Ali

---

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
aforsythe@sitesproject.org | www.SitesProject.org

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**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 19, 2022 12:38 PM  
**To:** Gokce Sencan  
**Subject:** RE: Sites - Prop 1 Presentation

Gokce - Thanks for the email. Attached is a document that summarizes the Project's Proposition 1 benefits and provides a summary table of ecosystem benefits by water year type. Note that the water year type estimates for the refuge deliveries are deliveries at the refuge boundaries – so there is more Prop 1 water but some is removed for transportation losses. The same is true for the Yolo Bypass water, but there are minimal losses for this use. The 2030 and 2070 results in the attached are using different climate change scenarios in the CALSIM modeling.

Does this help? Would it be more useful for you to have the attached without transportation losses?

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
aforsythe@sitesproject.org | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Gokce Sencan <sencan@ppic.org>  
**Sent:** Tuesday, January 18, 2022 2:53 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** RE: Sites - Prop 1 Presentation

Hi Ali,

I hope you are doing well. I have a quick question about the presentation that you shared with us a few weeks ago. In the presentation, it says that the Sites Reservoir is projected to provide 30-32 TAF/year to the Yolo Bypass, and it mentions that this is a long-term average flow. Similarly, the annual average refuge supply is expected to be around 20 TAF/year. My question is, are there any rules to these releases? For example, do you know how many times you would



provide the water, and at what volumes, throughout the project's lifespan? Or are these flows going to be provided consistently every year? We are just trying to get a sense of the environmental water supply frequency and the total water volume in the release years.

Thank you so much! I'm happy to answer any questions that you might have.

Best,  
Gokce

**Gokce Sencan**  
*she | her | hers*  
Research Associate  
PPIC Water Policy Center

PUBLIC POLICY  
INSTITUTE OF CALIFORNIA  
500 Washington Street, Suite 600  
San Francisco, CA 94111  
*tel* 415 291 4408  
*fax* 415 291 4401  
*web* [www.ppic.org](http://www.ppic.org)

*If you'd like to get emails about new Water Policy Center publications and events, please sign up [here](#).*

*Any opinions expressed in this message are those of the author alone and do not necessarily reflect any position of the Public Policy Institute of California.*

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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 3:15 PM  
**To:** Jeffrey Mount <[mount.jeffrey@gmail.com](mailto:mount.jeffrey@gmail.com)>; Gokce Sencan <[sencan@ppic.org](mailto:sencan@ppic.org)>  
**Subject:** Sites - Prop 1 Presentation

This is dated, but might be helpful.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/20/2022 4:25:06 PM  
**To:** Jerry Brown [jbrown@sitesproject.org]  
**Subject:** FW: Ecosystem Benefit Concept Paper  
**Attachments:** 1.22.21 Sites Ecosystem Benefit Concept Paper.docx

Here's Kristal's response to the paper. Kristal and I talked about this once and I think we decided that it was just too early to move this much further. So I don't think much ever came of this.

I plan to pick all of this back up as we get closer to submitting the Operations ITP application. We should talk at some point about what the storage project group is thinking.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>  
**Sent:** Friday, January 22, 2021 2:56 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** Ecosystem Benefit Concept Paper

Hi Ali,

Attached is a revised version of the ecosystem benefit concept paper. I look forward to hearing your thoughts and continuing to develop this paper with you.

Happy Friday!

Kristal

**Kristal Davis Fadtke**  
Environmental Program Manager  
Water Branch, Ecosystem Conservation Division  
California Department of Fish and Wildlife  
P.O. Box 944209  
Sacramento, CA 94244-2090  
Office: (916) 376-1987  
Cell: (916) 701-3226

**Sites Reservoir – Water Storage Investment Program Ecosystem Benefits  
Non-Binding Concept Paper  
January 21, 2021**

**Draft– For Discussion Purposes Only**

This Concept Paper is a statement of current mutual understanding. It is not intended to be legally binding, and does not constitute a binding contractual agreement. This paper does not commit the California Department of Fish and Wildlife (CDFW) or the Sites Project Authority (Authority) to a particular course of action. CDFW does not make any guarantee of or commitment to future project approval, funding, or contracting based on this document and reserves the right to comment and provide feedback on future environmental and planning documents.

**Purpose**

The purpose of this paper is to describe the understanding between the Authority and CDFW on the ecosystem benefits to be provided by the Sites Reservoir Project under the Water Storage Investment Program (WSIP). As required by the California Code of Regulations, Title 23 (Regulations) § 6014(a)(2), the Authority and CDFW will enter into a contract to administer the ecosystem benefits. Furthermore, the contract requirements are listed in the Regulations § 6014(a)(2)(A). This paper will continue to be modified to reflect the evolving understanding of how benefits will be provided and the role of the Authority and CDFW in administering those benefits. The concepts presented in this paper are for discussion purposes only. Also, this concept paper does not address the responsibility for operations, maintenance, and repair/replacement costs, which will need to be addressed as additional components are developed and added to this paper.

**Authority’s Role**

The Authority will allocate X AF (to be determined) of storage capacity in Sites Reservoir to the State of California, which is expected to result in a long-term average annual water delivery of X AF (to be determined) for ecosystem benefits. Annual water deliveries will vary based on a number of factors, including but not limited to, hydrologic conditions, water rights and other regulatory limitations, and delivery capacity limitations. The Authority will develop the necessary agreements to allow for the conveyance and exchange of water to locations where the ecosystem benefits are to be realized. The Authority will be responsible for determining the volume of water available annually and conveying the water to locations to be determined.

**CDFW’s Role**

As required by the Regulation § 6013(c)(2), prior to a final award hearing by the California Water Commission, CDFW will make a finding on whether the final benefits proposed by the Authority result in a net improvement to the ecosystem. CDFW will rely on the Final EIR/EIS, CESA authorizations, water right orders, and other environmental permits to support a finding.

For benefits found to provide a net ecosystem improvement, CDFW will identify the timing and volume needed for the ecosystem benefits based on the anticipated volume of water to be provided by the Authority. On an annual basis, CDFW will determine how best to allocate water between the Authority’s two ecosystem benefits. CDFW will work with the Authority to adaptively manage and ensure all ecosystem benefits receive water over the term of the contract.

## **Ecosystem Benefits**

1. Yolo Bypass Pulse Flow Benefit – As reflected in the Authority’s application to the CWC, the intent of this benefit is to provide pulses of water through the Yolo Bypass to increase food production for Delta smelt and increase food entering the north Delta. The application identifies an August through October window for releases and the delivery point as the Knights Landing Ridgecut with the water continuing through the system as Delta outflow. Coordination with DWR is expected to be needed for releases of this water back into the system. The capacity of the Colusa Basin Drain will need to be considered as the timing and volume of pulse flows are determined.
2. Incremental Level 4 (IL4) Refuge Water Supply – As reflected in the Authority’s application to the CWC, the Authority intends to provide water to refuges north and south of the Delta under the structure of the CVPIA Refuge Water Supply Program. The delivery point will be the Sacramento River if the Bureau of Reclamation (Reclamation) assumes responsibility for conveyance and delivery of water to refuges pursuant to CVPIA. If Reclamation does not assume responsibility for the conveyance and delivery of IL4 water, locations with viable conveyance options will need to be determined. The timing and volume of water to be delivered will consider the needs of the refuges or wildlife areas subject to receive water.

## **Flexibility in Annual Use of Environmental Water**

The Authority and CDFW recognize the value in having flexibility in the use of water dedicated to ecosystem benefits. CDFW may find value in allocating more water to one benefit over the other in a particular year to ensure that ecosystem improvements are realized. Additionally, CDFW recognizes that in any given year there may be limitations that restrict the Authority’s ability to deliver water toward an ecosystem benefit, including but not limited to conveyance constraints, delivery capacity limitations, and hydrologic variability. Thus, CDFW will consult with the Authority to allow annual water deliveries to be flexibly managed between the two ecosystem benefits, allowing the volumes of water delivered to vary annually between the two benefits. A process will be developed for how the use of environmental water is determined on an annual basis and ensures the Authority is meeting its long-term obligations under the public benefit contract.

## **Adaptively Managing Ecosystem Benefits**

An adaptive management plan will be included as part of the public benefit contract between the Authority and CDFW. As required by the Regulations § 6014(a)(2)(A), the adaptive management plan for the public ecosystem benefits will include monitoring metrics, locations, frequencies, and timing; metric evaluation methodologies and associated trigger levels; decision making processes; funding sources and financial commitments to implement the adaptive management plan, and other items deemed necessary by CDFW to facilitate adaptive management. The adaptive management plan will identify a process for any potential short and long-term changes in use of Sites Reservoir environmental water.



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# Reservoir Operations Plan

Version 1.0

January 2022

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- Attachment A. Sites Storage Partners
- Attachment B. Principles for the Storage, Delivery and Sale of Sites Reservoir Project Water
- Attachment C. Methodology for Allocating Reservoir Storage
- Attachment D. Modeling Assumptions for Participant Demands and Deliveries by Year Type
- Attachment E. Memorandum Identifying Modeled Criteria for Shasta Exchanges
- Attachment F. Memorandum Identifying Modeled Criteria for Oroville Exchanges

## Version History

Version	Description	Date of Revision
1	Final	1/17/22

## Acronyms and Abbreviations

Authority	Sites Project Authority
BiOp	Biological Opinion
CBD	Colusa Basin Drain
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
COA	Coordinated Operation Agreement
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
D-1641	Decision 1641
Delta	Sacramento-San Joaquin River Delta
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
GCID	Glenn-Colusa Irrigation District
HCPP	Hamilton City Pumping Plant
I/O	intake/outlet
MAF	million acre-feet
NMFS	National Marine Fisheries Service
NOD	North of Delta
O&M	Operations and Maintenance
PGP	Pumping Generating Plant
RBPP	Red Bluff Pumping Plant
Reclamation	Bureau of Reclamation
ROC on LTO	Reinitiation of Consultation on Long-Term Operations of the Central Valley Project and State Water Project
SCADA	Supervisory Control and Data Acquisition
SOD	South of Delta
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
TC Canal	Tehama-Colusa Canal
TCCA	Tehama-Colusa Canal Authority
TRR	Terminal Regulating Reservoir
WIIN	Water Infrastructure Improvements for the Nation
WSIP	Water Storage Investment Program

# 1.0 Definition of Terms

Key terms used in this Reservoir Operations Plan are defined below:

- ∞ **Active Storage** – That portion of Sites Reservoir above dead pool that can be exercised to create water supply-related benefits. The total maximum storage in Sites Reservoir is expected to be 1.5 million acre-feet (MAF). Firm dead pool storage, or the amount of water that cannot be effectively used, is expected to be about 60 thousand acre-feet (TAF). However, operationally another 60 TAF would likely be needed to prevent water quality issues in the storage releases. Therefore, the operational dead pool, or the minimum amount of water needed to maintain operational standards, is considered to be 120 TAF. For this plan, the active storage for Sites Reservoir is considered to be about 1.38 MAF.
- ∞ **CalSim II (CalSim)** – A generalized reservoir-river basin simulation model. The model used and presented in this document is the Reclamation/California Department of Water Resources CalSim II planning model that simulates the coordinated operation of the CVP and SWP over a range of hydrologic conditions. The model is run on a monthly timestep.
- ∞ **Contract Year** – Period from, and including, January 1 of each calendar year through December 31 of the same year.
- ∞ **No Action Alternative (NAA)** – The system modeled without construction of the Project. The modeled results for the NAA include the same regulatory environment/baseline as that included in the with-project modeling.
- ∞ **Sites Project Authority (Authority)** – A joint powers authority established to exercise powers common to the Authority Members to, among other things, effectively study, promote, develop, design, finance, acquire, construct, manage, and operate Sites Reservoir and related facilities such as recreation and power generation.
- ∞ **Sites Reservoir Project (Project)** – Dams, reservoirs, certain associated diversion and conveyance facilities, and other associated facilities, mitigation lands, and water right owned and operated by the Authority.
- ∞ **Project Releases versus Deliveries** – Project releases are defined as the amount of water that is released from storage. Project deliveries include estimated carriage losses in the Sacramento-San Joaquin River Delta and Yolo Bypass. No losses are calculated for local participant deliveries north of the Delta, thus releases are equal to deliveries for those Storage Partners.
- ∞ **Storage Allocation** – Amount of storage space (storage volume) in Sites Reservoir allocated to a Storage Partner, as agreed upon in that Storage Partner’s Sites Reservoir Benefits and Obligations Contract. Dead storage is not allocated to any Storage Partner.
- ∞ **Storage Partner** - The governmental agencies, water organizations and others who have funded and received a Storage Allocation in Sites Reservoir and the resulting water supply or water supply related environmental benefits from the Project. Storage Partners could include local agencies, the State of California, and the Federal Government (see Attachment A for a full list based on 2021 participation).
- ∞ **Water Year** – Period from October 1 through September 30.
- ∞ **Water Year Type** – Classified water year based on the Sacramento Valley 40-30-30 Water Year Hydrological Classification Index, in accordance with the State Water Resources Control Board (SWRCB) Water Year Hydrologic Classification, presented in D-1641.

## 2.0 Introduction and Approach

The Sites Reservoir Project (Project) is a proposed 1.5 million acre-feet (MAF) offstream reservoir located west of the community of Maxwell, California. The Project would use existing infrastructure to divert unregulated and unappropriated flow from the Sacramento River at Red Bluff and Hamilton City and would convey water to the reservoir. New and existing facilities would move water into and out of the reservoir. Releases from Sites Reservoir would be made to the Glenn Colusa Irrigation District (GCID) Main Canal and the Tehama-Colusa (TC) Canal. Releases to the TC Canal could be diverted for use or could flow farther downstream to either the Yolo Bypass via the Knights Landing Ridge Cut or back to the Sacramento River via the Knights Landing Outfall Gates and ultimately be exported through the Sacramento-San Joaquin River Delta (Delta) for use in and south of the Delta. Figure 1 and Figure 2 show the location of the Project and its facilities.

The Sites Project Authority (Authority) would own, govern, manage, and operate Sites Reservoir and related facilities. Organizationally, the Authority has established the Reservoir Committee to develop, through a partnership, both long-term and annual operational plans. The Reservoir Committee consists of Sites' Storage Partners, those entities and organizations that are funding and would receive water supply or water supply-related environmental benefits from the Project. For the purposes of this document, the term "Authority" collectively refers to the Sites Project Authority and the Reservoir Committee. The final roles and responsibilities of the Authority and the Reservoir Committee in the day-to-day operations of the Project have not been defined.

As defined in the Project's Revised Draft Environmental Impact Report (EIR)/Supplemental Draft Environmental Impact Statement (EIS) (November 2021), the objectives of the Project are as follows:

- ∞ Improve water supply reliability and resiliency to meet Storage Partners' agricultural and municipal long-term average annual water demand in a cost-effective manner for all Storage Partners, including those that are the most cost-sensitive.
- ∞ Provide public benefits consistent with Proposition 1 of 2014 and use Water Storage Investment Program (WSIP) funds to improve statewide surface water supply reliability and flexibility to enhance opportunities for habitat and fisheries management for the public benefit through a designated long-term average annual water supply.
- ∞ Provide public benefits consistent with the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016 by using federal funds, if available, provided by the Bureau of Reclamation (Reclamation) to improve CVP operational flexibility in meeting CVP environmental and contractual water supply needs and improving cold pool management in Shasta Lake to benefit anadromous fish.
- ∞ Provide surface water to convey biomass from the floodplain to the Delta to enhance the Delta ecosystem for the benefit of pelagic fishes in the north Delta (e.g., Cache Slough).
- ∞ Provide local and regional amenities, such as developing recreational facilities, reducing local flood damage, and maintaining transportation connectivity through roadway modifications.

This document provides a detailed description of the operations of Sites Reservoir (or Sites). Operations of the Project would be flexible and adaptable to meet a wide range of water supply and environmental needs. Version 1 of this Operations Plan includes the operations as they have been identified as of December 2021. All project facilities and modeling results included in this document refer to Alternative 1B, as identified in the Revised Draft EIR/Supplemental Draft EIS. As permitting and water right conditions are finalized, this Plan will be revised and expanded.

It is important to note the following for the reader:

1. This Version 1.0 of the Operations Plan is framed around Alternative 1B, the Authority's Preferred Project in the Revised Draft EIR/Supplemental Draft EIS. As the environmental review process has not yet been completed, the Preferred Project, mitigation measures that may be relevant to water operations, and the selection of the Preferred Project itself may change. This Operations Plan in no way binds the Authority to certain operations, mitigation measures, or the selection of the Preferred Alternative itself. This Plan will be adjusted and revised to reflect the final outcomes of the environmental review process in future versions.
2. The results of the modeling for Alternative 1B conducted for the Revised Draft EIR/Supplemental Draft EIS are used in this Operations Plan and are based on CalSim modeling and are included for illustrative purposes only. While these are valuable building understanding of the operations of the project, it is important for the reader to remember that CalSim modeling is based on monthly timesteps and historic hydrology. Actual daily operations may vary. Daily modeling will be developed in the future, and future versions of this Plan will be modified accordingly.

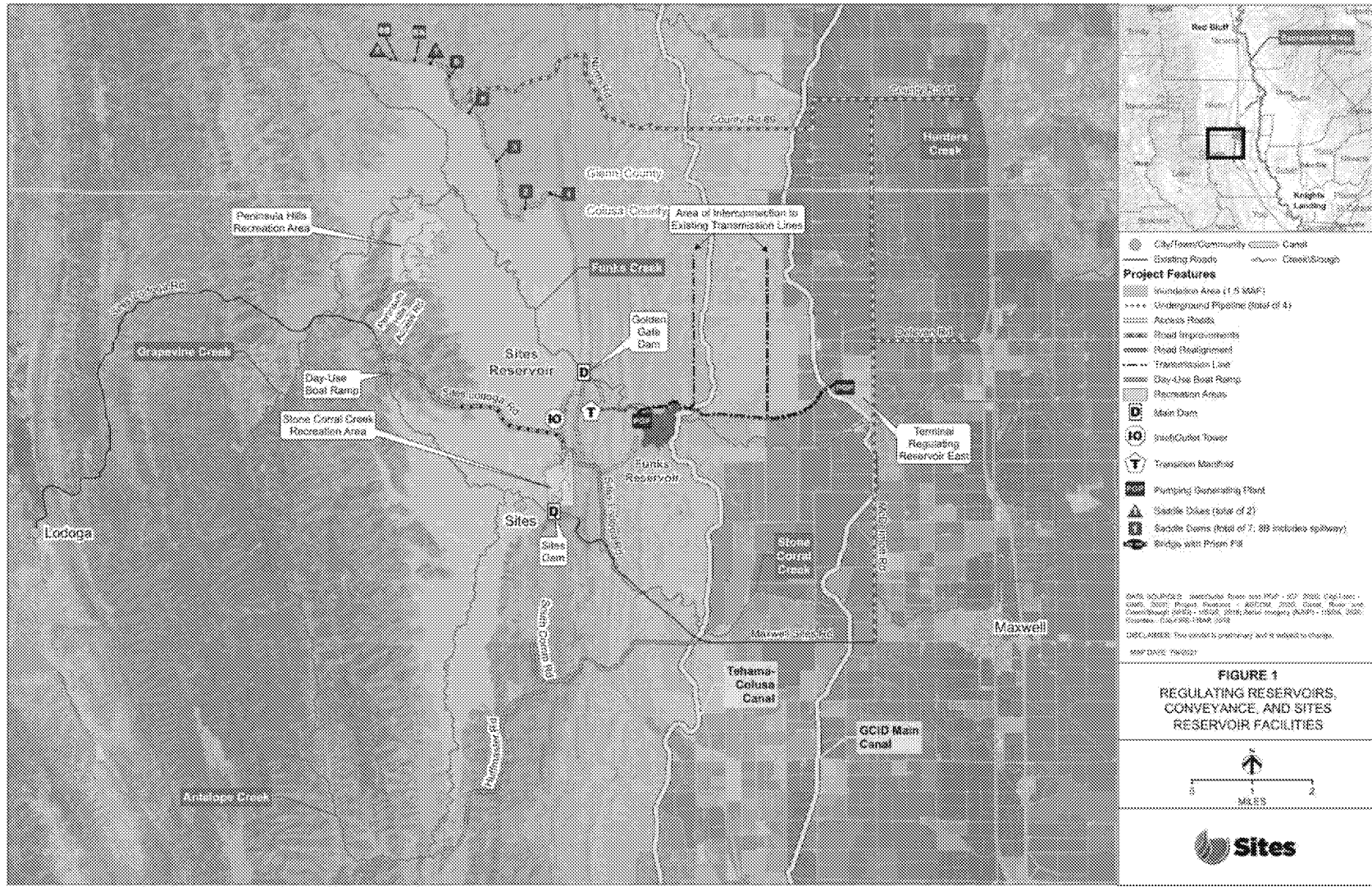


Figure 1. Regulating Reservoirs, Conveyance, and Sites Reservoir Facilities

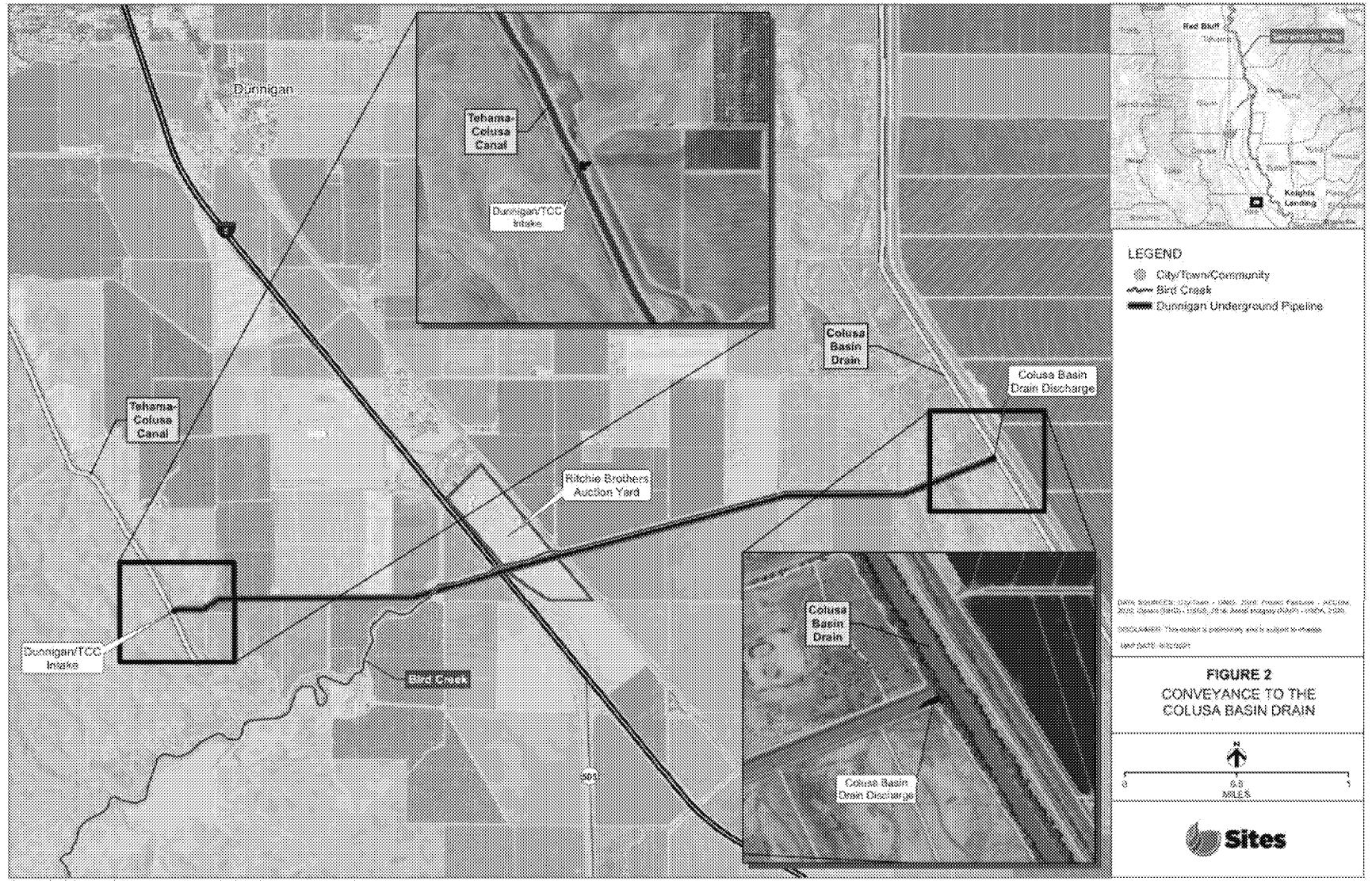


Figure 2. Conveyance to the Colusa Basin Drain

## 3.0 Operations Planning, Forecasting, and Accounting

### 3.1 Annual Operating Cycle

Figure 3 summarizes the annual operating cycle. The annual operating cycle depicts the timeline and requirements of components important to operations:

- ∞ Initial and final requests for releases from Storage Partners
- ∞ Timing of releases for north-of-Delta (NOD) and south-of-Delta (SOD) uses
- ∞ Timing of exchanges with DWR and Reclamation
- ∞ Coordination with TCCA, GCID, CDFW, and CBD entities

The annual operating cycle can be broadly divided into those times when the Project is diverting water, exchanging water (and releasing for NOD purposes), and releasing water SOD during the transfer window.



### January

- Initial requests for Sites water provided by participants for delivery or transfer
- Coordination with GCID and TCCA on diversions

### February

- Coordination with GCID and TCCA on diversions
- Final requests for Sites water releases before transfer window (further requests accommodated when possible)

### March

- Sites begins releasing water for DWR and Reclamation exchanges
- Coordination with GCID and TCCA on diversions
- Coordination with CDFW on Prop 1 water deliveries
- Some releases for NOD use

### April

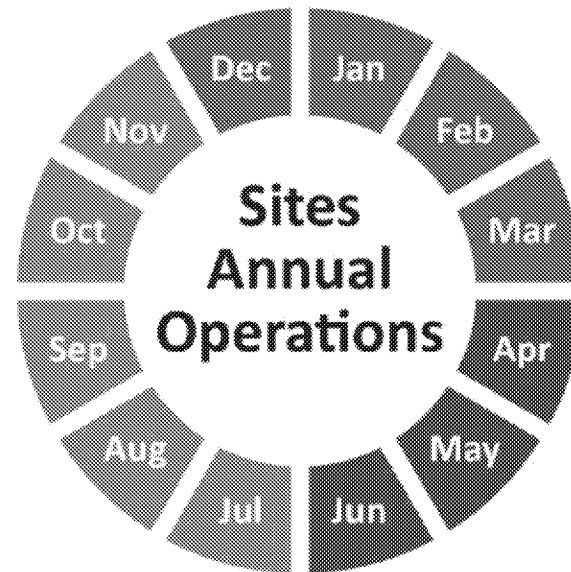
- Final requests for Sites water releases to SOD (further requests accommodated when possible)
- Releases for NOD purposes
- Coordination with CDFW on Prop 1 water deliveries

### May

- SOD participants notify DWR of final Sites requests for season
- Peak release month for exchange water
- Releases for NOD purposes
- Prop 1 water schedule finalized with CDFW

### June

- Peak month for water backed into Oroville and Shasta
- Releases for NOD use
- Carriage water costs determined (proposed)



### July

- Transfer window opens, SOD deliveries begin
- Water exchanged into Shasta and Oroville begins to release
- Key month: Coordination with TCCA, CBD, DWR on releases to river
- Coordination with Reclamation and DWR on exports
- Releases for NOD use

### August

- Exports for SOD use
- Yojo Bypass Prop 1 deliveries
- Key month: Coordination with TCCA, CBD, DWR on releases to river
- Coordination with Reclamation and DWR on exports
- Releases for NOD use

### September

- Exports for SOD use
- Key month: Coordination with TCCA, CBD, DWR on releases to river
- Yojo Bypass Prop 1 deliveries
- Coordination with Reclamation and DWR on exports
- Releases for NOD use

### October

- Exports for SOD use
- Continued coordination with TCCA, CBD, DWR, Reclamation on releases and deliveries
- Releases for NOD use

### November

- Last month for SOD exports
- Coordination with GCID and TCCA on diversions
- Releases for NOD use

### December

- Coordination with GCID and TCCA on diversions

Figure 3. Annual Operating Cycle

## 3.2 Forecasting

Forecasting will be used to estimate the amount of water available to each Storage Partner in a given year. Project-specific forecasts will initiate in February and will be updated weekly. Forecasts will use the best available technology at the time of operations. This could include the California Department of Water Resources' (DWR's) 50 and 90 percent exceedances for Sacramento River flows. Forecasting for diversions is discussed in Section 4.3. Forecasts for Project operations will also include coordination with the CVP and SWP.

## 3.3 Real-time Tracking and Accounting

A Project dashboard will be developed that will allow the Authority, its operators, and the Storage Partners to track real-time Project operations and accounting. The dashboard will include the following metrics:

- ∞ Project diversions at Red Bluff and Hamilton City
- ∞ pumping into Sites Reservoir from Funks Reservoir and the Terminal Regulating Reservoir (TRR)
- ∞ local inflows and outflows from Stone Corral and Funks Creeks
- ∞ storage account levels, including transferred or leased storage
- ∞ reservoir levels
- ∞ requested releases
- ∞ actual releases
- ∞ power use and generation
- ∞ deliveries to turnout or export facilities
- ∞ exchanged water and location (including spill or carryover of exchange water)
- ∞ estimated losses, including conveyance, evaporation, and carriage water

The real-time dashboard will have the ability to summarize data at various timesteps (e.g., instantaneous data, prior week, prior month, year-to-date).

## 3.4 Year-end Accounting

Following the final deliveries, year-end accounting and true-up will be prepared. Metrics will be provided to Storage Partners and may also be used in the annual water right report. It is anticipated that this report will include a summary of requested releases from storage, actual deliveries, and estimated losses, including spills (or carryover, if allowable) of exchange water in either Shasta or Oroville. The year-end accounting will be available to Sites Storage Partners as they make their requests for Project water the following year.

## 3.5 Periodic Synthesis Reporting

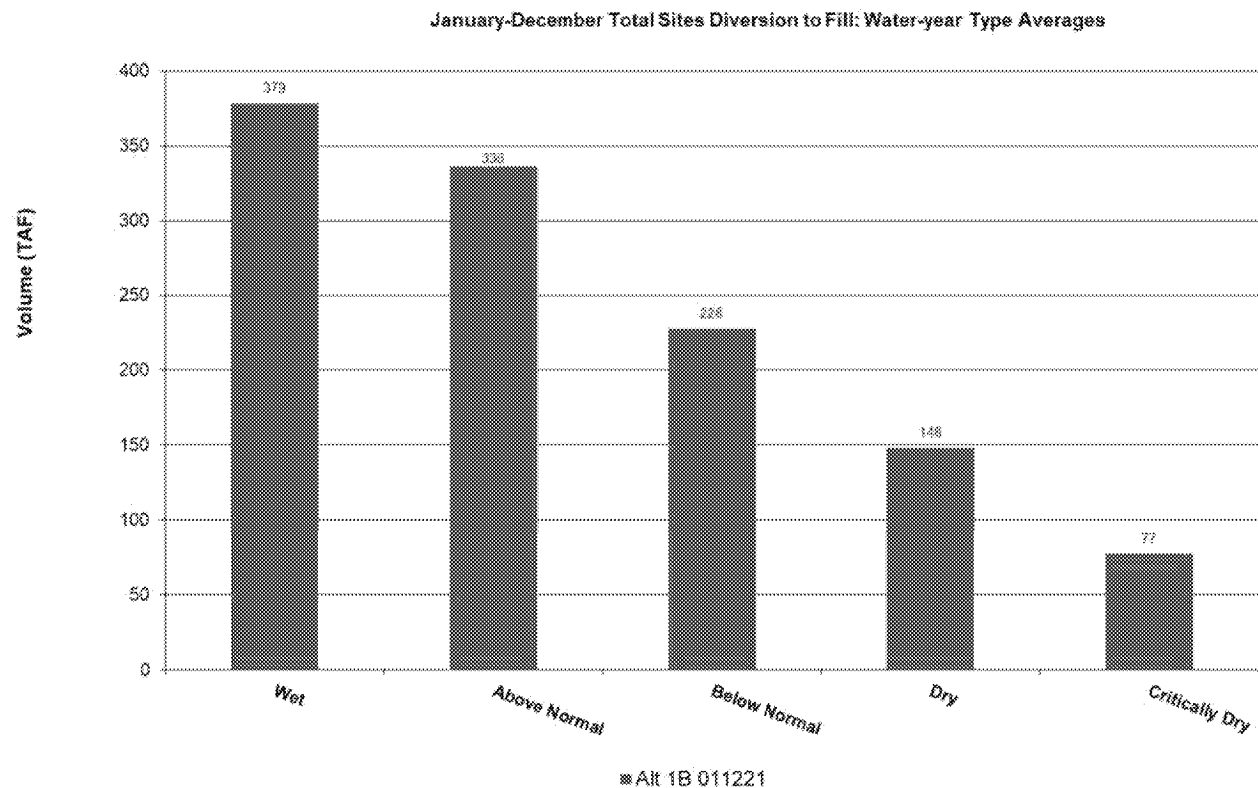
A synthesis report will be prepared by the Authority staff every 5 years, starting 5 years after initial operations of the Project. The synthesis report will evaluate the efficiency and effectiveness of Project operations, describe, at a minimum, challenges and opportunities that occurred over the prior 5 years of operations, and identify improvements to be implemented in the future, including potential changes to this Operations Plan. The Periodic Synthesis Report will incorporate feedback and assess satisfaction of the Storage Partners and operating partners (GCID, TCCA, CBD, DWR and Reclamation) with Project operations.

## 4.0 Diversions and Conveyance to Sites Reservoir

### 4.1 Overall Project Diversions

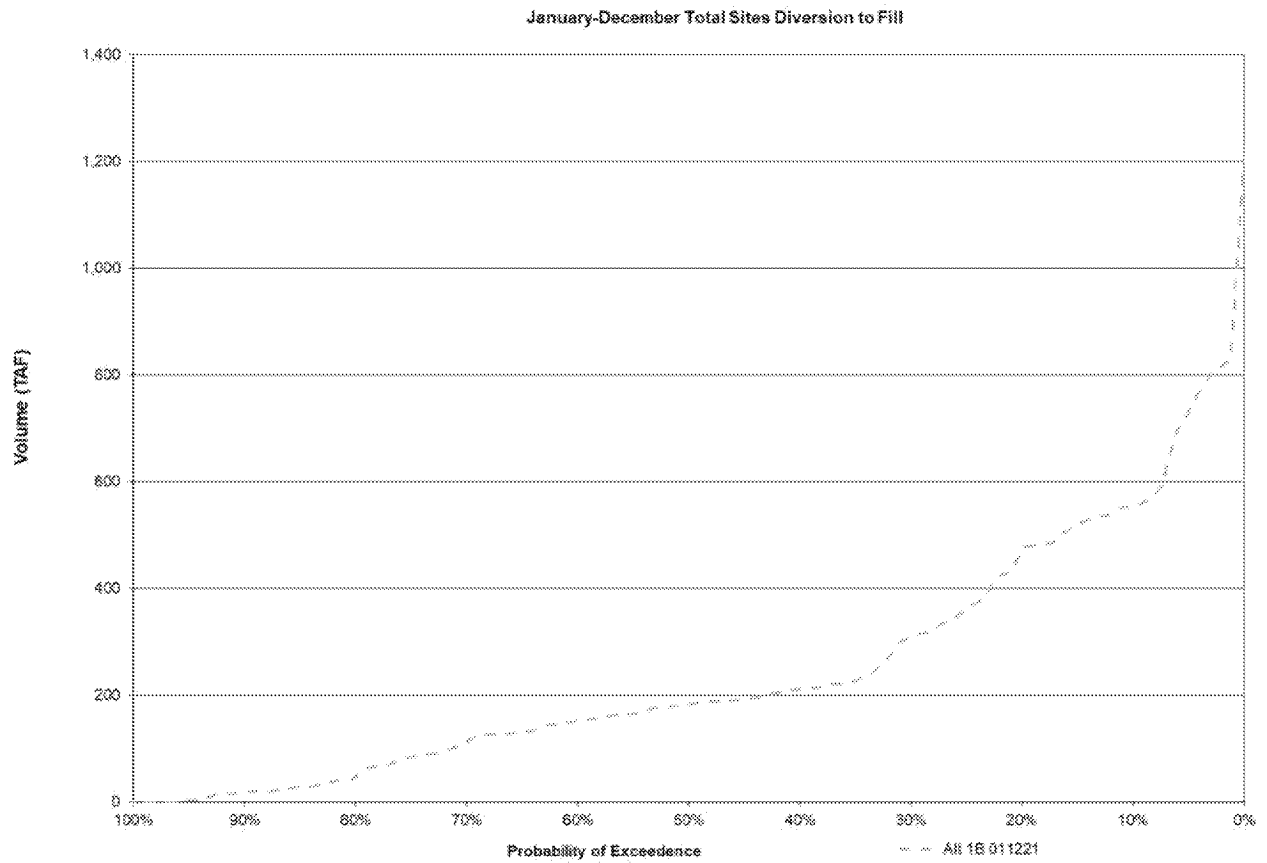
Project diversions would generally occur in the winter and early spring but could occur any time from October 1 through June 14. Project facilities can only be used to divert/fill or release from the Reservoir; simultaneous fill and release is not possible. In addition, and consistent with the expected Project water right, all water diverted under the Project water right must be placed into storage in Sites Reservoir and cannot be directly used (used for a beneficial purpose prior to being stored in Sites Reservoir).

The total diversions and timing for diversions based on the CalSim modeling conducted for the Revised Draft EIR/Supplemental Draft EIS are shown in Figure 4 to Figure 6. Figure 4 shows the total average diversions to Sites from the Sacramento River over the 82-year CalSim hydrology by water year type. Figure 6 depicts monthly averages; actual within-month diversions at the daily or weekly timescale are expected to vary. Daily modeling will be developed in the future, and future versions of this Plan will be modified accordingly.



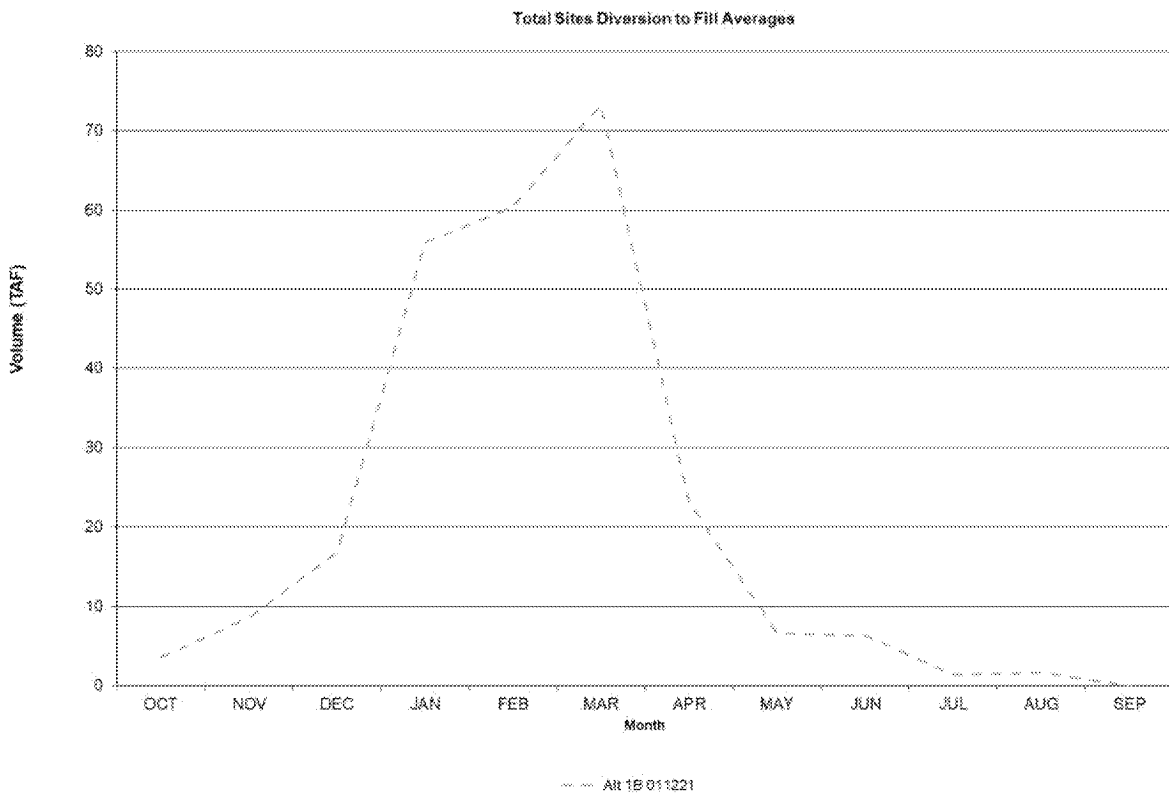
Water year type based on the Sacramento Valley 40-30-30 Water Year Hydrological Classification Index  
Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 4. January to December Total Sites Diversion to Fill: Water-year Type Averages**



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 5. Exceedance plot of January to December Total Sites Diversion to Fill**



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 6. Long-term Monthly Average of Total Sites Diversion to Fill**

## 4.2 Diversion and Conveyance Facilities

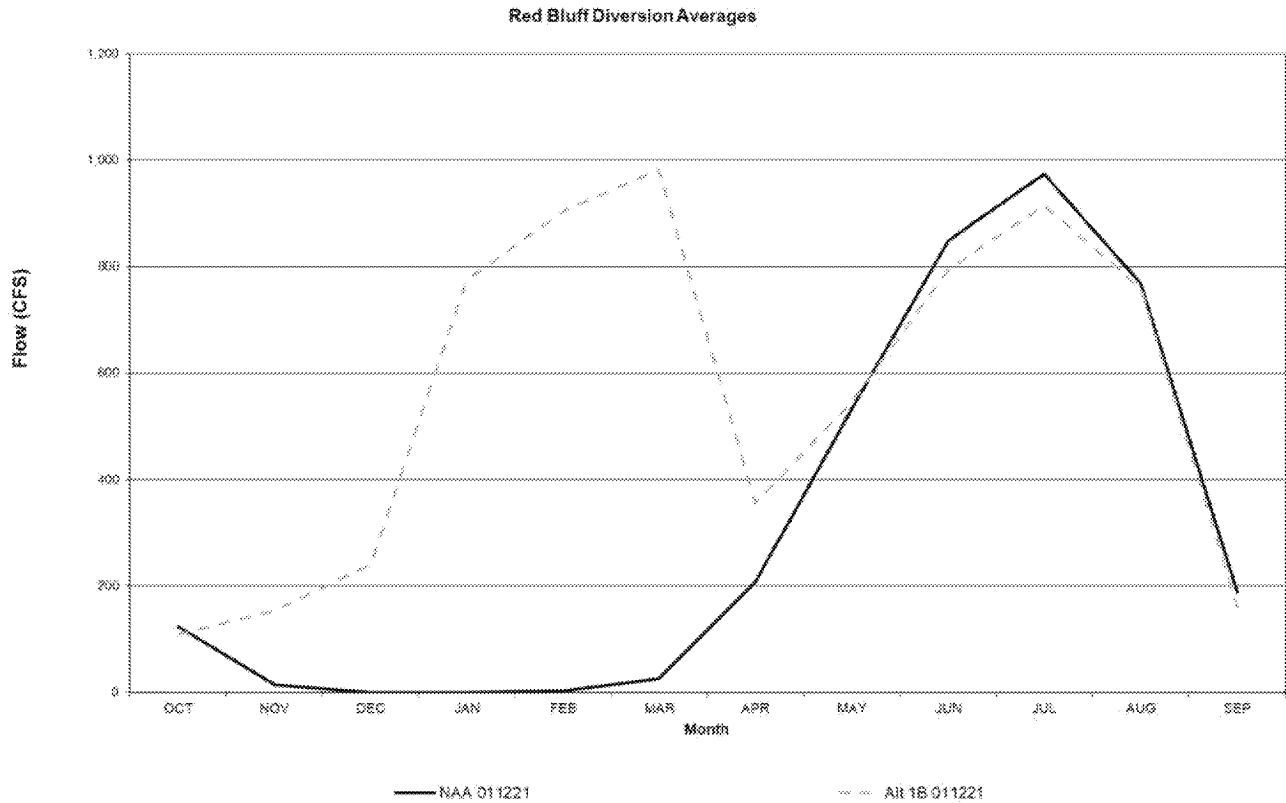
The following sections describe the diversion and conveyance facilities that may be used in the operation of the Project. The location of these facilities is shown in Figure 1. Facilities are described below in order of operational process (i.e., diversion, storage, release).

### 4.2.1 Red Bluff Pumping Plant, Tehama-Colusa Canal, and Funks Reservoir

The Project would divert water from the Sacramento River at the existing Red Bluff Pumping Plant (RBPP) and Hamilton City Pump Station (described below). Water diverted at the RBPP enters the TC Canal to be conveyed to Sites Reservoir. The RBPP and TC Canal are owned by Reclamation and operated by the Tehama-Colusa Canal Authority (TCCA). Diversions at the RBPP will be in addition to those occurring for TCCA members as part of their CVP contracts. The RBPP will have a capacity of 2,500 cubic feet per second (cfs) after capacity improvements are made to serve the Project. The facility has a fish screen that meets National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) criteria.

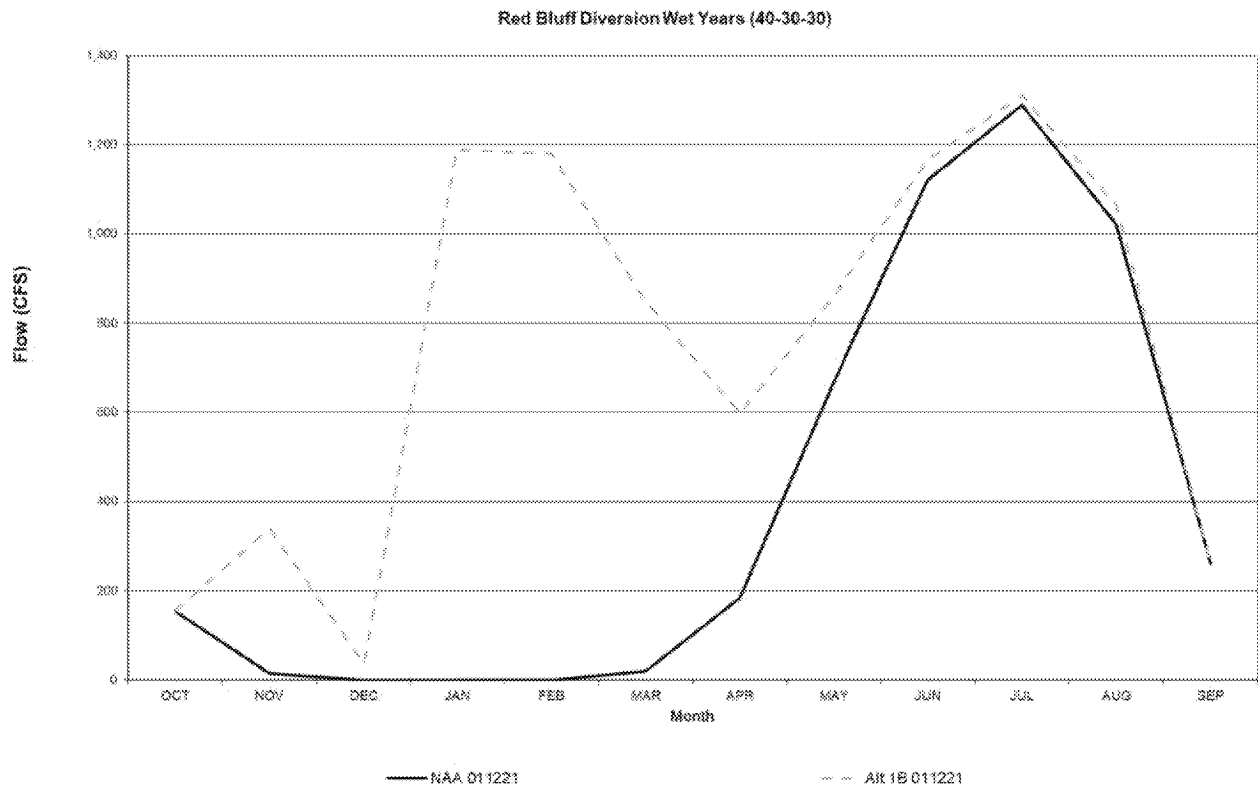
The total conveyance capacity of the TC Canal at the upstream end of the canal is 2,530 cfs and 2,100 cfs at Funks Reservoir (described below). Figure 7 shows average monthly diversions for all water year types at the RBPP with and without the Project. Figure 8 shows average monthly diversions in wet years when

diversions are highest. The figures depict the total diversions at the pumping facility for both TCCA and Sites purposes. The total diversions at Red Bluff in the summer months are modeled as decreasing slightly between the No Action Alternative (NAA 011221) and the with-project alternative (Alt 1B 011221) due to exchanges (e.g. TCCA members receiving CVP water from Sites rather than pumping it from the Sacramento River). Note that the figures show monthly averages; actual within-month diversions at the daily or weekly timescale are expected to vary. Daily modeling will be developed in the future, and future versions of this Plan will be modified accordingly.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 7. Red Bluff Diversion Averages**



Water year type based on the Sacramento Valley 40-30-30 Water Year Hydrological Classification Index  
 Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 8. Red Bluff Diversions in Wet Years**

The TC Canal is concrete-lined, resulting in a relatively minor seepage losses during the conveyance of Sites water. Losses occurring between the RBPP and Sites Reservoir are estimated to be 1 percent. However, the actual losses incurred will be estimated by TCCA during Project operations. Losses in the TC Canal will be allocated on a daily basis proportionally to Storage Partners receiving diversions. The TC Canal is currently out of service for maintenance from mid-December to mid-February each year. This maintenance window is expected to be reduced once Sites Reservoir is constructed.

The existing Funks Reservoir will be used as a regulating reservoir to store water from the TC Canal for pumping to, and for release from, Sites Reservoir. Funks Reservoir will have an estimated storage capacity of 2,250 acre-feet following dredging to restore the regulating reservoir's original design capacity. Funks Reservoir is currently drained from mid-December to mid-February during the canal maintenance period. It is not anticipated that Funks would be drained annually while Sites Reservoir is operational, besides potentially during the shortened canal maintenance window. Funks Reservoir operates at a water surface elevation of 200 to 205 feet, with a preferred operational water surface elevation range of 202 to 204 feet.

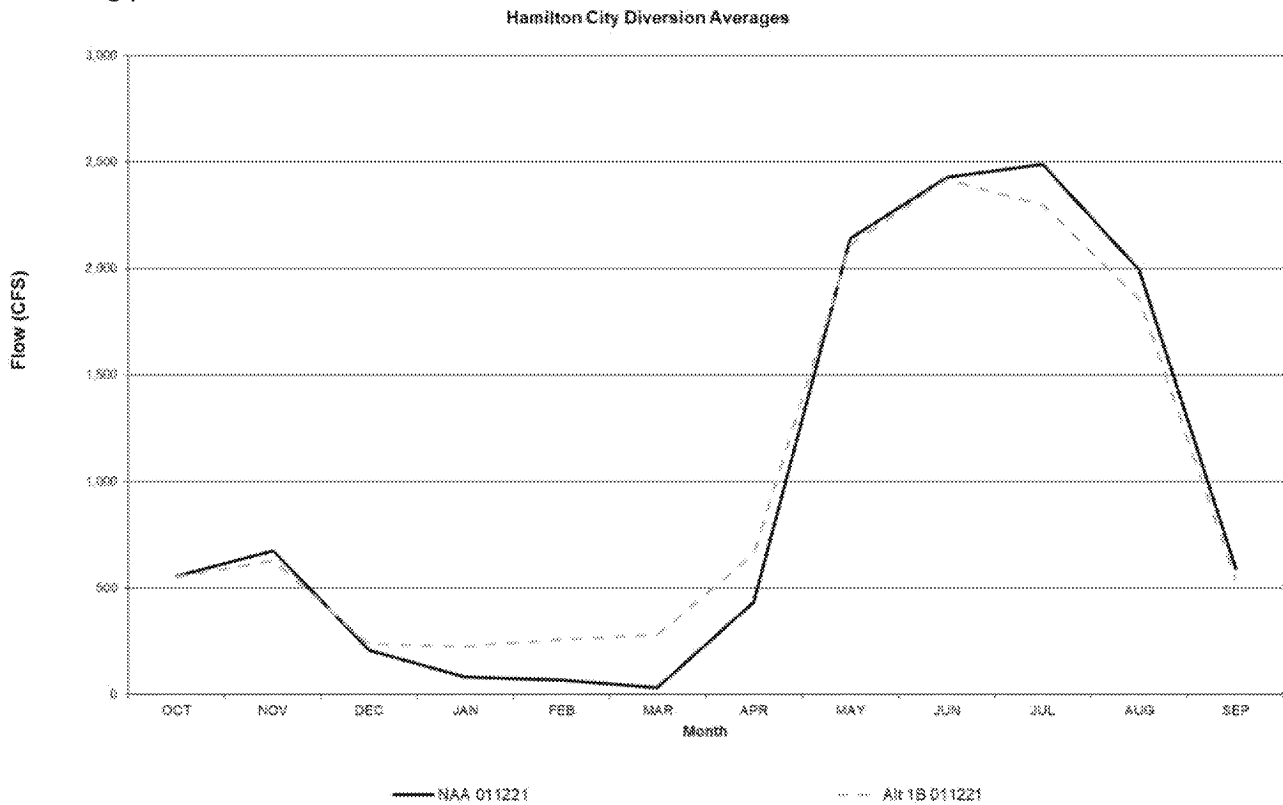
The newly constructed Funks Pumping Generating Plant (PGP) will be used to pump water from Funks Reservoir to Sites Reservoir with a pumping capacity of 2,100 cfs and a generating capacity of up to 2,000 cfs. The pumping generating plant will require a substation to provide electricity to the associated facilities. Two 12-foot-diameter underground Funks pipelines will convey water approximately 1 mile between the pumping generating plant and Sites Reservoir.

## 4.2.2 Hamilton City Pumping Plant, Glenn-Colusa Irrigation District Main Canal, and Terminal Regulating Reservoir

Water diverted from the Sacramento River at the existing Hamilton City Pumping Plant (HCPP) enters the GCID Main Canal. The HCPP and the GCID Main Canal are owned and operated by GCID. Diversions at the HCPP will be in addition to those occurring for uses in the GCID system but may be modified to accommodate exchanges with the Project when mutually agreed upon by GCID and the Authority (see Section 7.2 for further discussion on exchanges). The HCPP has a diversion capacity of approximately 3,000 cfs at the Sacramento River intake. The facility has a fish screen that meets NMFS and CDFW criteria.

The total conveyance capacity of the GCID Main Canal is assumed to be 1,800 cfs at the Terminal Regulating Reservoir (TRR, described below). Figure 9 shows average monthly diversions for all water year types at the HCPP with and without the Project.

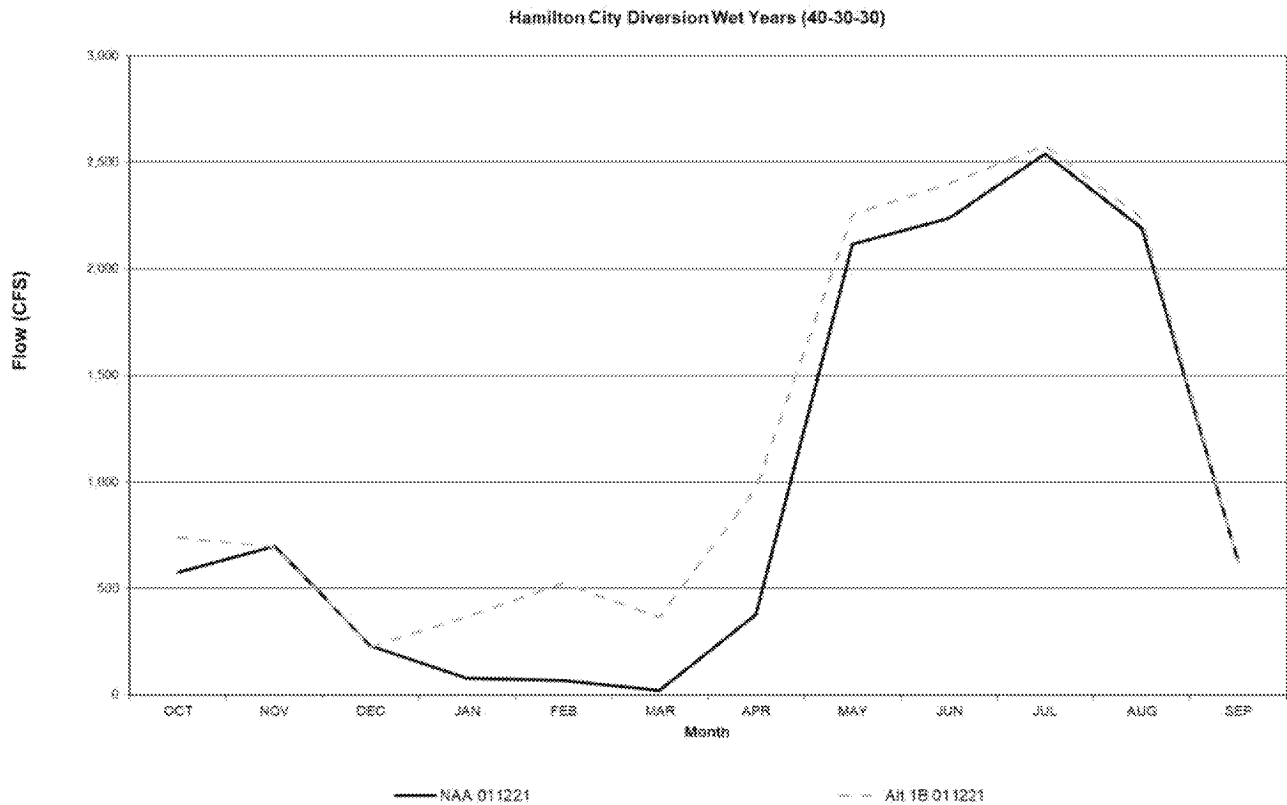
Figure 10 shows average monthly diversions in wet years when diversions are highest. The figures depict the total diversions at the pumping facility for both GCID and Sites purposes. The total diversions at the HCPP in the summer months are modeled as decreasing slightly between the NAA (NAA 011221) and the Alternative 1B (Alt 1B 011221) due to exchanges (e.g. GCID receiving water from Reclamation’s storage account in Sites rather than pumping from the Sacramento River). The figures depict monthly averages; actual within-month diversions at the daily or weekly timescale are expected to vary. Daily modeling will be developed in the future, and future versions of this Reservoir Operations Plan will be modified accordingly.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 9. Hamilton City Diversion Averages**





Water year type based on the Sacramento Valley 40-30-30 Water Year Hydrological Classification Index  
 Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 10. Hamilton City Diversion Wet Years (40-30-30)**

The GCID Main Canal is unlined, resulting in larger seepage losses than the TC Canal during the conveyance of Sites water. Losses from the HCPP to Sites Reservoir are estimated to be 2 percent from November to March and 13 percent from April to October. However, the actual losses incurred from the HCPP to Sites Reservoir will be estimated by GCID during Project operations. Losses in the GCID Main Canal will be allocated on a daily basis proportionally to Storage Partners receiving diversions. Because the GCID Main Canal is unlined, it requires regular annual maintenance—during which time water cannot be conveyed using the canal. The assumed annual maintenance time is 2 weeks in late January or early February.

The newly constructed TRR will be a regulating reservoir up to 600 acre-feet constructed adjacent to the GCID Main Canal, approximately 3 miles northeast of Funks Reservoir. Two options for the TRR are being considered: TRR East and TRR West. Regardless of the alternative selected, the footprint of TRR would be approximately 100 acres. The TRR would have earthen embankments at the perimeter with impermeable lining consisting of a geomembrane overlying geocomposite placed over compacted earth. The TRR would be hydraulically connected to the GCID Main Canal to allow water to be conveyed to and from Sites Reservoir. The TRR would accommodate inflows of up to 1,800 cfs.

The newly constructed TRR Pumping Generating Plant (PGP) will be used to pump water from the TRR to Sites Reservoir with a pumping capacity of 1,800 cfs. The generating plant will have a capacity of 1,000 cfs.

Two 12-foot-diameter underground pipelines would convey water approximately 4 to 4.5 miles between the TRR PGP and Sites Reservoir.

## 4.3 Diversion Criteria

Sites Reservoir would be filled primarily through the diversion of Sacramento River flows that originate primarily from unregulated tributaries to the Sacramento River downstream from Keswick Dam. A relatively small amount of flow is assumed to be provided by flood releases or spills in wet years from Shasta Lake. Similarly, a small amount of water from Stone Corral and Funks Creeks will be impounded in Sites Reservoir. Sacramento River flows would be diverted at two locations on the Sacramento River, as described above. The following sections describe the existing regulatory environment under which the Project would operate, and the Project-specific diversion criteria that would be finalized through the permitting and water right process. It should be noted that the regulatory environment is not static and Project operations will be adjusted as needed to meet regulatory requirements that are in place during the time of operations.

### 4.3.1 System-wide Criteria and Regulations

The primary regulatory requirements that must be met prior to diversions are summarized below, at a high level. The requirements listed are those expected to regularly influence Project operations, but the list is not comprehensive. All diversion criteria, both system-wide and Project-specific, must be met for Project diversions.

- ∞ **Sacramento River is not fully appropriated:** The Sacramento River is considered to be fully appropriated from June 15 to August 31. Therefore, the Project will not divert during this window, regardless of river conditions or flows.
- ∞ **Excess conditions in the Delta:** The Delta is considered to be “in excess” when the sum of releases from upstream reservoirs plus unregulated flows are greater than Sacramento Valley in-basin uses plus exports. Excess conditions are determined by DWR and Reclamation; the Project can divert only when the Delta is in excess.
- ∞ **Senior Water Rights:** Existing CVP and SWP and other water right diversions, including other more senior excess flow priorities would take priority over the diversion of Sites water.
- ∞ **SWP Article 21, Reclamation Article 6F and 215:** The SWP contract and CVP contracts include provisions for deliveries above contract amounts in certain conditions. This water is generally available in wetter water year types or in higher flow conditions. The delivery of SWP Article 21 water, CVP Article 3(f), and CVP 215 water is senior to Project diversions and deliveries and would take priority over the movement of Project water.
- ∞ **SWRCB Decision 1641 (D-1641):** D-1641 and its amendment identify the implementation of water quality and flow objectives for the San Francisco Bay and Sacramento-San Joaquin Delta Estuary. Components of D-1641 expected to have the largest influence on Project operations include requirements for the Net Delta Outflow Index, operations of the CVP and SWP related to salinity and X2, and Delta water quality requirements.
- ∞ **SWP Incidental Take Permit:** The Project will operate so as to avoid affecting DWR’s ability to operate to the SWP Incidental Take Permit. In particular, the Authority will not impinge on DWR’s ability to conduct export curtailments for Spring outflow, provide 100 TAF for Delta outflow, or operate to the Delta Smelt Summer-Fall Habitat Action.
- ∞ **2019 Biological Opinions (2019 BiOps) for CVP and SWP:** The Project will operate so as to avoid affecting Reclamation’s ability to operate to the 2019 BiOps. The Authority will coordinate with Reclamation on exchanges to enhance Reclamation’s ability to operate to the 2019 BiOps. In

particular, the Authority will not impinge on Reclamation's ability to provide spring pulse flows, cold water pool preservation in Shasta, and fall flow stability in the Sacramento River downstream of Shasta Lake. The 2019 BiOps are currently under reconsultation. The outcome of this reconsultation will inform the Project's operations and will change the baseline operations of the system.

The Project will also be required to operate under any temporary restrictions on pumping put into place by SWRCB. One example of such a restriction is Term 91, when those holding certain permits and licenses must cease diverting water because water in excess of CVP and SWP storage releases is not available in the system. Term 91 is often implemented under drought conditions, when Project diversions are unlikely to occur due to other requirements such as bypass flows.

As noted above, the regulatory environment is not static. As such, Project operations will adjust as needed to meet regulatory requirements that are in place during the time of operations.

### **4.3.2 Project-specific Diversion Criteria**

#### **Bend Bridge Pulse Protection**

Project implementation would include a pulse flow protection measure to be applied to all qualified precipitation-generated peaks in the hydrograph that originate primarily from tributaries to the Sacramento River that flow into the mainstem Sacramento River downstream of Keswick Dam from October through May. Project diversions from the Sacramento River would not occur during a qualified pulse event. Diversions are otherwise unrestricted by the Bend Bridge Pulse Flow protection criteria.

For modeling included in the Revised Draft EIR/Supplement Draft EIS, a qualified pulse flow is defined as follows:

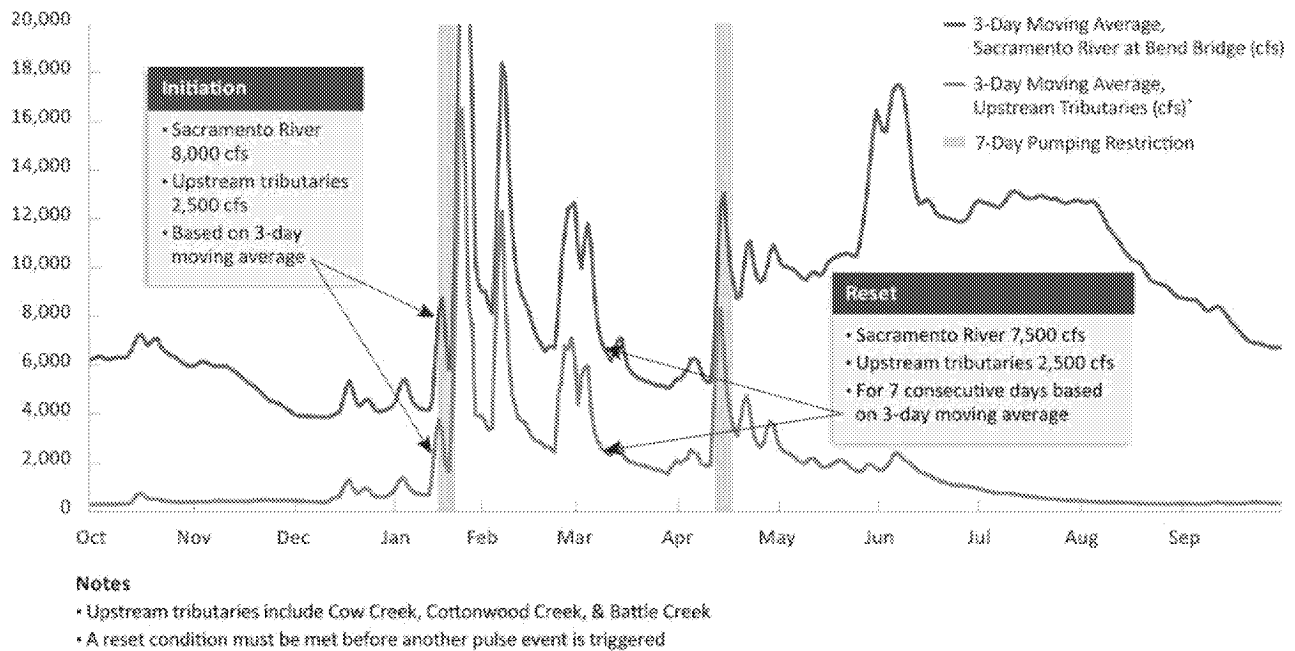
1. Outmigration of anadromous fish is detected based on the Adaptive Management Plan and fish monitoring program; and,
2. The 3-day trailing average of Sacramento River flow at Bend Bridge exceeds 8,000 cfs, the 3-day trailing average tributary flow upstream of Bend Bridge (Cow, Cottonwood, and Battle Creeks) exceeds 2,500 cfs, and a pulse event the previous day was not already in a pulse event.

A pulse event terminates 7 days after initiation. After completion of a pulse event, the following conditions must occur before another pulse event is triggered:

1. The 3-day trailing average of Sacramento River flow at Bend Bridge was less than 7,500 cfs for 7 consecutive days, and,
2. The 3-day trailing average of tributary flow upstream of Bend Bridge (Cow, Cottonwood, and Battle Creeks) was less than 2,500 cfs for 7 consecutive days.

Figure 11 depicts the pulse flow protection criteria.

## Sites Pulse Flow Protection



**Figure 11. Sites Pulse Flow Protection**

The pulse flow criteria described above align with those included in Project modeling for the RDEIR/SDEIS. Final pulse flow criteria are under development and will be revised as necessary in future versions of this Reservoir Operations Plan.

### Wilkins Slough Bypass Criteria

A minimum bypass flow of 10,700 cfs in the Sacramento River at Wilkins Slough would be in place from March to May and 5,000 cfs during the rest of the Project diversion season (June, and September through February). The current flows at Wilkins Slough will be determined using information available on the California Data Exchange Center for the Sacramento River below Wilkins Slough (WLK) gage. Projected flows/forecasts will be determined either by using correlation between Colusa Bridge forecasts and Wilkins Slough flows or by working with the Sacramento River Forecast Center to develop projections specific to Wilkins Slough. Additional information on flow forecasting will be included in future versions of this Operations Plan.

### Fremont Weir Notch Protections

The Project's diversion criteria have been formulated to avoid impacts on Reclamation's ability to meet its obligations in the 2019 NMFS BiOp to implement the Yolo Bypass Restoration Salmonid Habitat Restoration and Fish Passage Implementation Plan and inundate over 17,000 acres in the Yolo Bypass from December to April (NMFS 2019). For the purposes of modeling, diversions to Sites Reservoir may occur if no more than a 1 percent reduction in flow through the Fremont Weir Notch would result when flows through the Notch are less than 600 cfs. Project diversions may occur if no more than a 10 percent reduction in flow through the Fremont Weir Notch would occur when flows through the Notch are between 600 cfs and 6,000 cfs. When flows through the Fremont Weir Notch are greater than 6,000 cfs (when flows are over the Fremont Weir), there would be no restriction on Project diversions. These

limitations are intended to reduce changes to spill frequency and duration. The actual criteria used in operations related to the Fremont Weir Notch are being developed.

### Red Bluff Pumping Plant

Diversions at the RBPP can occur only when flows in the Sacramento River are 3,300 cfs or higher, as measured at Bend Bridge. Diversions are limited because of the fish screen function to prevent entrainment of fish when diverting. Therefore, pumping ramps up as river flows increase, as shown in Figure 12. The minimum pumping rate is 80 cfs, which occurs when river flows are 3,300 cfs. The fish screen at RBPP is designed for 2,500 cfs, however the maximum pumping rate at Funks PGP into Sites Reservoir is 2,100 cfs. Therefore, the maximum diversions for the Project are 2,100 cfs plus losses. Pumping 2,100 cfs at Red Bluff requires a minimum river flow of 7,860 cfs.

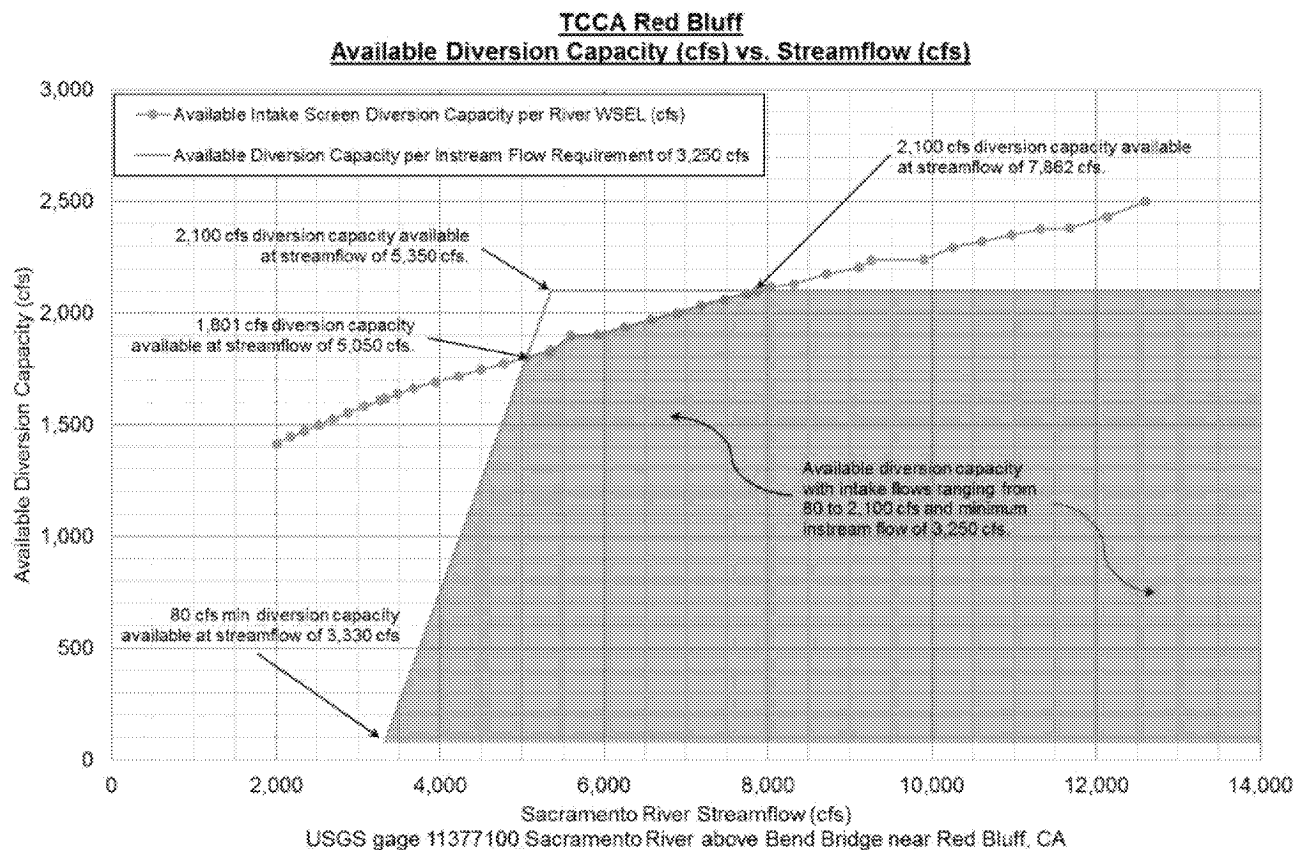


Figure 12. TCCA Red Bluff Available Diversion Capacity (cfs) vs. Streamflow (cfs)

### Hamilton City Pumping Plant

Diversions at the HCPP can occur only when flows in the river are 4,150 cfs or higher, as measured at Bend Bridge. Diversions are limited on account of the fish screen function to prevent entrainment of fish when diverting. Therefore, pumping ramps up as river flows increase, as shown in Figure 13. The minimum pumping rate is 150 cfs, which occurs when river flows are 4,150 cfs. The maximum pumping rate at Hamilton City is 3,000 cfs, which requires a minimum river flow of 7,000 cfs. However, the pumping plant at the TRR has a capacity of 1,800 cfs. Therefore, it is unlikely that the full pumping capacity would be used to divert Project water alone.

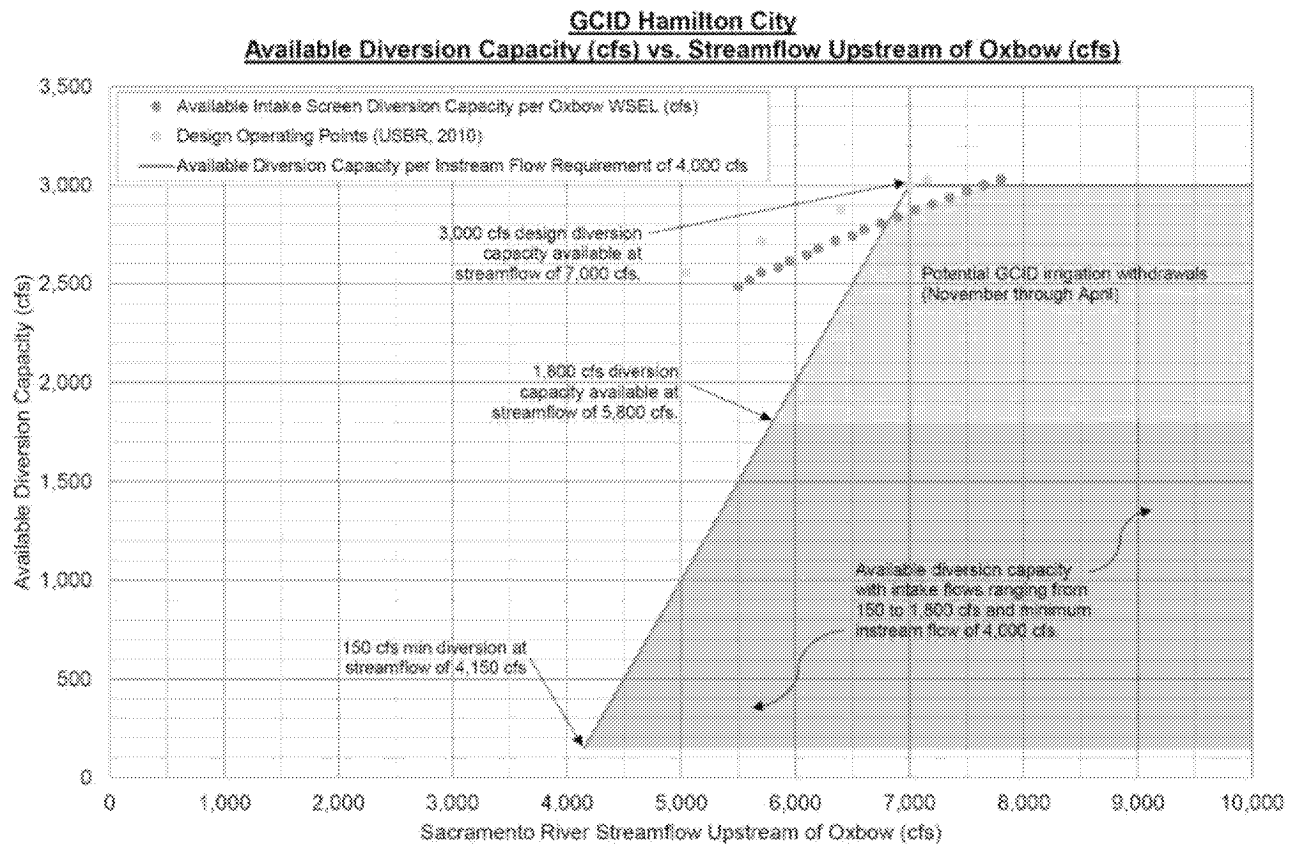


Figure 13. GCID Hamilton City Available Diversion Capacity (cfs) vs. Streamflow Upstream of Oxbow (cfs)

## 4.4 Diversion Orders

In accordance with the Principles for the Storage, Delivery and Sale of Sites Reservoir Project Water (Storage Principles, Attachment B), the Authority will attempt to maximize the appropriation of water into storage consistent with the regulatory requirements, physical constraints, and hydrologic conditions. The Authority will be responsible for compliance with water right provisions and other conditions that control the appropriation of water into storage in Sites Reservoir. Appropriated water from the Sacramento River will be placed into Sites Reservoir and then allocated into each Storage Partner's Storage Allocation proportional to their Storage Allocation. For example, if 340 TAF of water is appropriated into Sites in any one year, this represents 25 percent of the total allocated storage. In that year, each Storage Partner will receive an amount equal to 25 percent of their Storage Allocation, assuming their Storage Allocation space has at least 25 percent available/empty. Once a Storage Partners Storage Allocation is full, the remainder of the diversions will be allocated to the other Storage Partners.

Storage Partners may opt out of receiving diversions into their Storage Allocation. They can notify the Authority they wish to opt out at any time. Any diversions that occur within 1 week of notification (and the associated variable costs) will be allocated to other Storage Partners, if possible, but may be allocated to the Storage Partner who is opting out if the reservoir is otherwise full. If a Storage Partner

opts out of receiving diversions—assuming they have not leased their storage to another entity—all diversions will be allocated to other Storage Partners and the amount of unused storage space will remain empty until the Storage Partner notifies the Authority that they wish to receive diversions again.

#### **4.4.1 Priority of Diversions**

At this time, it is not anticipated that diversions will be prioritized to a specific Storage Partner or Storage Partner type. All diversions will be allocated proportionate to Storage Partners based on their Storage Allocation until that allocation is full. If a Storage Partner has no available Storage Allocation, the diversions will be proportionally allocated to those Storage Partners who do have storage capacity remaining in their Storage Allocation.

#### **4.4.2 Diversions of Non-Sites Water**

There are opportunities for Storage Partners to request non-Sites water (water not appropriated under the Project's water rights) be diverted and placed into their Storage Allocation. These other sources could include the following: the re-diversion of previously stored water, water transfers, exchange water, etc. The Authority will take all reasonable steps to facilitate these requests. The Storage Partner requesting such diversions will be responsible for the costs of obtaining/storing these other sources of water, including any costs associated with water right changes, environmental compliance, and Authority costs associated with reviews. In accordance with the Storage Principles, the Storage Partner requesting such diversions is responsible for all operations and maintenance (O&M) costs of placing this water into their Storage Allocation. Placing water into storage under the Project's water right will take priority over storing water from other sources.

## **5.0 Storage in Sites Reservoir**

### **5.1 Losses from Storage**

Losses from storage are expected to result from evaporation and seepage. The approach to assessing losses is yet to be determined; however, a mass balance or pan evaporation rate may be used. A mass balance estimate would include daily records of reservoir storage, diversions, rainfall, and spills (if applicable) to estimate daily losses. Pan evaporation uses temperature, humidity, rainfall, and wind to estimate the level of evaporation based on surface area. A combination of both methods could also be used.

Using the decided-upon methodology, losses of water held in Sites Reservoir storage—including evaporation and seepage—will be estimated on a daily basis. These losses will be allocated to each Storage Partner based proportionally on the amount of water in storage that day.

Sites CalSim modeling includes an estimate of net evaporation (precipitation minus evaporation) based on evaporation experienced in nearby reservoirs. Modeling shows an annual net evaporation rate of approximately 37 TAF.

### **5.2 Dead Pool**

Sites Reservoir will have a dead pool of approximately 17,700 acre-feet, below which water cannot physically be removed from the reservoir using the intake/outlet (I/O) works. However, the Authority is currently planning to operate to a dead pool of up to 120 TAF under normal conditions to accommodate

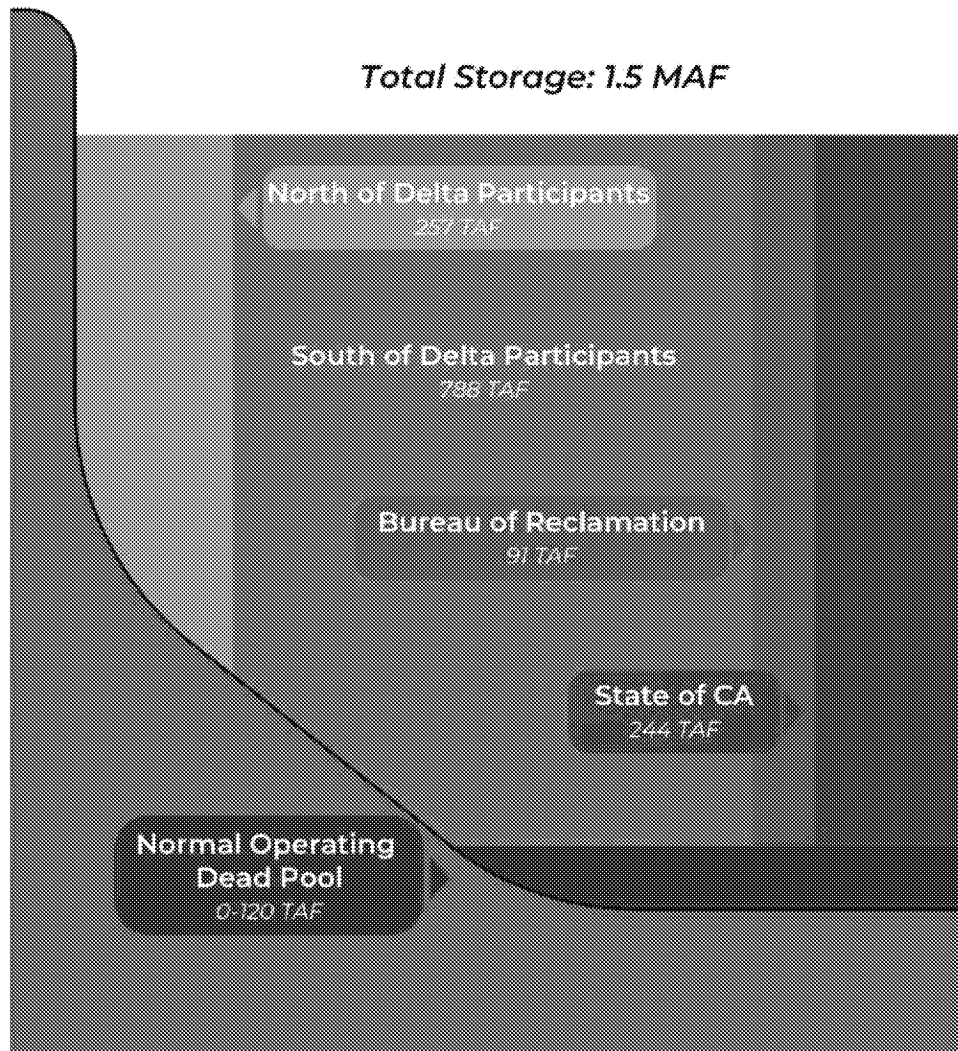
water quality considerations. Current operations modeling assumes that the dead pool could be drawn down a further 60 TAF if the water does not return to the Sacramento River. The operational dead pool amount may be revised and reduced in final design and in real-time operations with water quality measurements over time.

## **5.3 Storage Allocation, Leasing, and Transfers**

### **5.3.1 Storage Allocation**

Sites Reservoir is allocated to each Storage Partner proportionate to their annualized acre-feet per year subscription. Because the State of California (State), through Proposition 1, and Reclamation, through the WIIN Act, participate based on available funding versus annualized acre-feet per year, the Storage Allocation for the State and Reclamation are calculated using a different methodology. The State is allocated the storage required to meet Proposition 1 benefits. At this time, the methodology for allocating storage to Reclamation is being developed, but the modeling to date assumes that Reclamation receives a Storage Allocation that is approximately commensurate with its proportionate cost-share in the Project. Based on the Authority's Preferred Project in the Revised Draft EIR/Supplemental Draft EIS, this results in assumed federal funding of 7 percent of Project costs. The modeling for this alternative assumes 6.6 percent of active storage in the reservoir is allocated to Reclamation. Figure 14 depicts the current Storage Allocation based on the Storage Partners participating in the Project as of December 2021 and aligned with the CalSim modeling developed for Alternative 1B in the Revised Draft EIR/Supplemental Draft EIS.





**Figure 14. Sites Reservoir Storage Allocation**

The methodology for allocating reservoir storage is described in Attachment C. The Storage Allocation is likely to change depending on annualized acre-feet per year requested by Storage Partners and final levels of local, state, and federal funding. The reservoir allocation will be updated in future versions of this Operations Plan.

### 5.3.2 Storage Leasing and Transfers

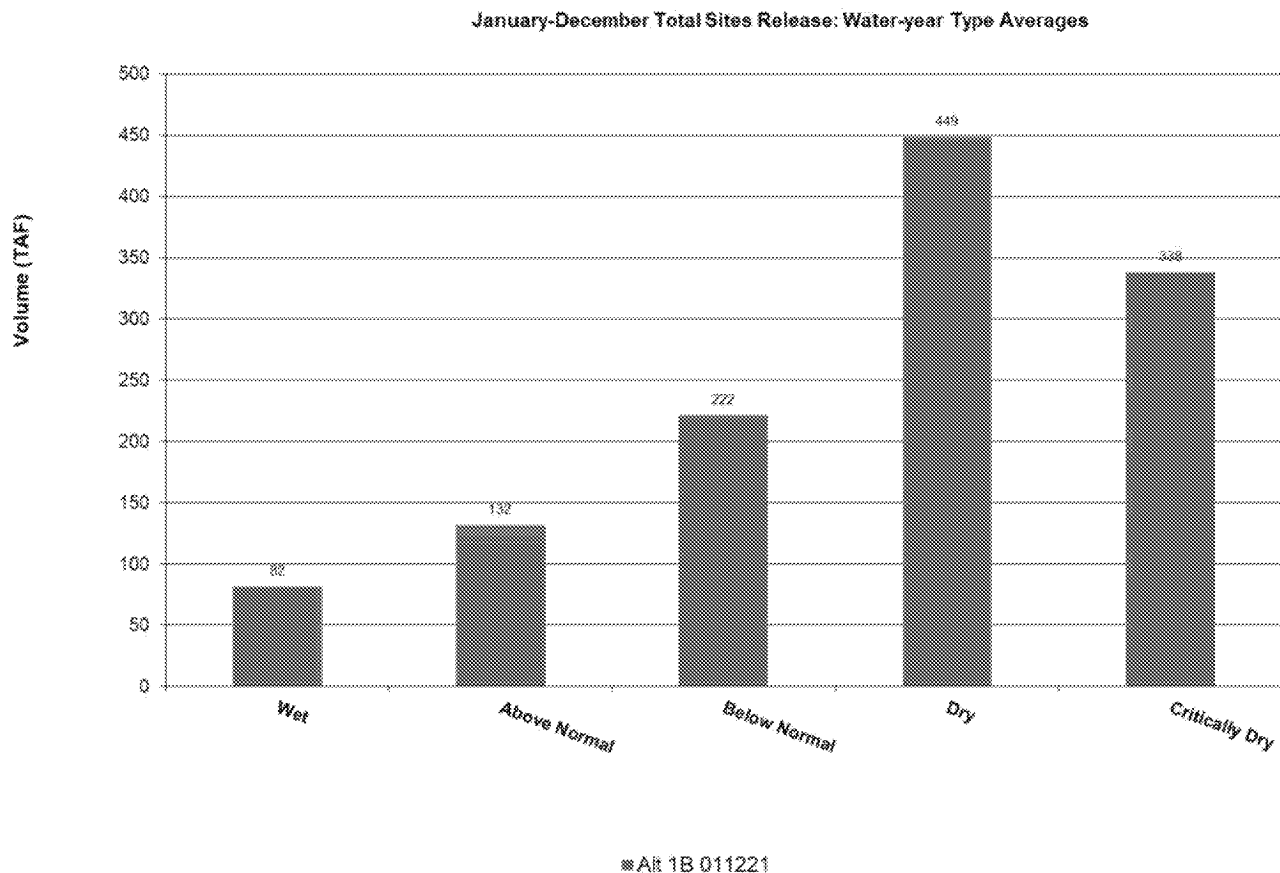
The Storage Principles allow Storage Partners lease storage space or to exchange and transfer stored water to other Storage Partners and water users who are not Storage Partners. Such leasing and transfer agreements can span multiple years or occur within a given contract year. The Authority will account for and track storage leased and transferred in its real-time accounting system. In accordance with the Storage Principles, the Storage Partner whose Storage Allocation is being leased or transferred is responsible for the payment of all allocated capital, fixed O&M, and variable O&M costs, as well as obtaining all environmental permits and water right agreements required.

The methods for notifying the Authority of leases or transfers of Storage Allocations will be developed further in a future version of this Operations Plan.

## 6.0 Releases from Sites Reservoir

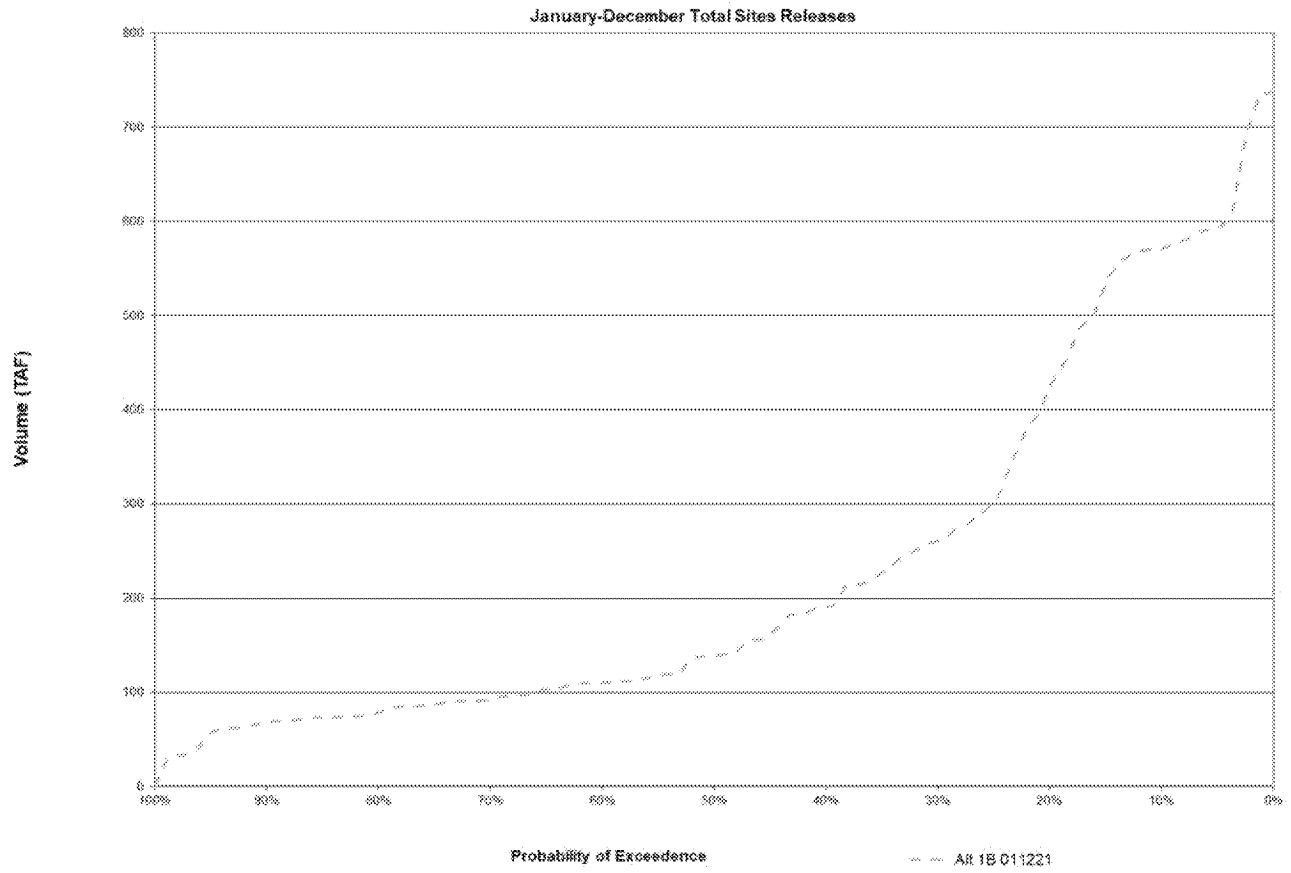
### 6.1 Overall Project Releases

Project releases would generally occur in the late spring, summer, and fall months but could happen throughout the year. Project exports to Storage Partners south-of-Delta must occur during the transfer window (July through November) of each year. Project deliveries to Storage Partners in the Delta and north of the Delta, including Reclamation (as an exchange partner or investor) and DWR (as an exchange partner), can occur outside the transfer window. The total Project releases by water year type, an exceedance plot of project release, and the timing for releases are shown in Figure 15 to Figure 17. Figure 17 includes all releases from the reservoir, including those used for exchanges with DWR and Reclamation. Further discussions of exchanges are included in Section 8. Note that the figures show monthly averages; actual within-month releases at the daily or weekly timescale are expected to vary. Daily modeling will be developed in the future, and future versions of this Plan will be modified accordingly.



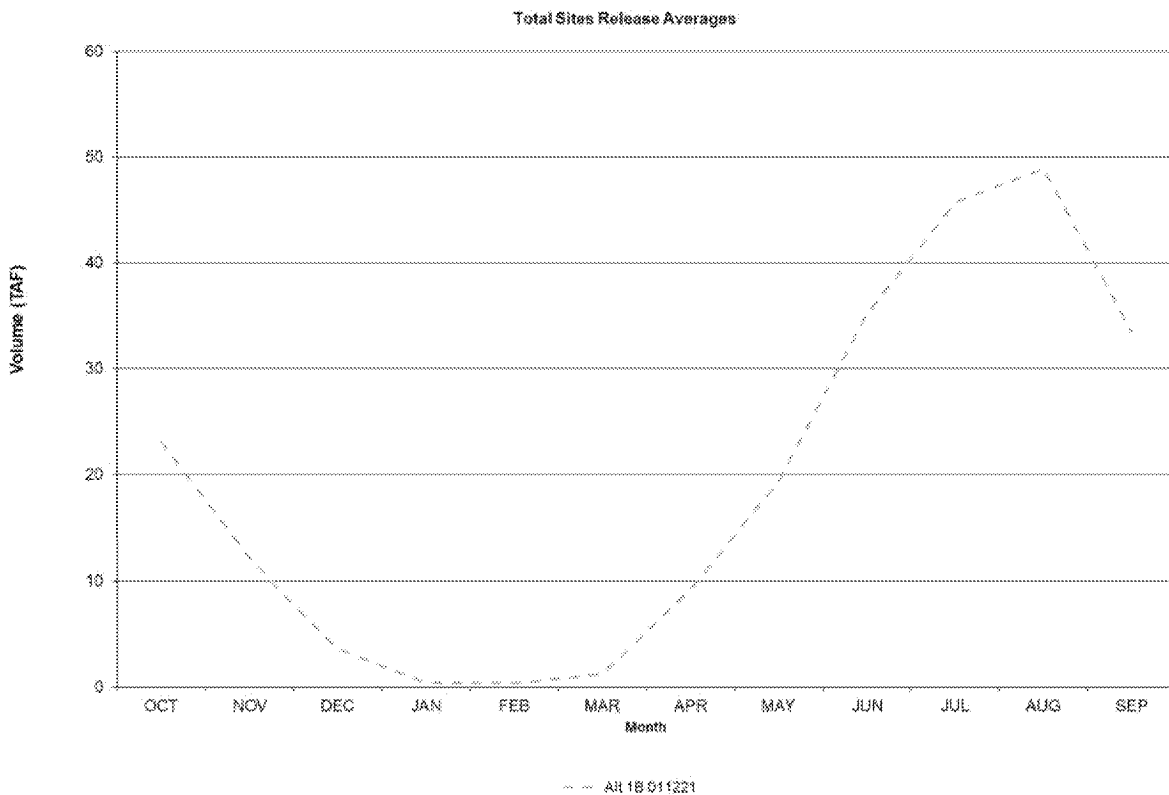
Water year type based on the Sacramento Valley 40-30-30 Water Year Hydrological Classification Index  
Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 15. January to December Total Sites Release: Water-year Type Averages**



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 16. January to December Total Sites Releases**



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 17. Total Sites Release Averages**

The assumptions used in the CalSim modeling for the Revised Draft EIR/Supplemental Draft EIS for releases, or demands, for specific Storage Partners and deliveries by year type are included as Attachment D.

## 6.2 Release and Conveyance Facilities

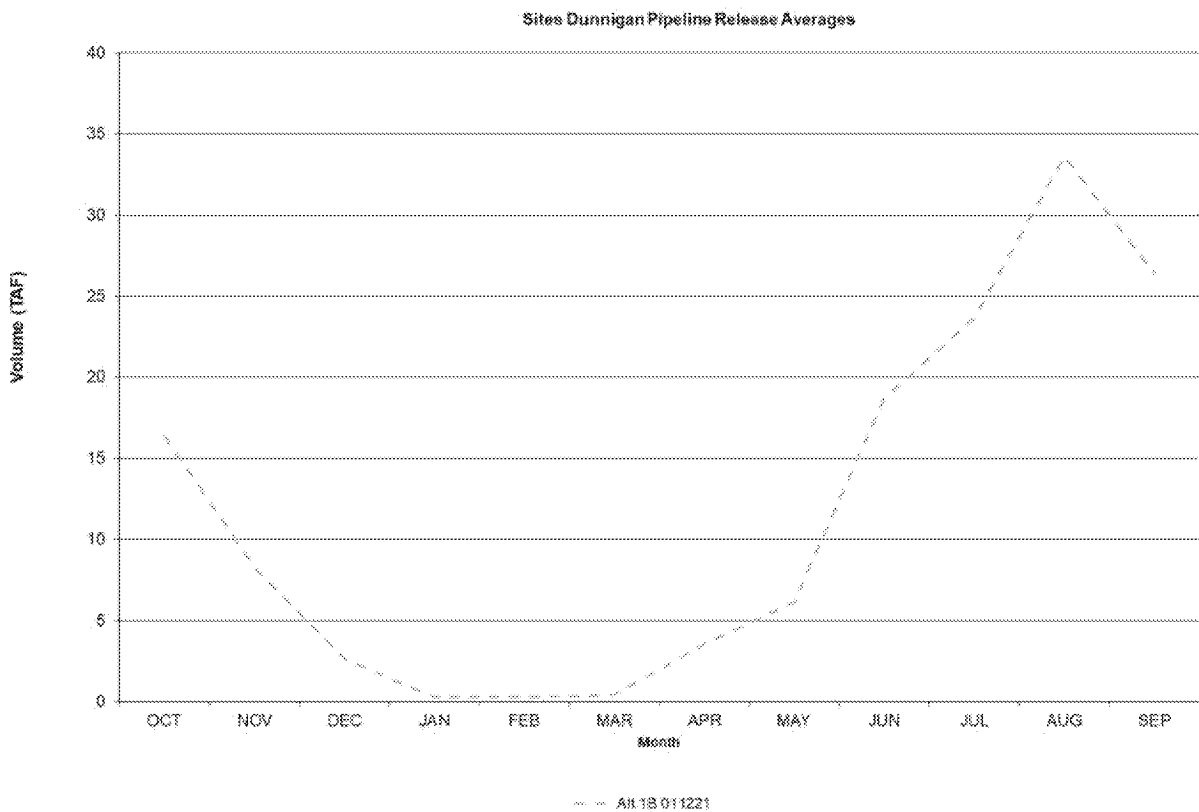
The following sections provide a general description of the release and conveyance facilities that may be used in the operation of Sites Reservoir. The location of these facilities is shown in Figure 1 and Figure 2.

### 6.2.1 Tehama-Colusa Canal

Most releases from Sites Reservoir would flow into the existing Funks Reservoir (as described in Section 4.2) and into the existing TC Canal. Water would flow within the TC Canal and would either be diverted for delivery of Project water to local Storage Partners or would flow 40 miles south to the new Dunnigan Pipeline. The TC Canal will be used for the release of water to all TC Canal members who are Sites Storage Partners, Delta and south-of-Delta Storage Partners, federal water (with the exception of water delivered to GCID), and environmental water for Proposition 1 for Yolo Bypass and south-of-Delta refuges. Releases to the TC Canal would be limited by available capacity in the TC Canal and the available capacity in the Dunnigan Pipeline. Water would be released from the TC Canal into the Dunnigan Pipeline through a gravity outlet structure.

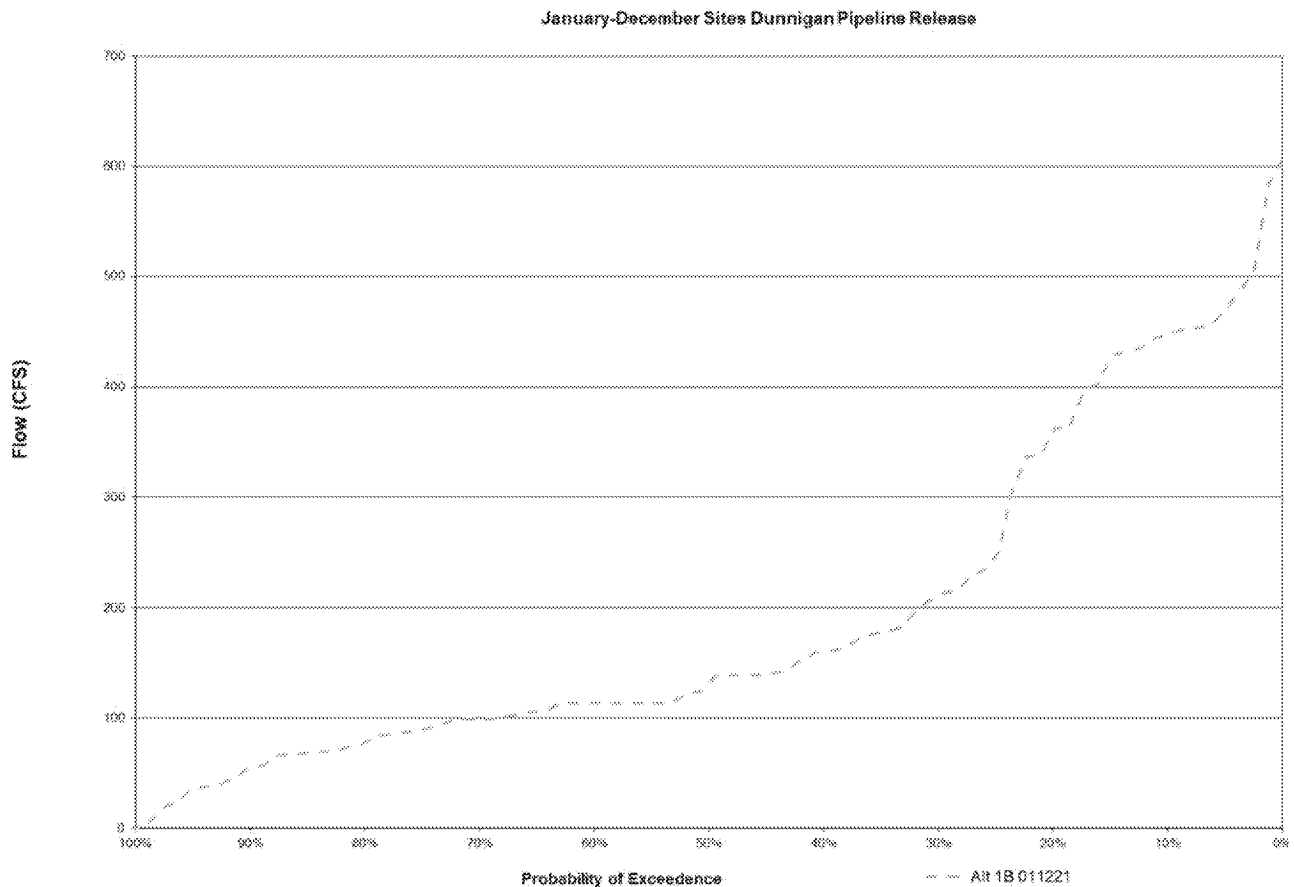
## 6.2.2 Dunnigan Pipeline

The Dunnigan Pipeline will convey water released from the TC Canal to the Colusa Basin Drain (CBD). The Dunnigan Pipeline will be approximately 4 miles in length and have an inner diameter of approximately 9 feet. A CBD outlet with an energy dissipation structure will be constructed at the downstream end of the pipeline to allow water to discharge into the CBD. Two 60-inch-diameter, fixed-cone valves would be placed at the discharge stilling basin to dissipate energy and adjust the flow being released into the CBD. The conveyance through the Dunnigan Pipeline to the CBD would use gravity and have a flow up to 1,000 cfs. Figure 18 and Figure 19 show the modeled flow through the Dunnigan Pipeline. Note that the figures show monthly averages; actual within-month releases through the Dunnigan Pipeline at the daily or weekly timescale are expected to vary. Daily modeling will be developed in the future, and future versions of this Plan will be modified accordingly.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 18. Sites Dunnigan Pipeline Release Averages**



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 19. January to December Sites Dunnigan Pipeline Release**

### 6.2.3 Colusa Basin Drain

The Dunnigan Pipeline will convey water to the existing CBD at a maximum flow of 1,000 cfs. From the CBD, water may either be discharged into the Yolo Bypass or back into the Sacramento River. Water discharged into the Yolo Bypass/Cache Slough Complex will flow through the Knights Landing Ridgecut. This water will be used for Proposition 1 benefits or for diversion into the North Bay Aqueduct. Water can also flow back to the Sacramento River via the Knights Landing Outfall Gates. Water conveyed back to the Sacramento River may be used by DWR (as an exchange partner) or Reclamation or be conveyed south of the Delta through the Banks or Jones pumping facilities for south-of-Delta Storage Partners or wildlife refuges.

### 6.2.4 Glenn-Colusa Main Canal

Some Project water is not released through Funks Reservoir and the TC Canal, but instead released back into the TRR and into the GCID Main Canal. Water released into the TRR and the GCID Main Canal would be used by GCID or wildlife refuges as environmental water for Proposition 1. Water is expected to be released to GCID for wildlife refuges north of the Delta in all water year types but is generally not needed in wet year types. The water could be delivered any time of the year, although it is expected that it rarely would be released for this purpose from January through March during the Project's

primary diversion season. The long-term average releases to GCID for wildlife refuges is expected to be 5 TAF under historic hydrology.

## **6.3 Release Criteria**

Project water may be released to local users any time the pumping facilities are not diverting water to storage. Water may be exported south of the Delta to refuges or Storage Partners only during the transfer window (July through November) and will, therefore, only be released from the reservoir during that timeframe. The Project can also only release water for exports when the Delta is in balanced conditions, as defined in the Coordinated Operation Agreement (COA) and determined by DWR and Reclamation.

Project releases to the CBD are constrained by capacity in both the Dunnigan Pipeline and the CBD. If it is anticipated that releases are constrained, the Authority will coordinate closely with Storage Partners, DWR, Reclamation, TCCA, GCID, and entities along the CBD in an attempt to meet the requested water release schedules. If there is a release constraint that will affect the ability to meet the requested schedules, the Authority will work with the conflicted Storage Partners to determine whether accommodations can be made. If the conflict cannot be resolved, releases will be made in proportion to the Storage Allocation attributable to the conflicted Storage Partners.

### **6.3.1 Release Orders**

To the extent allowed by the Project's permits, approvals, and agreements and its physical and operational capabilities, Storage Partners have total discretion regarding the amount of water held in their Storage Allocation that they request to be scheduled for release for their use and will have control over the use of their Storage Allocation based on the conditions outlined in the Storage Principles.

In January, Storage Partners will provide initial requests for Project water. Final requests for Project water to be released prior to the transfer window (before July 1) will be provided by the Storage Partners in February. Final requests for Project water to be released in the transfer window (July through November) will be provided by the Storage Partners in April. See Figure 3 for a full description of the annual operational needs and information provided by Storage Partners.

The Authority will work with DWR and Reclamation to schedule deliveries south of the Delta. Beginning in February, operations of the reservoir, along with conditions in the Delta, will be reevaluated at least weekly. From such analysis, the Authority will update release and delivery schedules and will coordinate with Storage Partners should any conflicts arise.

### **6.3.2 Release Order Adjustments**

The Authority will provide regular updates on the scheduling of releases and deliveries. Storage Partners may request additional releases beyond those initially requested, as defined in the annual operations cycle. The Authority will prioritize releases requested by February for water released before the transfer window (for north of Delta deliveries) and by April for water released during the transfer window (for north or south of Delta deliveries). However, the Authority will accommodate later requests for releases to the extent possible.

### **6.3.3 Weekly Release Order Adjustments**

Weekly releases, particularly for those deliveries that must be exported through the Delta, are highly dependent on coordination with DWR and Reclamation. The Authority may shift weekly deliveries as needed to maximize exports. The Authority will notify Storage Partners of any shifts, should they occur.

## **7.0 GCID and TCCA Coordination**

### **7.1 Facilities Use Agreements and Annual Coordination**

The Authority intends to enter into Facility Use Agreements with GCID and TCCA. Because the RBPP and TC Canal are owned by Reclamation, the agreement with TCCA will be in addition to a Warren Act Contract required for the use of federal facilities. Close coordination will be required between the Authority and operators at TCCA and GCID.

#### **7.1.1 TCCA Coordination**

Daily operations will be coordinated closely with the Red Bluff and Willows Offices of TCCA. In particular, operations will be closely coordinated in the shoulder and transition seasons, when diversions for the Project are occurring at the same time as deliveries for TCCA contractors. Close operations will also be necessary for frost water, which could occur when the Project is diverting and may require releases from Funks for users on the downstream portion of the TC Canal. TCCA will remain the lead operator for the RBPP and the TC Canal. The Authority will have an operator responsible for the diversions into Sites Reservoir at Funks via the Funks PGP. TCCA operations will take priority over Project operations, although the two entities will coordinate closely to adjust operations to achieve operating objectives.

It is anticipated that the Project's Supervisory Control and Data Acquisition (SCADA) system will also duplicate some of the TCCA system. This will allow logic and alarms to respond appropriately to changing conditions along the canal and in Funks Reservoir. The Authority will work with TCCA in responding to any emergency operations required, and coordination with TCCA will be included in Project's Emergency Action Plan.

#### **7.1.2 GCID Coordination**

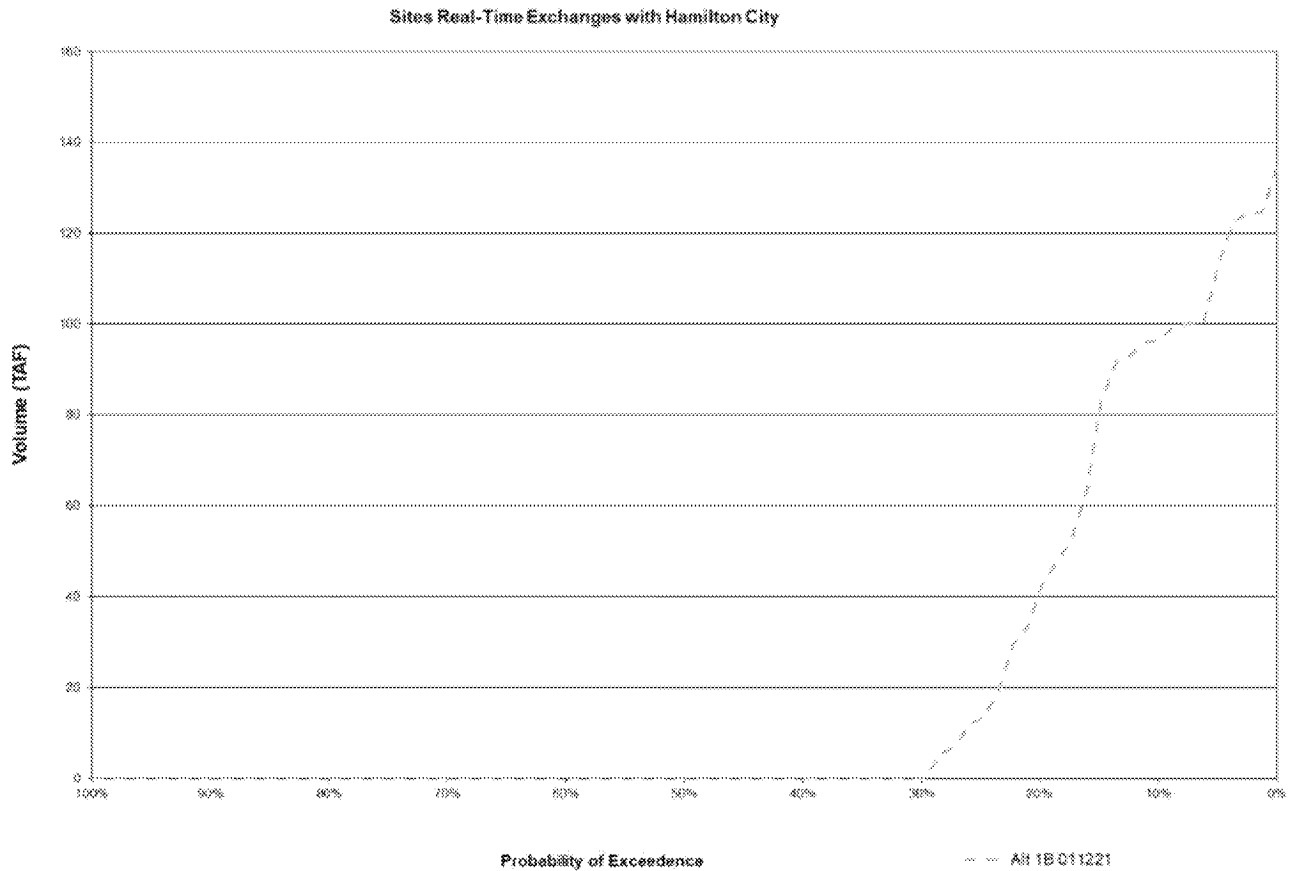
Daily operations will be coordinated closely with the GCID's operations in Hamilton City. In particular, operations will be coordinated during the shoulder and transition seasons, when diversions for the Project are occurring at the same time as deliveries for GCID. Close operations will also be necessary for real-time exchanges, when GCID will receive water from the Project in lieu of diversions from the Sacramento River. GCID will remain the lead operator of the HCPP and the GCID Main Canal. The Authority will have an operator responsible for the diversions into the Sites Reservoir at TRR via the TRR PGP. GCID operations will take priority over Project operations, although the two entities will coordinate closely to adjust operations to achieve operating objectives.

It is anticipated that the Project's SCADA system will also duplicate some of the GCID system. This will allow logic and alarms to respond appropriately to changing conditions along the canal and in the TRR. The Authority will work with GCID in responding to any emergency operations required, and coordination with GCID will be included in Project's Emergency Action Plan.



## 7.2 Real-time Exchanges

To support timing of releases and deliveries to Storage Partners north and south of the Delta, in-lieu exchanges with local Storage Partners may occur. This type of exchange is most likely to occur with GCID but could also occur with TCCA or other Sacramento River Settlement Contractors and likely would require close coordination with Reclamation. Instead of diverting all of its supply from the Sacramento River, the local Storage Partner would receive a portion of its water from Sites Reservoir. A portion of the water released from Shasta Lake to meet the local Storage Partner’s supply would be left in the Sacramento River (i.e., not diverted by that contractor or agency) and used for other Storage Partners. This exchange is expected to occur to minimize capacity constraints along the Dunnigan Pipeline as well as the delivery of water to Storage Partners upstream of the release facilities (e.g., Carter Mutual and Reclamation District 108). Figure 20 depicts the exceedance curve associated with the real-time exchanges at Hamilton City. On average, 21 TAF are exchanged through this process.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 20. Sites Real-time Exchanges with Hamilton City**

## **8.0 Central Valley Project and State Water Project Cooperative Operations and Exchanges**

### **8.1 Operational Agreement and Annual Coordination**

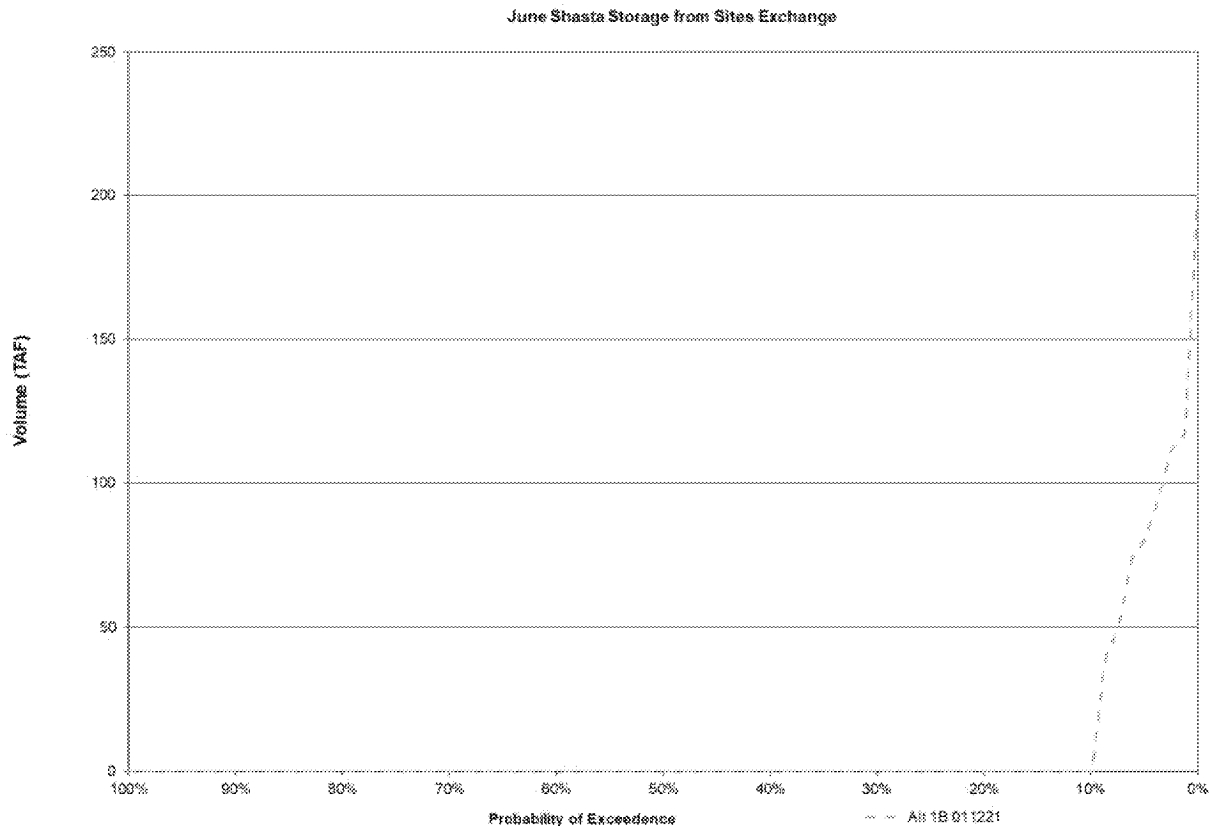
Success of the Project requires close coordination with Reclamation and DWR. The Authority is currently developing an operational agreement with these agencies to address issues related to operations of the Project. Through the implementation of this agreement, it is expected that the Project will cooperatively interface with the existing and ongoing real-time decision-making processes while working to avoid and minimize adverse effects and, potentially, provide benefit to CVP and SWP facilities, operational plans, listed species, public health, safety, and water supply reliability.

The operational agreement is expected to describe the use of State and federal facilities, seasonal operating goals, use of power and energy, and exchanges of water between Sites Reservoir, the CVP, and the SWP.

It is anticipated that the accounting for exchanges between the Authority, DWR, and Reclamation can occur within the framework of the COA because of mutual places of use, particularly south of the Delta. The parties have discussed COA accounting, and DWR and Reclamation will coordinate on COA issues that will need to be addressed as the Project develops to facilitate the ability of the Project to function as described here and in the Revised Draft EIR/Supplemental Draft EIS. COA administrative actions between Reclamation and DWR will be coordinated with the Authority and are not expected to affect the construction schedule or ongoing Project operations.

### **8.2 Exchanges with Reclamation**

Exchanges with Shasta Lake would be formulated to target cold water pool preservation and anadromous fish benefits. Shasta Lake exchanges would occur in years when forecast temperature-based mortality of early life stage winter-run Chinook salmon would be reduced if the exchange is in place. Under a Shasta Lake exchange, water would be released from the Sites Reservoir in the spring to meet CVP purposes, including CVP water service and/or repayment contractors or Central Valley Project Improvement Act (CVPIA) refuge needs in the Sacramento Valley that could physically receive water from Sites Reservoir. By reducing releases from Shasta Lake in the spring, the storage and cold water pool in Shasta Lake would be preserved for use later in the year, typically during critical months of the cold water pool management season (August and September). In late summer and fall (i.e., August through November), Reclamation would release an equivalent amount of water from Shasta Lake for Storage Partners. A memorandum identifying the modeled criteria for Shasta Exchanges is included as Attachment E. Figure 21 depicts the exceedance plot from models demonstrating volume exchanged with Shasta. As shown, exchanges do not occur frequently but can be sizeable when they do occur. As with other modeling presented in this Reservoir Operations Plan, actual exchange volumes could vary beyond modeled amounts.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 21. January to December Shasta Storage from Sites Exchange**

Exchanges could also occur with Folsom Lake, but these exchanges are not modeled. If they occur, Folsom Lake exchanges would be operated similarly to exchanges with Shasta Lake. Sites Reservoir would release water in the spring and early summer to meet CVP purposes in lieu of Reclamation releases at Folsom Lake. An equivalent amount of water would then be released from Folsom Lake in the late summer and fall for Storage Partners. All exchange water would be released from Folsom Lake in late summer and fall and no exchanged water would be carried over from year to year.

Discussions with Reclamation on expanded exchanges are currently underway and are anticipated to be included in the Project’s Biological Assessment and Final EIR/EIS. Exchanges may be expanded such that greater volumes would be held in Shasta Lake. Other options include changes in Project operations to allow for greater spring pulse flow actions or improved fall flow stability downstream of Keswick on the Sacramento River.

### 8.3 Reclamation as an Investor

Reclamation is anticipated to be a Storage Partner. This Operations Plan and all modeling results shown assume a federal cost-share of up to 7 percent, resulting in approximately 91 TAF of active storage allocated to Reclamation in accordance with Alternative 1B in the Revised Draft EIR/Supplemental Draft EIS. The federal cost share could be as high as 25 percent. In accordance with Reclamation’s Federal Feasibility Study for the Project, Reclamation’s storage in Sites Reservoir could be used for the purpose of CVP Operational Flexibility. Operational Flexibility is defined in the Federal Feasibility Study as follows:

The operational flexibility purpose is defined as the benefit accruing to the Federal government from an increased ability to allocate additional water supplies through an investment by the United States in a water supply project. The water supply project would be functionally integrated with the CVP from a water rights and/or contractual basis. The investment would enable the Federal Government to deliver water for beneficial use and better meet authorized project purposes by increasing the efficiency, reuse, or multiple use of existing supplies or by reducing impacts of regulatory or capacity constraints on an existing Reclamation project.

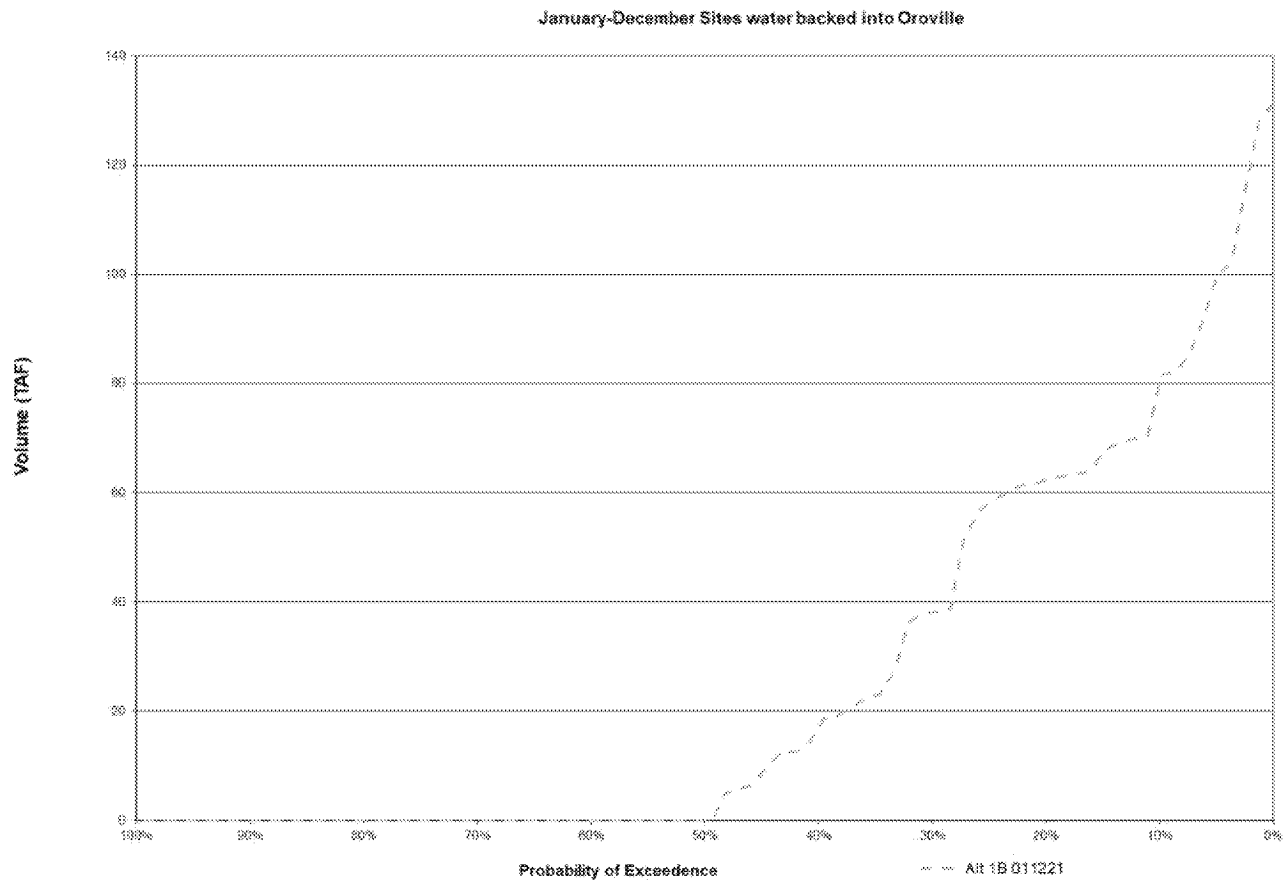
The Project would provide Reclamation an additional water source that could allow for higher allocations in accordance with CVP contracts or releases for environmental restoration, CVPIA refuges, or anadromous fish water quality.

The Authority expects to enter into an agreement with Reclamation relative to the Federal investment in the project. The use of Reclamation's storage in Sites Reservoir may vary, and this Reservoir Operations Plan will be updated accordingly.

## **8.4 Exchanges with DWR**

Exchanges with Lake Oroville would be formulated primarily to facilitate Project deliveries to Storage Partners. The exchanges may also improve cold water pool conditions at Lake Oroville. Exchanges with Lake Oroville are expected to happen more frequently and would be driven by a variety of factors. Under a Lake Oroville exchange, water would be released from the Sites Reservoir primarily in June and July to meet SWP purposes. By reducing releases from Lake Oroville in these months, the storage in Lake Oroville would be preserved for use later in the year. In late summer and fall (i.e., August through November), DWR would release an equivalent amount of water from Lake Oroville for Storage Partners. All exchange water would be released from Lake Oroville in late summer and fall and no exchanged water would be carried over from year to year. A memorandum identifying the modeled criteria for Oroville exchanges is included as Attachment F.

Figure 22 depicts the exceedance plot from models demonstrating volume exchanged with Oroville. As shown, exchanges occur more frequently than those with Shasta, although the peak exchange volumes are not as great. Actual volumes in real-time operations are expected to vary.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 22. January to December Sites Water Backed into Oroville**

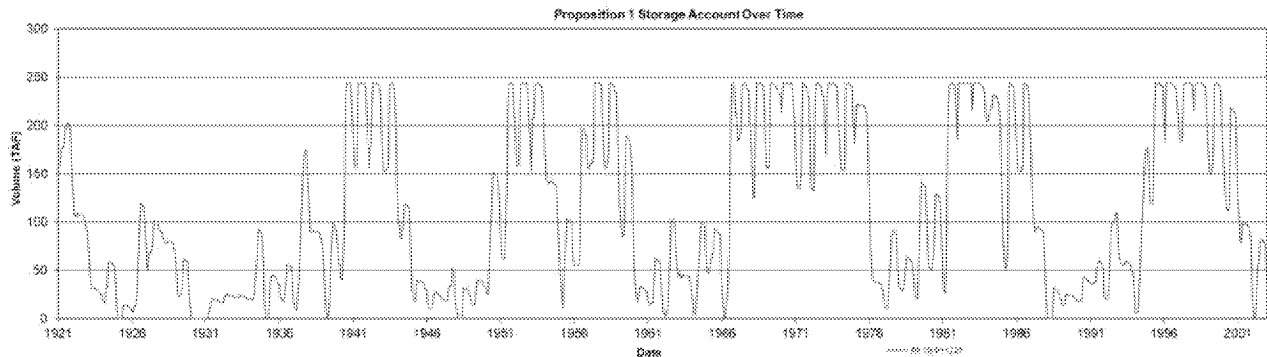
## 8.5 Operations for Proposition 1 Benefits

A defined Proposition 1 public benefits storage account will be established in Sites Reservoir to be managed by the State to provide water for ecosystem purposes. The Storage Allocation assumed for Proposition 1 purposes is 244 TAF. This amount is comparable to the cost-share paid by the State for environmental benefits (does not include funding for recreation or flood). There are two benefits funded by the State through Proposition 1: flows through the Yolo Bypass/Cache Slough Complex and delivery of Incremental Level 4 water north and south of the Delta.

Flows to the Yolo Bypass will be conveyed through the Knights Landing Ridge Cut via Funks Reservoir, the TC Canal, the Dunnigan Pipeline, and the CBD (described in Section 6.2). Project water will be released in the summer and fall (i.e., August through October) to help increase productivity in the lower Cache Slough and lower Sacramento River areas. This flow is intended to increase desirable food sources for Delta smelt in the late summer and early fall. Sites Reservoir average annual releases to the Yolo Bypass under historic hydrology range from 14 to 63 TAF, depending on water year type. Long-term average releases for the Yolo Bypass are estimated to be 41 TAF.

Project water will also be provided to supplement supply for Incremental Level 4 water north and south of the Delta to provide improvements to managed wetlands. Most water released for this purpose will be exported to managed wetlands south of the Delta. Sites Reservoir average annual releases for Incremental Level 4 water supply under historic hydrology range from 2 to 40 TAF, depending on year

type, with long-term average releases for this purpose of 19 TAF. Approximately 5 TAF over the long-term average is expected to go north of the Delta. Figure 23 shows the level of the Proposition 1 storage account in Sites Reservoir based on historic hydrology, assuming Sites Reservoir is built and today's regulatory environment is in place.



Source: CalSim II modeling for Alternative 1B (Alt 1B 011221) in the Revised Draft EIR/Supplemental Draft EIS

**Figure 23. Proposition 1 Storage Account Over Time**

The values provided in this section assume all environmental water for Proposition 1 goes to the funded benefits in accordance with the Authority's Feasibility Study developed for the California Water Commission. However, it is the Authority's intent that this account be flexibly managed so that water could potentially go to other sources to maximize the environmental benefits. The Authority is working with CDFW and other stakeholders on how this account will be managed and the way the benefits are realized. The management of storage and deliveries for benefits will be finalized through an agreement with CDFW that will be developed in 2022/2023.

## 9.0 Funks and Stone Corral Creeks

In the construction of Sites Reservoir, Funks and Stone Corral Creeks would be impounded in the inundation area by the construction of the Golden Gate Dam and the Sites Dam, respectively. During Project operations, releases would be made from Sites Reservoir into Funks and Stone Corral Creeks. These releases would be made to comply with California Fish and Game Code Section 5937 and to ensure no harm to downstream water right holders on these creeks.

Detailed release schedules for releases into Funks and Stone Corral Creeks have not been developed due to lack of information on the conditions in these creeks. Field studies would be conducted once access is obtained and before final designs for Sites Dam and Golden Gate Dam are completed to determine the following:

- ∞ Existing fish assemblage in these creeks, including fish species presence and habitat use;
- ∞ Characterization of habitats available (e.g., spawning, rearing, foraging, and sheltering habitats) at varying flow levels;
- ∞ Characterization of flows, including assessing the base flow during the summer months;
- ∞ Conducting a fluvial geomorphologic study to characterize bed load and flow levels necessary for mobilization;
- ∞ Surface Water Ambient Monitoring Program technical study (i.e., bioassessment) that focuses on relationships between physical habitat, water quality, and benthic macroinvertebrates; and

- ∞ Hydrological studies to define flow temperature relationships.

Using information from these field studies, along with currently available information on water right holders downstream of the reservoir in both creeks, the Authority will prepare a Funks and Stone Corral Creeks flow schedule that will be incorporated into this Operations Plan that would identify the approach for releases, including release schedules and volumes, a monitoring plan, and an adaptive management plan. Releases into these creeks would be made in consideration of the flood control benefits of the Project and would not overtop the stream banks and flood downstream areas.

Releases into Funks Creek would be made through a new pipeline that terminates at Funks Creek below the dam. These facilities would have a normal operating release range of 0 to 100 cfs into Funks Creek. Releases into Stone Corral Creek would be made through the permanent outlet at Sites Dam. This outlet would normally release 0 to 100 cfs, with an emergency release capacity of up to 4,700 cfs.

The Authority has also entered into a Memorandum of Understanding with Colusa County that would allocate net flows from Stone Corral and Funks creeks to the County's Storage Allocation in the reservoir, where net flow equals inflow from the creek minus any required releases into the creeks downstream. The evaporation and seepage losses would also be allocated to the County's Storage Allocation consistent with all other water stored in the reservoir. Future versions of this Operations Plan will include more detail on how inflows from Funks and Stone Corral Creeks will be determined.

## 10.0 Recreation, Flood Control, and Health and Safety Considerations

### 10.1 Emergencies

The Project includes the design and operation of facilities to meet California Division of Safety of Dams criteria and requirements for emergency reservoir drawdown. During an emergency release event, Saddle Dam 8B, the I/O works, and Sites Dam may operate simultaneously to release water. Once the water surface elevation falls below the levels of the saddle dam spillway elevation, the I/O works and Sites Dam would operate solely to release the remaining water. The emergency releases would be in accordance with Division of Safety of Dams requirements and would occur as follows:

- ∞ Under Alternatives 1, 2, and 3, the spillway on Saddle Dam 8B would release to Hunters Creek. The size of the spillway would accommodate the peak outflow of a probable maximum flood event or the steady-state flow if an over-pumping event occurred. The design and size of the spillway were developed with the assumption that a probable maximum flood overflow event and an over-pumping event have a very low probability of occurring simultaneously.
- ∞ The permanent outlet on Sites Dam would release to Stone Corral Creek at a maximum rate of approximately 4,700 cfs.
- ∞ The I/O tunnels would release to Funks Reservoir and the TRR at a rate of approximately 16,000 cfs, with 9,000 cfs being discharged to Funks Reservoir and 7,000 cfs to the TRR with a maximum velocity of 40 cfs in the pipelines.

An Emergency Action Plan will be developed and implemented for Project construction and operation. The Emergency Action Plan will include (1) a summary of responsibilities, (2) notification procedures and flowchart, (3) emergency response process, (4) preparedness for different emergencies, and

(5) potential inundation mapping. The Emergency Action Plan will also identify the frequency for desktop and full exercises to prepare for emergencies.

## **10.2 Flood Damage Reduction**

In addition to the emergency drawdown requirements described above, the Project will provide flood damage reduction benefits to portions of Colusa County, including Maxwell and the surrounding agricultural areas. Incidental storage in Sites Reservoir would capture and store flood flows from the Funks Creek and Stone Corral Creek watersheds. These flood damage reduction benefits are inherent to the Project design and would occur regardless of the Project's operations for water supply and water-related environmental benefits. While the reservoir would not be operated with flood reduction as a primary objective, the Authority may consider adjusting operations to reduce flood damage as requested by local, state, or federal entities.

## **10.3 Recreation Considerations**

In accordance with the Storage Principles, Sites Reservoir will provide water supply and water supply related environmental benefits, including water quality benefits ("Primary Benefits") and flood control, recreation, and power generation benefits ("Secondary Benefits"). Sites Reservoir will be operated so as to maximize the Primary Benefits for the Storage Partners. Secondary Benefits are considered incidental to the Project and will be subordinate to the provision of Primary Benefits.

The Authority will develop a Recreation Management Plan. The Recreation Management Plan will discuss the operation of the Recreation facilities, including how those operations may change depending on storage volume in the reservoir.

## **11.0 Changes to this Operations Plan**

This Operations Plan will be updated as details surrounding Project permits, including the water right, are further defined. Version 1 of this Operation Plan may be updated with editorial or minor corrections and additions as requested by Project Storage Partners or Authority's Agents. All changes to this plan will be routed through the Ad Hoc Operations and Engineering Workgroup.



# Attachment A

## Sites Storage Partners as of December 2021

American Canyon, City of
Antelope Valley - East Kern Water Agency
Carter Mutual Water Company
Coachella Valley Water District
Colusa County
Colusa County Water District
Cortina Water District
Davis Water District
Desert Water Agency
Dunnigan Water District
Glenn-Colusa Irrigation District
Irvine Ranch Water District
LaGrande Water District
Metropolitan Water
Reclamation District 108
Rosedale-Rio Bravo Water Storage District
San Bernardino Valley Municipal Water District
San Geronio Pass Water Agency
Santa Clara Valley Water District
Santa Clarita Valley Water District
Westside Water District
Wheeler Ridge-Maricopa Water Storage District
Zone 7 Water Agency
State of California
United States Bureau of Reclamation

# Attachment B

Principles for the Storage, Delivery and Sale of Sites Reservoir Project Water

PRINCIPLES FOR THE STORAGE, DELIVERY AND SALE  
OF SITES RESERVOIR PROJECT WATER

**APPLICABILITY**

(1) These Principles For The Storage, Delivery And Sale of Sites Reservoir Project Water ("Principles") adopted by the Sites Project Authority ("Authority") on April 21, 2021, supersede the Storage Policy adopted by the Authority on August 26, 2019.

**PURPOSE AND SCOPE**

(2) These Principles are intended to guide and assist the Authority as it moves forward with the Sites Reservoir Project ("Project"). To that end, these Principles will serve as the basic framework for development, adoption and/or execution of additional or more formal agreements, policies and procedures related to the storage, delivery and sale of Sites Project water, as needed.

**DEFINITIONS**

(3) **Authority** – For the purposes of these Principles, the term Authority collectively refers to the Sites Project Authority and its standing Reservoir Committee. The final roles and responsibilities of the Authority and the Reservoir Committee in the day-to-day operations of Sites Reservoir have not yet been defined and the term Authority is used to refer to both entities collectively.

(4) **Available Storage** – That portion of Sites Reservoir that can be filled, minus dead storage and any storage space intentionally left unfilled at the direction of the Storage Partner who has contracted for that storage space.

(5) **Beneficiary Pays Principle** – The principle for allocating all costs associated with delivering certain Project benefits, including public and non-public benefits, to the party receiving such benefits.

(6) **OM&R** – Those costs associated with the operation, maintenance and repair/replacement of Project facilities. These can be broken down into: (a) Fixed OM&R costs that are more predictable year-to-year and that are not significantly influenced by varying diversions or releases of water; and (b) Variable OM&R costs that vary based on actual operations each year, including costs associated with water transfers or exchanges.

(7) **Sites Reservoir Project (Project)** – Sites Reservoir and associated diversion and conveyance facilities.

(8) **Sites Water** – Water that is appropriated under the Authority's water right.

(9) **Storage Allocation** – The amount of storage space (storage volume) in Sites Reservoir allocated to a Storage Partner, as agreed upon in that Storage Partner's Water Storage and Supply Services Contract and the amount of storage space shared or leased, if any, pursuant to Paragraph 25 of these Principles. Dead storage is not allocated to any Storage Partner.

(10) **Storage Partners** – The governmental agencies, water organizations and others who have funded and received a Storage Allocation in Sites Reservoir and the resulting water supply or water supply related environmental benefits from the Project. Storage Partners could include local agencies, the State of California, and the Federal Government.

**(11) Water Storage and Supply Services Contract** – That agreement, by whatever name, between the Authority and a Storage Partner that provides for the Storage Partner to obtain the Primary Benefits of the Project provided the Storage Partner meets the funding and other obligations of that agreement.

#### **PRIORITY OF OPERATION**

**(12)** Sites Reservoir will provide water supply and water supply related environmental benefits, including water quality benefits ("Primary Benefits"), as well as flood control, recreation, and power generation benefits ("Secondary Benefits"). Sites Reservoir will be operated so as to maximize the Primary Benefits for the Storage Partners. Secondary Benefits are considered incidental to the Project and will be subordinate to the provision of Primary Benefits.

#### **ROLES**

**(13) Authority** - The Authority will develop, own, operate, and maintain the Project. The Authority will obtain and comply with all permits, approvals and agreements needed to construct, operate and maintain the Project. The Authority will oversee the planning, permitting, and day-to-day operations and accounting of Sites Reservoir storage, releases and losses and related activities, including coordination with each Storage Partner. This will be done in a way that is open and transparent to all Storage Partners.

**(14) Storage Partners** – The Storage Partners are responsible for managing their Storage Allocation and for paying their allocated capital, fixed OM&R, and variable OM&R costs.

#### **WATER STORAGE AND SUPPLY SERVICES CONTRACTS**

**(15)** The Authority will enter into Water Storage and Supply Services Contracts with individual Storage Partners for the use of Project facilities. Each Water Storage and Supply Services Contract will be based on a Storage Partner's Storage Allocation.

#### **WATER RIGHT AND POINT OF DELIVERY**

**(16)** The Authority will apply for and hold the water right for the Project. In developing the Project and its operations, the Authority will divert water to maximize beneficial use and perfect the water right. The Authority will be responsible for compliance with the terms and conditions in the water right and any other permits, approvals, and agreements that control diversion of water to storage for the Project. The Storage Partners will be responsible for using Sites Water within the terms and conditions allowed in the Authority's water right and for providing the Authority with any information it may need to comply with reporting or other requirements. To the extent permitted by applicable law and with the cooperation of the Storage Partners, the Authority will undertake all reasonable measures to manage, control and protect Sites Water, including initiating any appropriate enforcement proceedings to prevent unlawful diversion of or interference with Sites Water.

**(17)** The Authority will manage Sites Water from the points of diversion to the primary point of delivery. The primary point of delivery for each Storage Partner will be Funks Reservoir or the Terminal Regulating Reservoir. For Sites Water delivered to Storage Partners not served by the Tehama-Colusa Canal or the Glenn Colusa Irrigation District's distribution system, the Authority may retain control of Sites Water to a secondary point of delivery, as agreed upon by the Authority and the Storage Partner in the respective Water Storage and Supply Services Contract. Storage Partners will be responsible for all losses after the primary point of delivery.

## **STORAGE OF WATER BY DIVERSION**

**(18)** The Authority will take all actions practicable to maximize the diversion of water into Available Storage consistent with regulatory requirements, physical and operational constraints, and hydrologic conditions. Water diverted will be allocated to each Storage Partner's contractual storage space proportional to its Storage Allocation.<sup>1</sup> If a Storage Partner's Storage Allocation is not available, the available water will be allocated to the remaining Storage Partners who have available Storage Allocation space proportional to their Storage Allocation.

**(19)** The Authority will establish a process, including schedule, that allows for a Storage Partner to determine the maximum amount of water allocated to the Storage Partner's Storage Allocation each year along with a process to make changes to this amount. A Storage Partner may opt out of having water allocated to their Storage Allocation if they so inform the Authority through the process established by the Authority.

**(20)** The diversion of water to storage will take priority over the release of stored water. The diversion of Sites Water to storage will take priority over the diversion of water from other sources to storage.

## **STORAGE OF WATER FROM OTHER SOURCES**

**(21)** Storage Partners may request that the Authority place water from sources other than Sites Water into storage and allocate that water to their Storage Allocation. The Authority will take all reasonable steps to facilitate these requests, subject to the Beneficiary Pays Principle. Placing water into storage from other sources must not negatively impact other Storage Partners, Project operations or financing.

**(22)** If there is a conflict between placing water into storage in Sites Reservoir from other sources of water and the release of water from Sites Reservoir at the same time, the Authority will prioritize diversions but take reasonable measures to accommodate both Storage Partners' requests.

## **ACCOUNTING FOR LOSSES**

**(23)** Losses of water held in Sites Reservoir storage – including but not limited to evaporation, seepage, and any releases for dam safety or emergency conditions – will be allocated proportionally to each Storage Partner based on the amount of its water in storage.

## **SHARING OR LEASING OF STORAGE ALLOCATION**

**(24)** Storage Partners are allowed to share or lease their Storage Allocation with other Storage Partners or other entities. The terms of sharing or leasing are at the discretion of the Storage Partners who are parties to a storage or lease agreement but must not negatively impact other Storage Partners, Project operations or financing. Any sharing or leasing of Storage Allocation must

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<sup>1</sup> For example, if 275,000 acre-feet of water is able to be diverted to Sites Reservoir in any one year, this represents 20% of the total allocated storage space in Sites Reservoir (275,000/1.38 million acre-feet = 20%). In that year, each Storage Partner would receive an amount of water equal to 20% of their Storage Allocation, unless the Storage Partner has opted out of having water allocated to their Storage Allocation or their Storage Allocation is full. This example assumes a 1.5 million acre-foot reservoir with about 120,000 acre-feet allocated to dead pool.

be coordinated with the Authority. A Storage Partner may not transfer or assign any of its rights or obligations as part of any sharing or leasing agreement.

### **SALE OF SITES WATER**

**(25)** Storage Partners are allowed to sell water held in their Storage Allocation to other Storage Partners or other entities. The terms of sales of water held in a Storage Allocation are at the discretion of the Storage Partners who are parties to the sale but must not negatively impact other Storage Partners, Project operations or financing. Any sale of water held in a Storage Allocation must be coordinated with the Authority. A Storage Partner may not transfer or assign any of its rights or obligations as part of any sale of water. The receiving Storage Partner or other entity must have sufficient available Storage Allocation to store the water or release the water upon purchase.

### **RELEASES OF WATER FROM STORAGE**

**(26)** To the extent allowed by the Project's permits, approvals and agreements and its physical and operational capabilities, Storage Partners have total discretion on the amount of water held in their Storage Allocation that they request to be scheduled for release for their use, and will have control over the use of their Storage Allocation space based on the conditions set forth in these Principles.

**(27)** Each year, the Authority will make a water storage forecast for each Storage Partner. Each Storage Partner will provide the schedule and amounts of the water they wish to be released in that year. The Authority will establish a process, including schedule, that allows for the Storage Partner to make changes to its water schedule and amounts for release throughout the year.

**(28)** The Authority will work with each Storage Partner, the State Water Project, Central Valley Project, Tehama Colusa Canal Authority, the Glenn Colusa Irrigation District, entities along the Colusa Basin Drain, and regulatory agencies and make all reasonable efforts to satisfy the water release schedules requested by each Storage Partner. If there is a release constraint affecting the ability of the Authority to meet the requested water release schedules, the Authority will work with those conflicted Storage Partners to see if accommodations can be made. If the conflict cannot be resolved, releases will be made in proportion to the Storage Allocation attributable to the conflicted Storage Partners.

### **UNIFORM STANDARDS FOR ALL STORAGE PARTNERS**

**(29)** All Storage Partners are subject to uniform standards in the operation of the Project. Uniform standards include, but are not limited to, priority of diversions, storage, releases, and conveyance of Sites Water through Project facilities and utilization of their respective Storage Allocation.

### **CONFLICT RESOLUTION**

**(30)** The Authority will develop a conflict resolution mechanism to resolve conflicts that may arise in Project operations. This conflict resolution process will be included in the Water Storage and Supply Services Contract.

### **FUTURE CHANGES**

**(31)** It is anticipated that these Principles will evolve and change as the Project develops and as permits, approvals, and agreements are obtained and executed. These Principles may be modified in the future by the Authority.

DATE

April 21, 2021

# Attachment C

## Methodology for Allocating Reservoir Storage





Topic: Reservoir Committee Meeting Agenda Item 2.2

2021 April 16

Subject: Approach for Allocating Storage Space in the Reservoir

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**Requested Action:**

Approve the recommended methodology for allocating storage space in Sites Reservoir to each local Storage Partner using the final proposed formulaic approach of 1 acre-foot Amendment 2 participation to 6.234 acre-feet of storage space.

**Detailed Description/Background:**

An important component of the Principles for the Storage, Delivery and Sale of Sites Reservoir Project Water (Storage Principles), and a foundational principle of the Sites Project, is that each Storage Partner has allocated storage space in Sites Reservoir (termed “Storage Allocation” in the Storage Principles discussed in Item 2.1 of today’s agenda). This Storage Allocation is managed by the Storage Partner to optimize the benefits received from the Sites Project and is used to determine the proportion of diverted water provided to each Storage Partner.

If approved, the recommended method would identify the amount of storage allocation to each Storage Partner. Future documents and contracts would include the amount of storage allocated to the respective Storage Partner.

In February 2021, staff reviewed principles and objectives of allocating reservoir storage with the Reservoir Committee and Authority Board. Principles included equitable treatment between local participants, confirming neither the State nor Reclamation receive disproportionate benefits when compared to local participants, and considerations of the Credit Reimbursement Policy. Staff reviewed the proposed allocation again in March 2021 to provide participants a second opportunity to review and ask questions.

The proposed allocation for local, State and Federal Storage Partners, based on a 1.5 million acre-foot reservoir, is shown in Table 1 below.

**Table 1. Summary of Storage Allocation for Local, State and Federal Storage Partners**

Storage Type	Storage Allocation (thousand acre-feet)	Percent Active Storage
Dead Pool	120	N/A
State – CDFW	244	17.7%
Federal - Reclamation (low end of range)	91	6.6%
Local Storage Partners	1,045	75.7%
Total	1,500	100%

The State Storage Allocation is estimated based on the amount of storage required to meet ecosystem benefits awarded through Proposition 1 which is to be “trued up” later this year through the State’s feasibility evaluation.

The Federal Storage Allocation is based on assumptions consistent with Alternative 1B, the Authority’s preferred alternative in the Revised Draft EIR/Supplemental Draft EIS. Up to 25% cost share was found to be feasible by the Secretary of Interior and could be accommodated with voluntary reductions in the local agency participation consistent with Alternative 3 in the Revised Draft EIR/Supplemental Draft EIS if funding is available. Increasing the reservoir size beyond 1.5 million acre-feet is not being contemplated at this time.

A recommended methodology for allocating storage to local Storage Partners was provided in February and March 2021 and remains unchanged. The recommended method is the following mathematical conversion based on a 1.5 million-acre-foot reservoir:

$$\text{Existing participation} \times 6.234 = \text{Storage Allocation}$$

Example: 1,000 acre-feet per year Amendment 2 participation = 6,234 acre-feet  
Storage Allocation

The recommended methodology allocates all available storage based on existing participation and after accounting for estimated storage for the State and Federal government along with the dead pool. The State and Federal estimates are expected to be finalized over the next six to nine months. The final State and Federal numbers can affect the local storage amounts but the proportionate shares of the local storage among the participants would remain unchanged. Similarly, using the Alternative 2 reservoir size of 1.3 million-acre-feet would have an effect on the local storage amount allocated to each participant but the proportionate share of space among participants would remain the same.

The recommended methodology was reviewed and recommended for approval by the Storage Policy Small Group and the Ad Hoc Reservoir Operations and Engineering Workgroup. Staff recommends that the Reservoir Committee approve the recommended methodology for allocating storage space in Sites Reservoir to each local Storage Partner using the final proposed formulaic approach of 1 acre-foot Amendment 2 participation to 6.234 acre-feet of storage space.

**Prior Action:**

March Meetings & February 19, 2021: Reviewed and commented on the approach for allocating storage space in the reservoir.

**Fiscal Impact/Funding Source:**

None.

**Staff Contact:**

Ali Forsythe

**Attachments:**

Attachment A - Storage Allocation Based on Amendment 2 Participation

Storage Allocation Based on Amendment 2 Participation Levels  
 April 16, 2021

Participant Name	Storage (AF)	% Active Storage
Antelope Valley-East Kern WA	3,117	0.2%
Carter MWC	1,870	0.1%
City of American Canyon	24,937	1.8%
Coachella Valley WD	62,343	4.5%
Colusa County	62,343	4.5%
Colusa County WD	62,799	4.6%
Cortina WD	2,805	0.2%
Davis WD	12,469	0.9%
Desert WA	40,523	2.9%
Dunnigan WD	18,528	1.3%
Glenn-Colusa ID	31,172	2.3%
Irvine Ranch WD	6,234	0.5%
LaGrande WD	6,234	0.5%
Metropolitan Water District of SC	311,717	22.6%
Reclamation District 108	24,937	1.8%
Rosedale-Rio Bravo WD	3,117	0.2%
San Bernardino Valley Municipal WD	133,415	9.7%
San Geronio Pass WA	87,281	6.3%
Santa Clara Valley WD	3,117	0.2%
Santa Clarita Valley WA	31,172	2.3%
Westside WD	33,510	2.4%
Wheeler Ridge - Maricopa WSD	19,015	1.4%
Zone 7 WA	62,343	4.5%
Reclamation	91,000	6.6%
State of California - Ecosystem	244,000	17.7%
Dead Pool	120,000	N/A
<b>Total</b>	<b>1,500,000</b>	<b>100%</b>

# Attachment D

Assumptions for Releases or Demands and Deliveries by Year Type

## Draft – Subject to Revision Sites Project: Participant Delivery Reports

This document summarizes Sites Project Participants Delivery Reports that have been prepared for Alternative 1A 011221, Alternative 1B 011221, Alternative 2 011221, and Alternative 3 020121. These reports allow each participant to see their long-term and water year-type average Sites Project deliveries as modeled in CalSim II.

### Summary of Reports

This document consists of a summary table and individual reports for each participant. The summary table reports the modeled end-point deliveries of Sites Project water to participants for each alternative. Participants are listed alphabetically, grouped by North of Delta and South of Delta.

The individual participants reports display long-term, dry, and critically dry water year, and water year type average end-point deliveries for each Sites Project participant. Water year types are assigned using the D-1641 Sacramento Valley 40-30-30 water year type calculation and annual averages are calculated on a March-February CVP contract year for North of Delta participants and a January-December SWP contract year for South of Delta participants.

### Assumptions

End-point deliveries of Sites Project water to each region was assigned proportionally to each participant based on their participation level in Amendment 2 on November 20, 2020.

The following assumptions apply to deliveries to each participant group:

#### Tehama-Colusa Canal Authority (TCCA)

Water is released from the TCCA Sites account with the intention of meeting up to 100% of participants' CVP contract amount. When water is not needed to meet TCCA participants contract amounts, water may be transferred to the South of Delta Participants account during May of Above Normal and Below Normal water years when account storage is over two-thirds of capacity. Releases are made directly to the Tehama-Colusa Canal. Deliveries are equal to these releases; no conveyance losses are assumed.

#### Glenn-Colusa Irrigation District (GCID)

Water is released from the GCID Sites account in April and May when CVP Settlement Contract deliveries are reduced to 75% in Shasta critical years. In all other years, except for wet years, water is transferred to the South of Delta Participants account. Releases are made directly to the Glenn-Colusa Canal. Deliveries are equal to these releases; no conveyance losses are assumed.

### Reclamation District 108 (RD-108) and Carter MWC

Water is released from the RD-108 and Carter MWC Sites account in April and May when CVP Settlement Contract deliveries are reduced to 75% in Shasta critical years. In all other years, except for wet years, water is transferred to the South of Delta Participants account. Releases are made through the Tehama-Colusa Canal to the Dunnigan Pipeline to facilitate an exchange with the Sacramento River. Deliveries are equal to these releases; no conveyance losses are assumed.

### County of Colusa

Water is released from the County of Colusa Sites account for groundwater replenishment. Releases are limited to 10 TAF per year from June through September. Releases are made directly to the Tehama-Colusa Canal. Deliveries are equal to these releases; no conveyance losses are assumed.

### South of Delta Participants

Water may be released from the South of Delta Participants Sites account in all but wet water years. There are four ways that water may be delivered to South of Delta Participants: direct release to the Sacramento River through the Dunnigan Pipeline, exchanges with Sacramento River at Hamilton City by replacing CVP diversions to GCID with releases from Sites, exchanges with Shasta Lake, and exchanges with the SWP at Lake Oroville. Releases are then exported from the Delta through Banks Pumping Plant. Exports of releases of South of Delta Participants water are limited to July through November.

Deliveries to South of Delta participants are based on the export at the Banks Pumping Plant. In these reports, deliveries are allocated based on Sites Project participation levels. The difference between the release from Sites Reservoir and Delta Exports accounts for carriage water and other losses. Exports to South of Delta Participants are subject to export availability. It is assumed that all South of Delta participants proportionally share exported water regardless of the pattern of exports.

### Limitations

These reports only include deliveries to Sites Project participants from the Sites PWA accounts. It does not report incidental changes in SWP and CVP deliveries or additional CVP deliveries due to CVP Operational Flexibility from federal investment in the Sites Project.

**Sites Project Deliveries**

DRAFT-Subject to Revision

Participant	Long Term Average Deliveries (TAF/year)			
	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>North of Delta Participants</b>				
Carter Mutual Water Company	0.03	0.03	0.03	0.02
Colusa County WD	10.4	9.7	9.9	8.2
Cortina WD	0.5	0.4	0.4	0.4
County of Colusa	7.0	6.9	7.0	6.7
Davis Water District	2.1	1.9	2.0	1.6
Dunnigan WD	3.1	2.9	2.9	2.4
Glenn Colusa Irrigation District	0.5	0.5	0.5	0.4
LaGrande Water District	1.0	1.0	1.0	0.8
RD-108	0.4	0.4	0.4	0.3
Westside W.D.	5.6	5.2	5.3	4.4
<b>Total NOD Delivery</b>	<b>30.5</b>	<b>28.9</b>	<b>29.3</b>	<b>25.2</b>
<b>South of Delta Participants</b>				
Antelope Valley East Kern WA	0.4	0.4	0.3	0.3
City of American Canyon	2.1	2.1	2.1	2.1
Coachella Valley Water District	7.8	7.2	7.0	5.6
Desert WA	5.1	4.7	4.5	3.7
Irvine Ranch Water District	0.8	0.7	0.7	0.6
Metropolitan Water District of Southern California	38.9	36.1	34.8	28.2
Rosedale-Rio Bravo Water District	0.4	0.4	0.3	0.3
San Bernardino Valley Municipal Water District	16.6	15.4	14.9	12.1
San Geronio Pass Water Agency	10.9	10.1	9.7	7.9
Santa Clara Valley WD	0.4	0.4	0.3	0.3
Santa Clarita Valley Water Agency	3.9	3.6	3.5	2.8
Wheeler Ridge-Maricopa WSD	2.4	2.2	2.1	1.7
Zone 7 Water Agency	7.8	7.2	7.0	5.6
<b>Total SOD Delivery</b>	<b>97.4</b>	<b>90.5</b>	<b>87.3</b>	<b>71.3</b>
<b>Total Sites PWA Delivery</b>	<b>127.9</b>	<b>119.4</b>	<b>116.6</b>	<b>96.5</b>

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for North of Delta participants
4. Annual average deliveries are calculated on a Jan-Dec SWP contract year for South of Delta participants
5. South of Delta deliveries are based on Authority exports modeled in CalSim II
6. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
7. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation



**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Carter Mutual Water Company

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Dry and Critically Dry Years</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.0	0.0	0.0	0.0
Dry Years	0.0	0.0	0.0	0.0
Critically Dry Years	0.2	0.2	0.2	0.1

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Colusa County WD

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>10.4</b>	<b>9.7</b>	<b>9.9</b>	<b>8.2</b>
<b>Dry and Critically Dry Years</b>	<b>24.3</b>	<b>22.6</b>	<b>23.3</b>	<b>19.4</b>
Wet Years	0.8	0.8	0.8	0.8
Above Normal Years	0.3	0.3	0.3	0.3
Below Normal Years	6.5	6.3	5.5	4.0
Dry Years	21.7	20.8	21.2	17.7
Critically Dry Years	28.3	25.2	26.4	22.0

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Cortina WD

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>
<b>Dry and Critically Dry Years</b>	<b>1.1</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.3	0.3	0.2	0.2
Dry Years	1.0	0.9	0.9	0.8
Critically Dry Years	1.3	1.1	1.2	1.0

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: County of Colusa

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>7.0</b>	<b>6.9</b>	<b>7.0</b>	<b>6.7</b>
<b>Dry and Critically Dry Years</b>	<b>8.7</b>	<b>8.5</b>	<b>8.7</b>	<b>7.8</b>
Wet Years	5.1	5.1	5.1	5.1
Above Normal Years	5.7	5.7	5.7	5.7
Below Normal Years	8.0	8.0	8.1	8.1
Dry Years	8.4	8.6	8.6	8.7
Critically Dry Years	9.1	8.3	8.7	6.5

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Davis Water District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>2.1</b>	<b>1.9</b>	<b>2.0</b>	<b>1.6</b>
<b>Dry and Critically Dry Years</b>	<b>4.8</b>	<b>4.5</b>	<b>4.6</b>	<b>3.9</b>
Wet Years	0.2	0.2	0.2	0.2
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	1.3	1.3	1.1	0.8
Dry Years	4.3	4.1	4.2	3.5
Critically Dry Years	5.6	5.0	5.2	4.4

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant:           Dunnigan WD

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>3.1</b>	<b>2.9</b>	<b>2.9</b>	<b>2.4</b>
<b>Dry and Critically Dry Years</b>	<b>7.2</b>	<b>6.7</b>	<b>6.9</b>	<b>5.7</b>
Wet Years	0.2	0.2	0.2	0.2
Above Normal Years	0.1	0.1	0.1	0.1
Below Normal Years	1.9	1.9	1.6	1.2
Dry Years	6.4	6.1	6.3	5.2
Critically Dry Years	8.4	7.4	7.8	6.5

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Glenn Colusa Irrigation District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.4</b>
<b>Dry and Critically Dry Years</b>	<b>1.4</b>	<b>1.2</b>	<b>1.4</b>	<b>1.2</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.0	0.0	0.0	0.0
Dry Years	0.3	0.2	0.3	0.2
Critically Dry Years	3.0	2.8	3.0	2.6

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: LaGrande Water District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>0.8</b>
<b>Dry and Critically Dry Years</b>	<b>2.4</b>	<b>2.2</b>	<b>2.3</b>	<b>1.9</b>
Wet Years	0.1	0.1	0.1	0.1
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.6	0.6	0.5	0.4
Dry Years	2.1	2.1	2.1	1.8
Critically Dry Years	2.8	2.5	2.6	2.2

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants



**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: RD-108

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>
<b>Dry and Critically Dry Years</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.0	0.0	0.0	0.0
Dry Years	0.1	0.1	0.1	0.1
Critically Dry Years	2.3	2.2	2.3	2.0

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Westside W.D.

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>5.6</b>	<b>5.2</b>	<b>5.3</b>	<b>4.4</b>
<b>Dry and Critically Dry Years</b>	<b>13.0</b>	<b>12.0</b>	<b>12.4</b>	<b>10.4</b>
Wet Years	0.4	0.4	0.4	0.4
Above Normal Years	0.1	0.1	0.1	0.1
Below Normal Years	3.5	3.4	2.9	2.2
Dry Years	11.6	11.1	11.3	9.4
Critically Dry Years	15.1	13.5	14.1	11.7

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Total NOD Delivery

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>30.5</b>	<b>28.9</b>	<b>29.3</b>	<b>25.2</b>
<b>Dry and Critically Dry Years</b>	<b>63.9</b>	<b>59.8</b>	<b>61.7</b>	<b>52.0</b>
Wet Years	6.8	6.8	6.8	6.8
Above Normal Years	6.2	6.2	6.2	6.2
Below Normal Years	22.0	21.7	20.0	16.8
Dry Years	55.8	54.1	55.1	47.4
Critically Dry Years	76.0	68.2	71.5	59.0

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Antelope Valley East Kern WA

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>
<b>Dry and Critically Dry Years</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.7</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.2	0.1	0.2	0.1
Dry Years	1.0	0.9	0.9	0.7
Critically Dry Years	0.9	0.9	0.8	0.7

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: City of American Canyon

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>2.1</b>	<b>2.1</b>	<b>2.1</b>	<b>2.1</b>
<b>Dry and Critically Dry Years</b>	<b>3.9</b>	<b>3.9</b>	<b>3.9</b>	<b>3.9</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	4.0	4.0	4.0	4.0
Dry Years	4.0	4.0	4.0	4.0
Critically Dry Years	3.7	3.7	3.7	3.7

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Coachella Valley Water District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>7.8</b>	<b>7.2</b>	<b>7.0</b>	<b>5.6</b>
<b>Dry and Critically Dry Years</b>	<b>19.5</b>	<b>18.2</b>	<b>17.3</b>	<b>14.2</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	3.1	2.8	3.2	2.2
Dry Years	20.8	18.9	18.6	14.6
Critically Dry Years	17.7	17.0	15.3	13.5

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Desert WA

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>5.1</b>	<b>4.7</b>	<b>4.5</b>	<b>3.7</b>
<b>Dry and Critically Dry Years</b>	<b>12.7</b>	<b>11.8</b>	<b>11.2</b>	<b>9.2</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	2.0	1.9	2.1	1.5
Dry Years	13.5	12.3	12.1	9.5
Critically Dry Years	11.5	11.1	9.9	8.8

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Irvine Ranch Water District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.8</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>
<b>Dry and Critically Dry Years</b>	<b>2.0</b>	<b>1.8</b>	<b>1.7</b>	<b>1.4</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.3	0.3	0.3	0.2
Dry Years	2.1	1.9	1.9	1.5
Critically Dry Years	1.8	1.7	1.5	1.4

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation



**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Metropolitan Water District of Southern California

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>38.9</b>	<b>36.1</b>	<b>34.8</b>	<b>28.2</b>
<b>Dry and Critically Dry Years</b>	<b>97.7</b>	<b>90.8</b>	<b>86.3</b>	<b>71.0</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	15.6	14.2	16.1	11.2
Dry Years	103.9	94.5	92.9	73.2
Critically Dry Years	88.4	85.2	76.4	67.7

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Rosedale-Rio Bravo Water District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>
<b>Dry and Critically Dry Years</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.7</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.2	0.1	0.2	0.1
Dry Years	1.0	0.9	0.9	0.7
Critically Dry Years	0.9	0.9	0.8	0.7

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: San Bernardino Valley Municipal Water District

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>16.6</b>	<b>15.4</b>	<b>14.9</b>	<b>12.1</b>
<b>Dry and Critically Dry Years</b>	<b>41.8</b>	<b>38.9</b>	<b>37.0</b>	<b>30.4</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	6.7	6.1	6.9	4.8
Dry Years	44.5	40.5	39.8	31.3
Critically Dry Years	37.8	36.5	32.7	29.0

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: San Geronio Pass Water Agency

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>10.9</b>	<b>10.1</b>	<b>9.7</b>	<b>7.9</b>
<b>Dry and Critically Dry Years</b>	<b>27.4</b>	<b>25.4</b>	<b>24.2</b>	<b>19.9</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	4.4	4.0	4.5	3.1
Dry Years	29.1	26.5	26.0	20.5
Critically Dry Years	24.7	23.9	21.4	19.0

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Santa Clara Valley WD

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>
<b>Dry and Critically Dry Years</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.7</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	0.2	0.1	0.2	0.1
Dry Years	1.0	0.9	0.9	0.7
Critically Dry Years	0.9	0.9	0.8	0.7

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Santa Clarita Valley Water Agency

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>3.9</b>	<b>3.6</b>	<b>3.5</b>	<b>2.8</b>
<b>Dry and Critically Dry Years</b>	<b>9.8</b>	<b>9.1</b>	<b>8.6</b>	<b>7.1</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	1.6	1.4	1.6	1.1
Dry Years	10.4	9.5	9.3	7.3
Critically Dry Years	8.8	8.5	7.6	6.8

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Wheeler Ridge-Maricopa WSD

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>2.4</b>	<b>2.2</b>	<b>2.1</b>	<b>1.7</b>
<b>Dry and Critically Dry Years</b>	<b>6.0</b>	<b>5.5</b>	<b>5.3</b>	<b>4.3</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	1.0	0.9	1.0	0.7
Dry Years	6.3	5.8	5.7	4.5
Critically Dry Years	5.4	5.2	4.7	4.1

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Zone 7 Water Agency

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>7.8</b>	<b>7.2</b>	<b>7.0</b>	<b>5.6</b>
<b>Dry and Critically Dry Years</b>	<b>19.5</b>	<b>18.2</b>	<b>17.3</b>	<b>14.2</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	3.1	2.8	3.2	2.2
Dry Years	20.8	18.9	18.6	14.6
Critically Dry Years	17.7	17.0	15.3	13.5

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation



**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Total SOD Delivery

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>97.4</b>	<b>90.5</b>	<b>87.3</b>	<b>71.3</b>
<b>Dry and Critically Dry Years</b>	<b>243.2</b>	<b>226.2</b>	<b>215.3</b>	<b>177.7</b>
Wet Years	0.0	0.0	0.0	0.0
Above Normal Years	0.0	0.0	0.0	0.0
Below Normal Years	42.2	38.9	43.5	31.5
Dry Years	258.5	235.5	231.6	183.2
Critically Dry Years	220.1	212.3	190.8	169.6

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

**Sites Project Deliveries**

DRAFT-Subject to Revision

Sites Participant: Total Sites PWA Delivery

**Deliveries (TAF/year)**

	ALT 1A 011221	ALT 1B 011221	ALT 2 011221	ALT 3 020121
<b>Long-term Average</b>	<b>127.9</b>	<b>119.4</b>	<b>116.6</b>	<b>96.5</b>
<b>Dry and Critically Dry Years</b>	<b>307.1</b>	<b>286.0</b>	<b>277.0</b>	<b>229.8</b>
Wet Years	6.8	6.8	6.8	6.8
Above Normal Years	6.2	6.2	6.2	6.2
Below Normal Years	64.2	60.6	63.6	48.3
Dry Years	314.4	289.6	286.7	230.5
Critically Dry Years	296.1	280.5	262.3	228.6

**Notes:**

1. Water year types are calculated using the D-1641 Sacramento Valley 40-30-30 water year type calculation
2. End-point deliveries assume the NOD to SOD transfer operation as defined in the assumptions
3. Annual average deliveries are calculated on a Mar-Feb CVP contract year for NOD participants and on a Jan-Dec SWP contract year for SOD participants
4. South of Delta deliveries are based on Authority exports modeled in CalSim II
5. Deliveries do not include any San Luis reoperation or south of Delta storage agreements
6. South of Delta delivery arcs were combined and then deliveries were distributed proportional to participation

# Attachment E

## Memorandum Identifying Modeled Criteria for Shasta Exchanges

## Draft – Subject to Revision

### Sites Project: Shasta Lake Exchange Modeling Assumptions

This document summarizes Sites Reservoir exchange operations with Shasta Lake. Then, details Reclamation's Cold Water Pool management at Shasta, as described in ROC on LTO. Finally, modeling assumptions are tabulated and expected benefits of the Shasta Exchange operation are highlighted.

#### Summary of Shasta Exchange Operation

Shasta Exchange is designed to support the Cold Water Pool Management and Fall and Winter Refill and Redd Maintenance Actions in the 2019 BiOps. In the Spring of Shasta Exchange years, Sacramento River Settlement Contractors (SRSC) and Tehama-Colusa Canal Authority (TCCA) members would receive water from Sites in lieu of Shasta. As Shasta is not delivering water to the SRSC and TCCA members, its releases would be reduced. Therefore, Shasta storage and cold water pool would be preserved through the Spring.

At the end of Spring, Sites has delivered CVP water instead of Shasta. The volume of delivered water is equivalent to the exchange volume preserved in Shasta. The exchange volume sustains Shasta cold water pool for use during the critical months of the cold water pool management season (August and September). In Late-Summer and Fall (August – November), the exchange volume augments releases from Shasta with cooler water and provides deliveries to Sites participants.

All exchange water must be released in the August through November period. Release of exchange water shall support the Cold Water Pool Management Action and Fall stability flows aspect of the Fall and Winter Refill and Redd Maintenance Action in the 2019 BiOps. As such, Shasta Exchanges would occur in years when forecasted temperature-based mortality of early life stage winter-run Chinook salmon would be reduced by a Shasta Exchange.

## Summary of ROC on LTO Cold Water Pool Management

In the ROC on LTO Alternative 1 description, Reclamation proposes changes to cold water pool management during the temperature management period: May 15<sup>th</sup> to October 31<sup>st</sup> or when 95% of Winter-Run Chinook Salmon eggs have hatched and alevin have emerged, whichever is earlier. During the temperature management period, Reclamation will implement a tiered strategy based on Shasta cold water pool or total Shasta storage:

- ∞ Tier 1: May 1<sup>st</sup> cold water pool > 2.8 MAF (total Shasta storage > 4.1 MAF)
  - Daily average temperature of 53.5 deg F at Sacramento River below Clear Creek (CCR) throughout temperature management period
- ∞ Tier 2: May 1<sup>st</sup> cold water pool > 2.3 MAF (total Shasta storage > 3.5 MAF)
  - Daily average temperature of 53.5 deg F at CCR during hatch period (when highest concentration of hatching occurs; estimated as 2 months centered on August 7th)
  - Daily average temperature of 56 deg F at CCR for the rest of the temperature management period (before and after hatch period)
- ∞ Tier 3: May 1<sup>st</sup> total Shasta storage > 2.5 MAF
  - Allow daily average temperature above 53.5 deg F (up to 56 deg F) at CCR during hatch period
  - Attempt to maintain daily average temperature of 56 deg F at CCR for rest of temperature management period (before and after hatch period)
- ∞ Tier 4: May 1<sup>st</sup> total Shasta storage < 2.5 MAF
  - Discuss following intervention measures with USFWS and NMFS:
    - Reclamation would work with USFWS to increase hatchery production of Winter-Run Chinook Salmon
    - Reclamation would implement a downstream trap and haul strategy for the capture and transport of juvenile Chinook Salmon and Steelhead in the Sacramento River watershed.
    - In the event of two successive years with total egg-to-fry survival less than 15% in each year, Reclamation would convene a meeting of the Regional Directors of DWR, NMFS, USFWS, and CDFW to identify and implement actions to address the potential for a third year of low survival.

A decision tree of the tiered strategy is shown on page 5 (Figure 3.4-3 from the ROC on LTO FEIS).

## Shasta Exchange Criteria

	<b>Modeled Criteria</b>	<b>Notes</b>
<b>Exchange Period</b>	<b>Dry:</b> Apr – Jun <b>Critical:</b> Apr - May	
<b>Exchange Constraints</b>		
Water year types	Dry and Critically Dry water years	
Temperature Management Tier	Tier 2, 3 and 4 years	
Minimum flow at Sacramento River at Keswick	Apr – May: 6,000 cfs Jun: 10,000 cfs	Exchanges in Dry and Critically Dry water years will not likely impact ROC on LTO Spring Pulse Flows action
Maximum allowable temperature at Sacramento River below Clear Creek	Apr – Jun: Tiers 2 and 3 years: 53.5 deg F Tier 4 years: 56 deg F	Per ROC on LTO FEIS
Sacramento Valley Conditions	Only during Excess conditions	
<b>Release Period</b>	Aug – Nov	Releases are prioritized in August through October.
<b>Release Constraints</b>		
Preferred flow at Sacramento River at Keswick	Aug: 12,000 cfs Sep: 10,000 cfs Oct: 5,000 cfs Nov: 5,000 cfs	Not explicitly modeled
Maximum volume	Limited to Banks Pumping Plant Capacity	Not an explicit constraint; model accounts for mass balance

<sup>1</sup>Several assumptions are required to assume exchange operation criteria per ROC on LTO operations. Main assumptions are provided in “Notes” column.

## Shasta Exchange Benefits to ROC on LTO Cold Water Pool Management

- ∞ Tier 1 years:
  - No benefit
- ∞ Tier 2 years:
  - Decreasing releases in April through June could preserve Shasta cold water pool for more targeted release in the hatching period (described above).
- ∞ Tier 3 years:
  - Decreasing releases in April through June could preserve Shasta cold water pool for more targeted release in the hatching period (described above).
- ∞ Tier 4 years:
  - Little benefit – On its own, Sites could not benefit Shasta cold water pool in an appreciable manner. In combination with intervention measures, Sites may prove beneficial.

Attachment from ROC on LTO FEIS



Figure 3.4-3. Decision Tree for Shasta Reservoir Temperature Management



# Attachment F

Memorandum Identifying Modeled Criteria for Oroville Exchanges

## Draft – Subject to Revision

# Sites Project: Lake Oroville Exchange Modeling Assumptions

This document summarizes Sites Reservoir exchange operations with Lake Oroville. Then, details and tabulates modeling assumptions.

### Summary of Oroville Exchange Operation

The Oroville exchange is designed to support cold water pool management of Oroville and augment delivery of Sites water to Delta Participants during the transfer window. In June and July of Oroville exchange years, a portion of SWP obligated releases would come from Sites in lieu of Oroville, reducing releases from Oroville. Therefore, Oroville storage and cold water pool would be preserved through the end of July.

At the end of July, Sites has released SWP water instead of Oroville. The volume of released water is equivalent to the exchange volume preserved in Oroville. In the late-Summer and Fall (August – November), the exchange volume augments Oroville releases, provides deliveries to Sites participants, and supports Oroville cold water pool management.

### Oroville Exchange Operational Criteria

Assumptions of Oroville exchange operational criteria are detailed below. These criteria are also summarized in Table 1.

#### Exchange Period

In terms of physical Oroville storage capacity for an exchange, there is no assumed limit. Instead, the Oroville exchange volume is estimated in June and July based on Sites' forecasted transfer volume to south of Delta Storage Partners in August through November. If the Oroville exchange volume overestimates Sites' ability to transfer water south of the Delta, a portion of Sites exchange water remains in Oroville. This remaining exchange water is subject to spill.

The Oroville exchange period is limited to June and July. The Oroville exchange period starts in June due to the high degree of uncertainty in forecasting south of Delta transfers. Forecasting south of Delta transfers any earlier than June would pose a significant risk to losing Sites water, via spills from Oroville. Additionally, to protect Green Sturgeon habitat, Feather River flows must not decrease in August.

In Wet and Above Normal water years, Sites transfers to south of Delta Storage Partners are limited. As such, Oroville exchanges occur in Below Normal, Dry and Critically Dry water year types.

#### Release Period

The majority of exchange water is released in August and September, as October and November must consider Feather River fall stability flow targets. Per fall stability flow requirements, total Oroville releases are limited to 2,500 cfs from October 16<sup>th</sup> through November.

All exchange water must be released in the August through November period. If exchange water is not released by the end of November, it is subject to spill.

Table 1. Oroville Exchange Criteria

	<b>Modeled Criteria</b>	<b>Notes</b>
<b>Exchange Period</b>	June – July	Estimating volume of exchange water before June poses risk of losing Sites water to spill; Per Green Sturgeon requirements, Sites may not decrease Feather River flows in August
<b>Exchange Constraints</b>		
Water year types	Below Normal, Dry and Critically Dry water years	Oroville exchange not necessary in Wet and Above Normal water year types
Exchange Volume		Limited to minimize potential for spills of Sites water from Oroville
<b>Release Period</b>	August – November	
<b>Release Constraints</b>		
Delta Export Capacity		Considers conveyance capacity based on Feather River, Sacramento River and Delta regulatory requirements, and Banks Pumping Plant capacity
Max Feather River Flow	Oct: 4,000 cfs Nov: 2,250 cfs	Feather River fall stability flow requirements. October average flow of 4,000 cfs assumes flow requirement of 2,500 cfs for the 16 <sup>th</sup> through 31 <sup>st</sup> . November average of 2,250 cfs to protect fall stability flow requirement.
Spills	Spill Sites water in December	Unused Sites water in Oroville is subject to spill

---

**From:** Heydinger, Erin [Erin.Heydinger@hdrinc.com]  
**Sent:** 1/21/2022 2:06:39 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites - Prop 1 Presentation  
**Attachments:** Sites\_Prop1\_Releases-20220121.docx

Hi Ali,

See attached and let me know if you have questions or need more info.

Thanks!  
Erin

Erin Heydinger PE, PMP  
D 916.679.8863 M 651.307.9758

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 19, 2022 8:00 PM  
**To:** Heydinger, Erin <erin.heydinger@hdrinc.com>  
**Subject:** Fwd: Sites - Prop 1 Presentation

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Erin - see below and attached. Gokce did get back to me and asked that we share amounts without transportation losses. Is this something you can pull out? By water year type like in the attached?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
aforsythe@sitesproject.org | [www.SitesProject.org](http://www.SitesProject.org)

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 19, 2022 12:38 PM  
**To:** Gokce Sencan  
**Subject:** RE: Sites - Prop 1 Presentation

Gokce - Thanks for the email. Attached is a document that summarizes the Project's Proposition 1 benefits and provides a summary table of ecosystem benefits by water year type. Note that the water year type estimates for the refuge deliveries are deliveries at the refuge boundaries – so there is more Prop 1 water but some is removed for transportation losses. The same is true for the Yolo Bypass water, but there are minimal losses for this use. The 2030 and 2070 results in the attached are using different climate change scenarios in the CALSIM modeling.

Does this help? Would it be more useful for you to have the attached without transportation losses?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Gokce Sencan <[sencan@ppic.org](mailto:sencan@ppic.org)>  
**Sent:** Tuesday, January 18, 2022 2:53 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** RE: Sites - Prop 1 Presentation

Hi Ali,

I hope you are doing well. I have a quick question about the presentation that you shared with us a few weeks ago. In the presentation, it says that the Sites Reservoir is projected to provide 30-32 TAF/year to the Yolo Bypass, and it mentions that this is a long-term average flow. Similarly, the annual average refuge supply is expected to be around 20 TAF/year. My question is, are there any rules to these releases? For example, do you know how many times you would provide the water, and at what volumes, throughout the project's lifespan? Or are these flows going to be provided consistently every year? We are just trying to get a sense of the environmental water supply frequency and the total water volume in the release years.

Thank you so much! I'm happy to answer any questions that you might have.

Best,  
Gokce

**Gokce Sencan**  
*she | her | hers*  
Research Associate  
PPIC Water Policy Center

PUBLIC POLICY  
INSTITUTE OF CALIFORNIA  
500 Washington Street, Suite 600  
San Francisco, CA 94111  
tel 415 291 4408  
fax 415 291 4401  
web [www.ppic.org](http://www.ppic.org)

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---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 3:15 PM  
**To:** Jeffrey Mount <[mount.jeffrey@gmail.com](mailto:mount.jeffrey@gmail.com)>; Gokce Sencan <[sencan@ppic.org](mailto:sencan@ppic.org)>  
**Subject:** Sites - Prop 1 Presentation

This is dated, but might be helpful.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/23/2022 2:51:41 PM  
**To:** Gokce Sencan [sencan@ppic.org]  
**Subject:** RE: Sites - Prop 1 Presentation  
**Attachments:** Sites\_Prop1\_Releases-20220121.docx

Hi Gokce – Attached are the tables showing releases from Sites (no transportation losses).

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Gokce Sencan <sencan@ppic.org>  
**Sent:** Wednesday, January 19, 2022 5:24 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** RE: Sites - Prop 1 Presentation

Hi Ali,

Thank you very much for providing this document, this was exactly the kind of information I was looking for! It would be great if you could also share the volumes without transportation losses.

Thank you again for your help with this!  
Gokce

Gokce Sencan  
*she | her | hers*  
Research Associate  
PPIC Water Policy Center

PUBLIC POLICY  
INSTITUTE OF CALIFORNIA  
500 Washington Street, Suite 600  
San Francisco, CA 94111  
tel 415 291 4408  
fax 415 291 4401  
web [www.ppic.org](http://www.ppic.org)

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---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 19, 2022 12:39 PM  
**To:** Gokce Sencan <sencan@ppic.org>  
**Subject:** RE: Sites - Prop 1 Presentation

Gokce - Thanks for the email. Attached is a document that summarizes the Project's Proposition 1 benefits and provides a summary table of ecosystem benefits by water year type. Note that the water year type estimates for the refuge

deliveries are deliveries at the refuge boundaries – so there is more Prop 1 water but some is removed for transportation losses. The same is true for the Yolo Bypass water, but there are minimal losses for this use. The 2030 and 2070 results in the attached are using different climate change scenarios in the CALSIM modeling.

Does this help? Would it be more useful for you to have the attached without transportation losses?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Gokce Sencan <[sencan@ppic.org](mailto:sencan@ppic.org)>  
**Sent:** Tuesday, January 18, 2022 2:53 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** RE: Sites - Prop 1 Presentation

Hi Ali,

I hope you are doing well. I have a quick question about the presentation that you shared with us a few weeks ago. In the presentation, it says that the Sites Reservoir is projected to provide 30-32 TAF/year to the Yolo Bypass, and it mentions that this is a long-term average flow. Similarly, the annual average refuge supply is expected to be around 20 TAF/year. My question is, are there any rules to these releases? For example, do you know how many times you would provide the water, and at what volumes, throughout the project's lifespan? Or are these flows going to be provided consistently every year? We are just trying to get a sense of the environmental water supply frequency and the total water volume in the release years.

Thank you so much! I'm happy to answer any questions that you might have.

Best,  
Gokce

Gokce Sencan  
*she | her | hers*  
Research Associate  
PPIC Water Policy Center

PUBLIC POLICY  
INSTITUTE OF CALIFORNIA  
500 Washington Street, Suite 600  
San Francisco, CA 94111  
tel 415 291 4408  
fax 415 291 4401  
web [www.ppic.org](http://www.ppic.org)

*If you'd like to get emails about new Water Policy Center publications and events, please sign up [here](#).*

*Any opinions expressed in this message are those of the author alone and do not necessarily reflect any position of the Public Policy Institute of California.*

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, December 29, 2021 3:15 PM



**To:** Jeffrey Mount <[mount.jeffrey@gmail.com](mailto:mount.jeffrey@gmail.com)>; Gokce Sencan <[sencan@ppic.org](mailto:sencan@ppic.org)>

**Subject:** Sites - Prop 1 Presentation

This is dated, but might be helpful.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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Modeling Assumptions

	Criteria or Parameter	Alternative 1B - 2021 RDEIR/SDEIS	Alternative 3 - 2022 BA (preliminary)
<b>Baseline</b>			
	Baseline model	2020 Benchmark	Updated Benchmark (11/17/21)
<b>Fixed Flows</b>			
	Trinity River	Yes - All	Yes - All
<b>Hydrology</b>			
	Climate hydrology	Historic	Historic
	Sea level rise	None	None
<b>Facilities (Not Sites Specific)</b>			
	Fremont Weir	Fremont Weir Notch	Fremont Weir Notch
<b>Sites Project Facilities</b>			
	<b>Sites Reservoir</b>		
	Reservoir Capacity	1.5 MAF	1.5 MAF
	Dead Pool Size	120 TAF	60 TAF
	Dead pool transfer to TCCA in drought periods	60 TAF	0 TAF
	<b>Red Bluff Diversion/Tehama-Colusa Canal</b>		
	Red Bluff Diversion Capacity	2,100 cfs	2,100 cfs
	Red Bluff Bypass Flow	3,250 cfs	3,250 cfs
	<b>Hamilton City Diversion/Glenn-Colusa Canal</b>		
	Hamilton City Diversion Capacity	1,800 cfs	1,800 cfs
	Hamilton City Bypass Flow	4,000 cfs	4,000 cfs
	GCC Maintenance Window	2 weeks (Jan/Feb)	2 weeks (Jan/Feb)
	<b>Dunnigan Pipeline</b>		
	Dunnigan release capacity	1,000 cfs	1,000 cfs
	Dunnigan Pipeline endpoint	Colusa Basin Drain	Colusa Basin Drain
	KLOG Flap Gate	No release criteria	Releases to the Sacramento River cannot be made through the Dunnigan Pipeline while Sacramento River flows are high (flow at Wilkins Slough > 15,000 cfs) and the flap gate at Knights Landing is closed
<b>Regulations (Sites Specific)</b>			
	<b>Bend Bridge Pulse Protection</b>		
	Bend Bridge Pulse Protection Season	Oct - May	Oct - May
	Bend Bridge Pulse Protection Initiation Criteria	3-day average Sacramento River must exceed 8,000 cfs; 3-day average tributary flow must exceed 2,500 cfs	3-day average Sacramento River must exceed 8,000 cfs; 3-day average tributary flow must exceed 2,500 cfs
	Bend Bridge Pulse Protection Duration	7 days upon initiation	7 days upon initiation
	Bend Bridge Pulse Protection Re-setting Criteria	After completion of pulse protection period, resetting criteria must be met for another pulse protection period to commence: 3-day Sacramento River flow must go below 7,500 cfs for 7 consecutive days; 3-day moving average tributary flow must go below 2,500 cfs for 7 consecutive days	After completion of pulse protection period, resetting criteria must be met for another pulse protection period to commence: 3-day Sacramento River flow must go below 7,500 cfs for 7 consecutive days; 3-day moving average tributary flow must go below 2,500 cfs for 7 consecutive days
	Fully Appropriated Streamflow	No criteria	Diversions are only permitted Sep 1-Jun 15
	Wilkins Slough Bypass Flow	8,000 cfs April/May; all other times, 5,000 cfs	10,700 cfs Oct-Jun; all other times, 5,000 cfs
	Fremont Weir Notch Criteria	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 10% when spill range between 600 cfs and 6,000 cfs; First 600 cfs of spill are protected within 1%	None
<b>Shasta Operations for Anadromous Fish Benefits</b>			
	Shasta Coldwater Pool Management	1) Exchange period is Apr-Jun in Dry water years and Apr-May in Critically Dry water years 2) Exchanges are limited to Temperature Management Tier 2, 3, and 4 years when the Sacramento Valley is in excess conditions 3) Minimum flow at Keswick is 6,000 cfs Apr-May and 10,000 cfs in Jun 4) The maximum allowable temperature in the Sacramento River below Clear Creek between Apr-Jun is 53.5°F in Tiers 2 and 3 and 56°F 5) The release period for exchanged water is Aug-Nov	Reduce constraints on exchange criteria to increase frequency and volume of Shasta exchanges 1) Exchange period is Apr-Jun in Dry and Critically Dry water years 2) Exchanges are limited to Temperature Management Tier 2, 3, and 4 years when the Sacramento Valley is in excess conditions 3) Minimum flow at Keswick is 4,000 cfs Apr-May and 8,000 cfs in Jun 4) The maximum allowable temperature in the Sacramento River below Clear Creek is 56°F, regardless of temperature management tier 5) The release period for exchanged water is Aug-Oct, but water may be released outside of those months for Spring Pulse or Fall Stability Flow actions

	Spring Pulse Releases	<ul style="list-style-type: none"> <li>1) Includes up to two actions in March and April</li> <li>2) Up to 150 TAF of pulse flow release could occur in one month</li> <li>3) Total annual release volume is limited to 150 TAF</li> <li>4) Flood release assumed to be potentially reoperated if available</li> <li>5) Non-flood stored water releases only if needed to complete action</li> </ul>	<ul style="list-style-type: none"> <li>1) Up to three actions of 75 TAF in March-May, regardless of water year type</li> <li>2) Max annual Spring Pulse volume increases from 150 TAF to 225 TAF</li> <li>3) Additional Shasta releases are considered CVP credit in Sites</li> <li>4) Shasta spills in May account for Spring Pulse Flow, when active Sites storage is 80% or greater, during all water year types</li> <li>5) Additional, non-spill releases may occur in May in Wet and Above Normal years when end-of-April Shasta storage is greater than 4,100 TAF and active Sites storage is above 80% of capacity</li> </ul>
	Fall Flow Stability	No additional actions	<p>Additional releases to extend fall stability flows may occur if:</p> <ul style="list-style-type: none"> <li>1) Sites storage is greater than 80% at end of May</li> <li>2) Previous month Shasta storage is greater than 3.2 MAF</li> <li>3) Fall stability flows are already active (i.e., previous Sep storage is greater than 2.8 MAF)</li> </ul>
<b>Delivery Operations</b>			
	CVP Operational Flexibility	91 TAF	345 TAF
	North of Delta to South of Delta transfer threshold	TCCA storage must be above 67% of capacity before transfers may be made to Delta Participants	TCCA storage must be above 50% of capacity before transfers may be made to Delta Participants
	South of Delta Delivery	Delta Participants use Banks PP conveyance, Shasta exchange, and Oroville storage reoperation and CVP participates with Op Flex for additional CVP water supply and Shasta Lake reoperation	Delta Participants use Banks PP conveyance, Shasta exchange, and Oroville storage reoperation and CVP participates with Op Flex for additional CVP water supply and Shasta Lake reoperation
	South of Delta Delivery water year-type restrictions	Releases to South of Delta participants are limited to Below Normal, Dry, and Critically Dry years, based on Jan-Dec SWP contract years using the D-1641 Sacramento Valley 40-30-30 water year index	Releases to South of Delta participants may occur in all years
	Conveyance to Sacramento River	Dunnigan Pipeline to the Colusa Basin Drain	Dunnigan Pipeline to the Colusa Basin Drain
<b>Sites Account Volumes (TAF)</b>			
	<b>Total</b>	<b>1500</b>	<b>1501</b>
	<b>Dead Pool Storage</b>	<b>120</b>	<b>60</b>
	<b>PWA</b>	<b>1045</b>	<b>852</b>
	TCCA	138	105
	GCID	31	24
	RD 108	25	19
	Other Sac Valley	62	47
	South of Delta	788	657
	<b>State</b>	<b>244</b>	<b>244</b>
	Refuge L4 Deliveries	124	124
	Yolo Bypass	120	120
	<b>Federal</b>	<b>91</b>	<b>345</b>
	CVP Op Flex	91	345

**From:** Lecky, Jim [Jim.Lecky@icf.com]  
**Sent:** 1/20/2022 4:50:43 PM  
**To:** Hassrick, Jason [Jason.Hassrick@icf.com]; Hendrick, Mike [mike.hendrick@icf.com]; Spranza, John [john.spranza@hdrinc.com]  
**Subject:** RE: Email introduction

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I agree would be good to see this before CDFW brings it to the table. I'm not too worried about TUFLOW since my understanding is that TUFLOW estimates wetted area and wetted area is not a limiting factor. But is DWR have an analysis that shows an effect on proportion of fish diverted, we should evaluate whether it addresses the weaknesses of the studies we already evaluated.

---

**From:** Hassrick, Jason <Jason.Hassrick@icf.com>  
**Sent:** Thursday, January 20, 2022 4:14 PM  
**To:** Hendrick, Mike <Mike.Hendrick@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Lecky, Jim <Jim.Lecky@icf.com>  
**Subject:** RE: Email introduction

If that same analysis is being requested for Sites, it would be good to get up to speed on what was done.

---

**From:** Hendrick, Mike <Mike.Hendrick@icf.com>  
**Sent:** Thursday, January 20, 2022 4:11 PM  
**To:** John Spranza <John.Spranza@hdrinc.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>  
**Subject:** RE: Email introduction

I strongly suspect the answer to that would be 'yes' from both Jim and Jason. However, I am going to toss out my hesitation to open a 'can of worms' we do not need. With that said, does not hurt to look at the data.

Mike H

---

**From:** Spranza, John <John.Spranza@hdrinc.com>  
**Sent:** Thursday, January 20, 2022 3:49 PM  
**To:** Hendrick, Mike <Mike.Hendrick@icf.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>  
**Subject:** FW: Email introduction

Guys,  
Would we want to see the analysis that they did for CDFW on the notch? We know the general findings, but not the details.

John Spranza

D 916.679.8858 M 818.640.2487

---

**From:** Bahia, Maninder@DWR <Maninder.Bahia@water.ca.gov>  
**Sent:** Thursday, January 20, 2022 2:54 PM  
**To:** Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>

**Cc:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Martinez, Josh@DWR <[Joshua.Martinez@water.ca.gov](mailto:Joshua.Martinez@water.ca.gov)>

**Subject:** RE: Email introduction

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please copy Josh Martinez on any correspondence regarding this topic. Josh is the lead scientist for the Big Notch Project.

Thanks,

Manny Bahia, PE  
(916) 376-9835 - O  
(916) 873-4099 - M

---

**From:** Bahia, Maninder@DWR  
**Sent:** Thursday, January 20, 2022 2:49 PM  
**To:** Davis-Fadtke, Kristal@Wildlife <[Kristal.Davis-Fadtke@wildlife.ca.gov](mailto:Kristal.Davis-Fadtke@wildlife.ca.gov)>  
**Cc:** aforsythe ([aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)) <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; [john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)  
**Subject:** RE: Email introduction

Thanks for the introduction, Kristal.

Ali and John, please let me know how I can help.

Best,

Manny Bahia, PE  
(916) 376-9835 - O  
(916) 873-4099 - M

---

**From:** Davis-Fadtke, Kristal@Wildlife <[Kristal.Davis-Fadtke@wildlife.ca.gov](mailto:Kristal.Davis-Fadtke@wildlife.ca.gov)>  
**Sent:** Thursday, January 20, 2022 10:30 AM  
**To:** Bahia, Maninder@DWR <[Maninder.Bahia@water.ca.gov](mailto:Maninder.Bahia@water.ca.gov)>  
**Cc:** aforsythe ([aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)) <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; [john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)  
**Subject:** Email introduction

Good morning Manny,

I am sending this email to introduce you to the leads on the Sites Project Authority team responsible for environmental analyses and permitting. I have discussed with Ali and John the preliminary analysis conducted by your team looking at potential changes to fish entrainment into the Yolo Bypass. I have also expressed CDFW's interest in additional analyses using the TUFLOW model. My team is available to provide technical input on any future modeling that may occur.

Best,

Kristal

**Kristal Davis Fadtke**  
Environmental Program Manager  
Water Branch, Ecosystem Conservation Division

California Department of Fish and Wildlife  
P.O. Box 944209  
Sacramento, CA 94244-2090  
Office: (916) 376-1987  
Cell: (916) 701-3226



Janis Offermann &lt;janis@horizonh2o.com&gt;

---

## Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

1 message

---

**Janis Offermann** <janis@horizonh2o.com>

Thu, Jul 8, 2021 at 10:31 AM

To: rcuellar@ssband.org

Cc: Kevin Spesert <kspesert@sitesproject.org>, Alicia Forsythe <aforsythe@sitesproject.org>

Bcc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>

Dear Honorable Chairperson Cuellar,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: kspesert@sitesproject.org

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814


916.465.8076 – office

530.220.4918 – mobile

---

### 2 attachments

**02-01 Posting RDEIR-SDEIS Project Description (1).pdf**  
8005K

 **20210615\_Outreach\_Letter\_Cuellar\_Shingle\_Springs.pdf**  
94K





June 15, 2021

Mrs. Regina Cuellar, Chairwoman  
Shingle Springs Band of Miwok Indians  
P.O. Box 1340  
Shingle Springs, CA 95682

Subject: Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairwoman Cuellar:

The Sites Project Authority is preparing a Revised Draft Environmental Impact Report (RDEIR) for the proposed Sites Reservoir Project, which includes a new off-stream storage reservoir located in Colusa and Glenn counties, California, about 10 miles west of the town of Maxwell. The Authority published a Draft EIR for the Project in 2017. The Authority has since modified the Project, including revisions to the Project footprint, as depicted in the attached staff report on the Project description. For more detailed information regarding the Project, please see the preliminary draft Project description, which can be found at [https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites\\_Preliminary-Project-Description\\_20210219.pdf](https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites_Preliminary-Project-Description_20210219.pdf).

The Authority has identified the Shingle Springs Band of Miwok Indians as potentially having an interest in this Project and its operations, as revised. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you would like to discuss the Project with us, we respectfully request that you respond, in writing, within 30 days to our designated contact person below, and that you provide a designated contact person for the discussions:

Kevin Spesert, External Affairs Manager  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955  
Phone: (530) 632-4071  
Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Sincerely,

A handwritten signature in black ink that reads "Fritz Durst".

Fritz Durst, Chair



P.O. Box 517  
Maxwell, CA 95955  
530.438.2309

---

**From:** Marcia Kivett [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=189D06A7F517441AA28325857F394D13-MKIVETT]  
**Sent:** 1/24/2022 12:39:34 PM  
**To:** joshc@trinityjournal.com  
**CC:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**BCC:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** FW: Sites Reservoir

You are welcome.

CC'd is the email address as a great way for the public to submit comments and to answer your highlighted question below. Ali is also a great resource.

Regarding MS Teams, no problem. You can use the below to call in. Just dial 1-213-379-5743 and then the conference ID 585 215 966# or use the toll-free option.

**Or call in (audio only)**

[+1 213-379-5743](tel:+12133795743), 585215966# United States, Los Angeles  
 [\(888\) 404-2493](tel:(888)4042493), 585215966# United States (Toll-free)  
Phone Conference ID: 585 215 966#

---

**From:** Josh Cozine <joshc@trinityjournal.com>  
**Sent:** Monday, January 24, 2022 12:27 PM  
**To:** Marcia Kivett <MKivett@sitesproject.org>  
**Subject:** RE: Sites Reservoir

Thanks Marcia!

Sandra said she got int touch with you at your office, but just so it's here in your email... I was hoping today I could the address where people might send their comments on the project. We have:  
Alicia Forsythe, Sites Project Authority, at 916-880-0676, [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)

Wanted to make sure this was still accurate, and then also wanted to know if comments postmarked up to Jan. 28 would still be accepted past Jan. 28 or if no further mail be accepted?

Lastly... I've never used Microsoft teams before... could I get you to send the phone number or link I would use to connect through again please?

---

**From:** Marcia Kivett <MKivett@sitesproject.org>  
**Sent:** Monday, January 24, 2022 7:01 AM  
**To:** [joshc@trinityjournal.com](mailto:joshc@trinityjournal.com)  
**Cc:** Ann Newton <[anewton@katzandassociates.com](mailto:anewton@katzandassociates.com)>  
**Subject:** RE: Sites Reservoir

Hi Josh,

Jerry's availability is below. Select an option and I will set up a Microsoft Teams call.

Tuesday, Jan. 25 – 8:00, 11:00, 4:00

Thursday, Jan. 27 - 11:00  
Monday, Jan. 31 - 800, 10:00, 2:00

Have a great day everyone.

Marcia Kivett  
Sites Project Admin  
Phone: 561.843.9740  
Email: [mkivett@sitesproject.org](mailto:mkivett@sitesproject.org)  
Web: [www.SitesProject.org](http://www.SitesProject.org)  
P.O. Box 517  
122 Old Hwy 99W  
Maxwell, CA 95955

---

**From:** Ann Newton <[anewton@katzandassociates.com](mailto:anewton@katzandassociates.com)>  
**Sent:** Sunday, January 23, 2022 7:04 PM  
**To:** [joshc@trinityjournal.com](mailto:joshc@trinityjournal.com)  
**Cc:** Marcia Kivett <[MKivett@sitesproject.org](mailto:MKivett@sitesproject.org)>  
**Subject:** RE: Sites Reservoir

Josh,

The executive director of the Sites Project Authority, Jerry Brown, would be glad to talk with you early this week. I'm copying Marcia who will be able to assist with scheduling.

I can also be your point of contact for background materials, photos or other information you may need.

Ann



**Ann Newton**  
Director, Los Angeles  
d: 310.774.7639  
[San Diego](#) · [Los Angeles](#) · [San Francisco](#)

---

**From:** Ann Newton  
**Sent:** Friday, January 21, 2022 5:29 PM  
**To:** [joshc@trinityjournal.com](mailto:joshc@trinityjournal.com)  
**Subject:** Sites Reservoir

Hi Josh,

I received your inquiry through the Sites Reservoir website –thanks for reaching out. I'm a consultant on the team and I assist with media outreach. Your timing is terrific, as we were just discussing reaching out to your paper this week. Can we connect on Monday once I've spoken to our project team up in Maxwell?

Have a great weekend.

Ann



**Ann Newton**

Director, Los Angeles

d: 310.774.7639

San Diego · Los Angeles · San Francisco

---

**From:** Jerry Brown [jbrown@sitesproject.org]  
**Sent:** 1/24/2022 6:32:26 PM  
**To:** lhurst@ieua.org  
**Subject:** [Caution: Sender Unverified]SWC Comment Letter on Chino Basin

Hi Liz – Hope you are well. You mentioned on the Prop 1 roundtable call a couple of weeks ago about an SWC comment letter on the Chino Basin Project EIR regarding carriage water and COA implications. Is that something you can share a copy with me? We're meeting with Chandra of SWCs later this week about what they are considering for comments on Sites and having your letter might be helpful to understand their broader concerns.

Thanks in advance for your consideration.

Jerry

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

---

**From:** Kevin Spesert [kspesert@sitesproject.org]  
**Sent:** 1/25/2022 8:49:25 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]  
**Subject:** Auburn AB52 response  
**Attachments:** Auburn Tribe AB52 email.pdf

Here you go.

Thanks!

Kevin

## Kevin Spesert

External Affairs Manager

Sites Project Authority

Phone: 530.632.4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Web: [www.SitesProject.org](http://www.SitesProject.org)

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122 Old Hwy 99W

Maxwell, CA 95955

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## Kevin Spesert

---

**From:** Anna Starkey <astarkey@auburnrancheria.com>  
**Sent:** Thursday, July 22, 2021 1:31 PM  
**To:** 'Janis Offermann'  
**Cc:** Kevin Spesert; Alicia Forsythe; Anna Cheng  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Ms. Offerman,

On behalf of the United Auburn Indian Community, thank you for the information on the above referenced project. We have reviewed the project and it is located predominantly outside of the Tribes' geographic area of traditional and cultural affiliation. Therefore, UAIC will defer tribal consultation to affiliated tribes that are closer to this project. However, we would like to continue to receive project updates and have the opportunity to review and comment on the draft environmental report, including the cultural report. Please also let me know if other tribes are actively consulting.

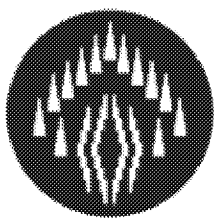
Lastly, for all future notifications, we ask that you please use our online form, linked below. Please do this despite what the NAHC list provides. We have not updated our contact method with the NAHC yet, so it is out of date. The link below is the best way to contact UAIC for notifications and information gathering.

<https://auburnrancheria.com/programs-services/tribal-preservation/submit-agency-notification/> Bookmark this link!

Please acknowledge the receipt of this email and UAIC's requests.

Kind regards,  
Anna Starkey

*The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. <https://auburnrancheria.com/programs-services/tribal-preservation> **Bookmark this link!***



**Anna M. Starkey, M.A., RPA**  
Cultural Regulatory Specialist  
Tribal Historic Preservation Department | UAIC  
10720 Indian Hill Road  
Auburn, CA 95603  
Direct line: (916) 251-1565 | Cell: (530) 863-6503  
[astarkey@auburnrancheria.com](mailto:astarkey@auburnrancheria.com) | [www.auburnrancheria.com](http://www.auburnrancheria.com)

---

**From:** Janis Offermann <janis@horizonh2o.com>  
**Sent:** Thursday, July 8, 2021 10:29 AM  
**To:** Brian Guth <bguth@auburnrancheria.com>  
**Cc:** Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairperson Whitehouse,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Thank you for your time,

Janis Offermann

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814

916.465.8076 – office

530.220.4918 – mobile

---

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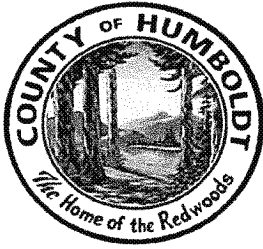


---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/25/2022 8:55:59 AM  
**To:** Jerry Brown [jbrown@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]  
**Subject:** Sites - Trinity River Docs  
**Attachments:** 20191217\_12-17-19 Bd of Sups-Co of Humboldt re Trinity River Interest from Adverse Impacts caused by Sites Reservoir Project.pdf; 20191217\_12-17-19 Bd of Sups-Co of Humboldt re Revision & Recirculation of Draft EIR-EIS for Sites Res Project.pdf; 20200115\_Humbolt BOS signed letter.pdf; 20220125\_Trinity Blips.docx

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**BOARD OF SUPERVISORS  
COUNTY OF HUMBOLDT**

825 5th Street, Suite 111, Eureka, CA 95501-1153  
Telephone (707) 476-2390 Fax (707) 445-7299

**RECEIVED**

**DEC 17 2019**

**SITES PROJECT AUTHORITY**

Fritz Durst, Chairman  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

**Subject:** Request to Protect Humboldt County's Trinity River Interests from Adverse Impacts caused by the Sites Reservoir Project

Dear Chairman Durst:

In a letter dated January 9, 2018, the Humboldt County Board of Supervisors expressed conditional support for the proposed Sites Reservoir Project, if robust and binding assurances are provided that:

1. Construction and operation of the Sites Reservoir Project will result in no additional demands for diversions of Trinity River water to the Sacramento Basin, and
2. The Sites Project Authority and the Bureau of Reclamation will work with Humboldt County and other Trinity River stakeholders to identify opportunities to reduce out-of-basin transfers of Trinity River water as part of the coordinated operations of the Central Valley Project and the future Sites Reservoir Project.

You replied with a letter (dated January 15, 2018) to the chair of the Board of Supervisors in which you asserted that no Trinity River water would be diverted into Sites Reservoir and therefore no additional demands on the Trinity River would occur as a result of the project. However, we find that this letter is not sufficiently robust and binding.

Subsequently, we are in receipt of the January 21, 2019 report by Kamman Engineering and Hydrology in which two significant impacts affecting the Trinity River were identified within the Sites Reservoir Project Draft Environmental Impact Report/Environmental Impact Statement ("Draft EIR/EIS") as follows:

1. The surface water modeling does not include an accounting of Humboldt County's 1959 water contract with the Bureau of Reclamation for annual releases of not less than 50,000 acre-feet of Trinity River water, nor does it include the anticipated flow releases described in the Bureau of Reclamation's Long-Term to Protect Adult Salmon in the Lower Klamath River (2017 Record of Decision), and
2. The surface water modeling identifies a significant change in the pattern of Trinity River exports to the Sacramento River from fall to spring in some water year types, thereby increasing residence time of water in Lewiston Reservoir and increasing Trinity River water temperatures. This change would likely violate North Coast Basin Plan Trinity River temperature objectives and SWRCB Water Right Order 90-05; however, the document fails to disclose the increased potential for temperature violations.

It is our understanding that Sites Project Authority representatives have stated that the temperature modeling results have limited accuracy due to the methods and assumptions; however, we are not reassured. Although your letter assured us that no harm would be caused to the Trinity River, we are concerned that the modeling results published in your Draft EIR/EIS show that the operations of the Sites Project would likely cause irreversible harm to migrating salmon and the document does not discuss alternatives or mitigations to address these impacts.

Based on the findings by Kamman Hydrology and the lack of robust and binding assurances, we specifically request that a water right term and condition be placed on the water rights application for the Sites Reservoir Project as follows:

*"Trinity River water shall not be used to fill Sites Reservoir unless the Trinity River Division of the Central Valley Project is releasing water as a result of storage conditions requiring "Safety of Dams" releases beyond normal operating plans and concurrently when Shasta Reservoir is making flood control releases. Furthermore, Humboldt County's 1959 water contract with the Bureau of Reclamation, Trinity River Record of Decision (ROD) flows, and releases to implement the Bureau of Reclamation's Long-Term Plan to Project Adult Salmon in the Lower Klamath River shall not be reduced or negatively impacted in any way as a result of any Sites Reservoir decisions, modeling, operational plans, and water rights petitions."*

Alternatively, we would consider entering into a Memorandum of Understanding with the Bureau of Reclamation and Sites Project Authority with clearly defined obligations and commitments to ensure that Humboldt County's 1959 water contract with the Bureau of Reclamation and our interests in the Trinity River are sufficiently protected.

We request a response by January 15, 2020, after which we will consider whether to withdraw our conditional support for the proposed Sites Reservoir Project.

Sincerely,

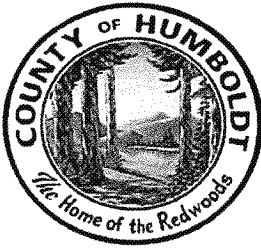


Rex Bohn, Chairman  
Humboldt County Board of Supervisors

cc: Senator Dianne Feinstein  
Senator Kamala Harris  
Congressman Jared Huffman  
Congressman John Garamendi  
Congressman Doug LaMalfa  
Senator Mike McGuire  
Trinity County Board of Supervisors  
Karuk Tribal Council  
Hoopa Valley Tribal Council  
Yurok Tribal Council  
California Water Commission  
Charles Bonham, Director CA Dept. of Fish and Wildlife  
Karla Nemeth, Director CA Department of Water Resources  
Ernest Conant, Regional Director Bureau of Reclamation

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DEC 17 2019



BOARD OF SUPERVISORS  
**COUNTY OF HUMBOLDT** SITES PROJECT AUTHORITY

825 5th Street, Suite 111, Eureka, CA 95501-1153  
Telephone (707) 476-2390 Fax (707) 445-7299

Fritz Durst, Chairman  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

Ernest Conant, Regional Director  
Bureau of Reclamation, Mid-Pacific Region  
2800 Cottage Way  
Sacramento, CA 95825

Subject: Request for Revision and Recirculation of Draft EIR/EIS for Sites Reservoir Project

Dear Chairman Durst and Regional Director Conant:

The Humboldt County Board of Supervisors requests that the Draft Environmental Impact Statement/Environmental Impact Report ("Draft EIR/EIS") for the Sites Reservoir Project be revised and recirculated prior to certification due to significant new information regarding the expected adverse environmental effects of the project's proposed operations. After the comment period on the Draft EIR/EIS ended in 2017, serious deficiencies have been identified in the document warranting revision of the impacts analysis and new or modified alternatives and/or mitigation measures. Humboldt County has a vested interest in this project because significant impacts to the Trinity River, which is partially diverted into the Sacramento River, would cause irreversible harm to Humboldt County's commercial, sport, and tribal fisheries.

Specifically, we are in receipt of the January 21, 2019 report by Kamman Engineering and Hydrology in which two significant impacts affecting the Trinity River were identified within the Sites Reservoir Project Draft EIR/EIS as follows:

1. The surface water modeling does not include an accounting of Humboldt County's 1959 water contract with the Bureau of Reclamation for annual releases of not less than 50,000 acre-feet of Trinity River water, nor does it include the anticipated flow releases described in the Bureau of Reclamation's Long-Term Plan to Protect Adult Salmon in the Lower Klamath River (2017 Record of Decision), and
2. The surface water modeling identifies a significant change in the pattern of Trinity River exports to the Sacramento River from fall to spring, thereby increasing residence time of water in Lewiston Reservoir and increasing Trinity River water temperatures. This change would likely violate North Coast Basin Plan Trinity River temperature objectives and SWRCB Water Right Order 90-05; however, the document fails to disclose the increased potential for temperature violations.

Issuing a final EIR/EIS without correcting these serious modeling problems will not meet the basic purpose and substantive legal requirement of the California Environmental Quality Act ("CEQA") to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of feasible alternatives or mitigation measures (CEQA Guidelines 15002). Moreover, failure to remodel the proposed action and alternatives in a recirculated Draft EIR/EIS

will not provide the public with an opportunity to review and comment on the actions, alternatives, and potential mitigation measures as required for transparency, and therefore it will not procedurally comply with CEQA Guidelines 15088.5.

An additional issue of concern that has potential adverse impacts on Humboldt County is your proposed minimum instream flows on the Sacramento River. In a letter dated January 12, 2018, to the Sites Project Authority, the California Department of Fish and Wildlife recommended a bypass flow requirement to maintain at least 13,000 cubic feet per second (cfs) past all diversion facilities, while you are proposing 3,250 cfs (Red Bluff), 4,000 CFS (Hamilton City), and 5,000 cfs (Wilkins Slough). This discrepancy greatly concerns us and we believe this issue requires at a minimum further analysis, and potentially revision of the selected alternative and mitigation measures, in a revised and recirculated Draft EIR/EIS.

The successful migration, spawning, and rearing of native wild Sacramento River salmon is critical to ensure the “harvestable surplus” of these stocks that is required for the success of Humboldt County commercial and sport fishing industries and our resource-dependent communities. If your project cannot be economically feasible without taking flows in the Sacramento River below state recommended **minimum** instream flows, we question the benefits to salmon and environmental neutrality that you have professed for your project. A revised and recirculated Draft EIR/EIS with a comparison of alternatives with various minimum instream flow volumes is required to adequately compare what it would mean to reduce the Sacramento River to such low flows.

We request a timely response from both the Sites Project Authority and the Bureau of Reclamation to the Humboldt County Board of Supervisors so we can take appropriate action to secure the public and private interests of our constituents on these important issues.

Sincerely,



Rex Bohn, Chairman  
Humboldt County Board of Supervisors

cc: Senator Dianne Feinstein  
Senator Kamala Harris  
Congressman Jared Huffman  
Congressman John Garamendi  
Congressman Doug LaMalfa  
Senator Mike McGuire  
Trinity County Board of Supervisors  
Karuk Tribal Council  
Hoopa Valley Tribal Council  
Yurok Tribal Council  
California Water Commission  
Charles Bonham, Director CA Dept. of Fish and Wildlife  
Karla Nemeth, Director CA Department of Water Resources



January 15, 2020

Mr. Rex Bohn, Chairman  
Board of Supervisors  
County of Humboldt  
825 5th Street, Suite 111  
Eureka, CA 95501-1153

Subject: Request to Protect Humboldt County's Trinity River Interests from Adverse Impacts  
that may be Caused by Sites Reservoir Project

Dear Chairman Bohn:

Thank you for your letter of December 17, 2019 and for the opportunity for Alicia Forsythe of the Sites Project Authority (Authority) to come speak at your December 10, 2019 Board of Supervisors meeting.

The Authority remains committed to the assurances that we provided in our January 15, 2018 letter – the construction and operation of the Sites Reservoir Project will result in no additional demands for diversions of Trinity River water to the Sacramento River Basin or otherwise adversely affect the Trinity River. We remain committed to continue working with Humboldt County to address your concerns as the Project's facilities and operations are refined. Ms. Forsythe, Sites Project Authority Environmental Planning and Permitting Manager, will contact you to determine how best to move forward with this effort.

The Sites Project Authority, as the California Environmental Quality Act (CEQA) State lead agency, and the Bureau of Reclamation (Reclamation), as the National Environmental Policy Act (NEPA) Federal lead agency, have prepared the Sites Reservoir Project Draft Environmental Impact Report / Environmental Impact Statement (Draft EIR/EIS) to address the environmental effects of the Sites Project, including the No-Action Alternative and four action alternatives. The Draft EIR/EIS was made available for a 154-day public review and comment period, from August 14, 2017 to January 15, 2018. In your recent letter, you identify a January 21, 2019 report prepared by Kamman Engineering and Hydrology in which Mr. Kamman identifies two concerns affecting the Trinity River based on information and analyses in the Project's Draft EIR/EIS. We are reviewing the Kamman Report in detail and will consider your December 17, 2019 letter, as well as the January 21, 2019 Kamman Engineering and Hydrology Report, as a comment to the Site Project's Draft EIR/EIS and respond to both in detail in the Final EIR/EIS.



P.O. Box 517  
Maxwell, CA 95955  
530.438.2309



We appreciate the continued support from the Humboldt County Board of Supervisors and are committed to working collaboratively to resolve your concerns.

Sincerely,

A handwritten signature in black ink that reads 'FRITZ DURST'.

Fritz Durst, Chair

cc: Senator Dianne Feinstein  
Senator Kamala Harris  
Congressman Jared Huffman  
Congressman John Garamendi  
Congressman Doug LaMalfa  
Senator Mike McGuire  
Trinity County Board of Supervisors  
Karuk Tribal Council  
Hoopa Valley Tribal Council  
Yurok Tribal Council  
California Water Commission  
Charles Bonham, California Department of Fish and Wildlife  
Karla Nemeth, California Department of Water Resources  
Ernest Conant, Bureau of Reclamation



P.O. Box 517  
Maxwell, CA 95955  
530.438.2309

RDEIR/SDEIS, ES-15

Chapter 2, *Project Description and Alternatives*, describes that the Project would not affect or result in changes in the operation of the CVP, Trinity River Division facilities (including Clear Creek); Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal, and contractual obligations.

RDEIR/SDEIS, CH 2, 2-30

The Project would not affect or result in changes in the operation of the CVP, Trinity River Division facilities (including Clear Creek). Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal and contractual obligations, including but not limited to the Trinity River Record of Decision (ROD), the 2017 ROD for the Long-Term Plan for the Lower Klamath River, and the provisions of the Trinity River Division CVP Act of 1955.

From RDEIR/SDEIS Presentation

### **Highlight Area – Trinity River**

- No effect or changes in the operations of the Central Valley Project (CVP), Trinity River Division facilities (including Clear Creek)
- Reclamation would continue to operate consistent with all applicable statutory, legal and contractual obligations, including but not limited to:
  - Trinity River Record of Decision (ROD)
  - 2017 ROD for the Long-Term Plan for the Lower Klamath River
  - Provisions of the Trinity River Division CVP Act of 1955

### **Highlight Area – Tribal Coordination**

- Authority – Compliance with Assembly Bill 52
  - Reached out to 7 tribes in 2020
    - Tribes traditionally or culturally affiliated with lands in the Project footprint
    - Sent letters, emails, and called
    - 2 tribes responded and in on-going consultation
  - Reached out to 7 additional tribes in 2021
    - Tribes traditionally or culturally affiliated with locations where Project operations have the potential to change river flows as compared to current conditions
    - Sent letters, emails, and called
    - No response to date from these tribes



- On-going consultation with 2 tribes
  - Tribal consultation efforts under AB 52 identified in detail in Chapter 23
- Reclamation – Compliance with Section 106 of the National Historic Preservation Act
  - Reached out to 9 tribes in 2021
  - One response received recently
  - Planning additional outreach in 2022

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/25/2022 9:23:15 AM  
**To:** Anthony Saracino (anthony@asaracino.com) [anthony@asaracino.com]  
**Subject:** RE: Sites Reservoir Discussion  
**Attachments:** Sites\_Prop1\_Releases-20220121.docx

Anthony – In case its helpful, we revised the tables to not include transportation losses. These are attached.

PPIC recently requested these so I thought they might be useful to you also.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** Alicia Forsythe  
**Sent:** Thursday, November 11, 2021 2:05 PM  
**To:** Marcia Kivett <MKivett@sitesproject.org>; Jay\_Ziegler@TNC.ORG; Ann Hayden <ahayden@edf.org>; Maurice Hall <mhall@edf.org>; Anthony Saracino (anthony@asaracino.com) <anthony@asaracino.com>; Kimberly Filosena <kfilosena@TNC.ORG>; Jerry Brown <jbrown@sitesproject.org>  
**Subject:** RE: Sites Reservoir Discussion

Hi all – Thanks for the great discussion last week. Apologies for the delay in getting back to you all.

Attached is the Proposition 1 benefits presentation. This helps to break down how things moved from the original Prop 1 Application to earlier this year. Some of the numbers in this presentation are out of date – and specifically the ecosystem water numbers. I’ve also attached a MS Word file that summarizes the Project’s Proposition 1 benefits and provides a summary table of ecosystem benefits by water year type that is more current and from our State Feasibility Report. Note that the water year type estimates for the refuge deliveries are deliveries at the refuge boundaries – so there is more Prop 1 water but some is removed for transportation losses. The same is true for the Yolo Bypass water, but there are minimal losses for this use.

Hope this helps.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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-----Original Appointment-----

**From:** Marcia Kivett <MKivett@sitesproject.org>

**Sent:** Tuesday, September 28, 2021 12:03 PM

**To:** Marcia Kivett; Jay\_Ziegler@TNC.ORG; Ann Hayden; Maurice Hall; Anthony Saracino ([anthony@asaracino.com](mailto:anthony@asaracino.com)); Kimberly Filosena; Jerry Brown; Ali Forsythe

**Subject:** Sites Reservoir Discussion

**When:** Tuesday, November 2, 2021 9:00 AM-10:00 AM (UTC-08:00) Pacific Time (US & Canada).

**Where:** Microsoft Teams Meeting

Thank you all for the quick response. This meeting is to discuss the EIR/ITP Diversion Criteria and continued discussion on the Enviro Water Manager.

---

## Microsoft Teams meeting

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[Click here to join the meeting](#)

### Or call in (audio only)

[+1 213-379-5743,762767308#](tel:+12133795743762767308) United States, Los Angeles

[\(888\) 404-2493,762767308#](tel:(888)4042493762767308) United States (Toll-free)

Phone Conference ID: 762 767 308#

[Find a local number](#) | [Reset PIN](#)



A Brown and Caldwell Teams meeting has been created for this event.

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---

**ESTIMATED INCREMENTAL LEVEL 4 REFUGE WATER SUPPLY RELEASES FROM SITES RESERVOIR  
(2030 AND 2070) (TAF/YEAR)**

Period	North-of-the-Delta	South-of-the-Delta <sup>(b)</sup>	Total
<b>2030 Results</b>			
Long-Term Average <sup>(a)</sup>	5	14	19
Wet	0	0	0
Above Normal	9	6	15
Below Normal	9	14	23
Dry	8	32	40
Critical	6	21	27
<b>2070 Results</b>			
Long-Term Average <sup>(a)</sup>	5	12	17
Wet	0	0	0
Above Normal	9	1	10
Below Normal	7	10	17
Dry	7	11	18
Critical	6	25	31

Source: CALSIM II.

Notes:

(a) Average weighted based on water-year frequency rates

(b) Includes both San Joaquin and Tulare Lake Refuge deliveries and based on San Joaquin Valley 60-20-20 Index Year Class.

TAF = thousand acre-feet

**ESTIMATED YOLO BYPASS WATER SUPPLY RELEASES FROM SITES RESERVOIR  
(2030 AND 2070) (TAF/YEAR)**

Period	North-of-the-Delta
<b>2030 Results</b>	
Long-Term Average <sup>(a)</sup>	42
Wet	53
Above Normal	50
Below Normal	45
Dry	31
Critical	17
<b>2070 Results</b>	
Long-Term Average <sup>(a)</sup>	36
Wet	40
Above Normal	40
Below Normal	39
Dry	33
Critical	21

Source: CALSIM II. (2021)

Note:

(a) Average weighted based on water-year frequency rates

TAF = thousand acre-feet

---

**From:** Kevin Spesert [kspesert@sitesproject.org]  
**Sent:** 1/25/2022 10:00:40 AM  
**To:** Joe Trapasso [jtrapasso@sitesproject.org]  
**CC:** Jerry Brown [jbrown@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]  
**Subject:** FW: Monitor Agreement  
**Attachments:** YDWN Standard Monitoring Agreement.docx

Joe,

Per our discussion...I met with Laverne Bill this morning on Yocha Dehe providing tribal monitoring services for our upcoming Geotech field work. As you may remember, we have been using the Colusa Tribe to support this effort in the past but evidently they have furloughed their entire monitoring department.

Laverne provided the attached monitoring contract...looks similar to the current contract that we have with Colusa

To stay on schedule for our early Geotech work planned for the end of February...we need to get the contract signed by February 14<sup>th</sup>. I would like this contract to extend thru the end of Amendment 3 (36 months) so that it would cover all of the Geotech work that we have planned

Jelica – can you start working up a SOW for the monitoring activity...similar to what we have in the Colusa Tribe contract.

Thanks!

Kevin

---

**From:** Laverne Bill <LBill@yochadehe-nsn.gov>  
**Sent:** Tuesday, January 25, 2022 9:14 AM  
**To:** Kevin Spesert <kspesert@sitesproject.org>  
**Subject:** Monitor Agreement

**Laverne Bill**  
*Director of Cultural Resources*

**Yocha Dehe Wintun Nation**  
PO Box 18 | Brooks, CA 95606  
p 530.796.3400 | c 530.723.3891  
f 530.796.2143  
[lbill@yochadehe-nsn.gov](mailto:lbill@yochadehe-nsn.gov)  
[www.yochadehe.org](http://www.yochadehe.org)

Standard Monitoring Agreement  
Between  
Yocha Dehe Wintun Nation  
And

This MONITORING AGREEMENT ("Agreement") is made and entered into as of \_\_\_\_\_, \_\_\_\_\_, by and between the **Yocha Dehe Wintun Nation**, a federally recognized Indian tribe ("Yocha Dehe" or "Tribe") on the one hand, and \_\_\_\_\_ (**hereinafter "Contractor"**) on the other hand. Yocha Dehe and Contractor are collectively referenced hereinafter as the "Parties".

**I. RECITALS**

**A. Subject Matter:** This Agreement concerns the use and/or development of real property located within the area of \_\_\_\_\_, and which is the subject of development by Contractor. The development is commonly known as \_\_\_\_\_, hereinafter referenced as the "Project" and is described in Attachment I of this Agreement. As used herein, the Area of Potential Effect (or APE) includes \_\_\_\_\_.

**B. Purpose:** The purpose of this Agreement is to establish fee schedules and terms for the use of Yocha Dehe tribal monitors for the Project; establish protocols for the relationship between Yocha Dehe and the Contractor; formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items and any cultural artifacts, in the event that any are found in conjunction with the Project's development, including archaeological studies, excavation, geotechnical investigations, grading and any ground disturbing activity. This Agreement is entered into as mitigation under the California Environmental Quality Act ("CEQA") and/or the National Environmental Policy Act ("NEPA") and Section 106 of the National Historic Preservation Act ("Section 106"), and any such mitigation may be a condition of approval for said Project.

**C. Cultural Affiliation:** The Tribe traditionally occupied, and can trace its historical ties to, land in the Project's Area of Potential Effect ("APE" or "Project Area"). The Project is within the boundaries of the Yocha Dehe Linguistic Territory. Thus, cultural resources identified in the APE are related to the history and tradition of the Yocha Dehe Wintun Nation and Patwin speaking peoples. Yocha Dehe has designated its Cultural Resources Department to act on its behalf with respect to the provisions of this Agreement. Any Native American human remains, grave goods, ceremonial items, and cultural items or artifacts that are found in conjunction with the development of this Project shall be treated in accordance with the Provisions of this Agreement.

**II. TERMS**

**A. Incorporation of Recitals:** All of the foregoing recitals are accurate and are incorporated in this Agreement by reference.

**B. Term:** This Agreement shall be effective as of the date of execution and it shall remain in effect until the Project's completion.

**C. Scope of Services and Specifications:** Given the nature and sensitivity of archaeological sites and cultural resources that are or may be within the Project area (a map of which is shown and attached hereto as Attachment I). Yocha Dehe shall provide tribal monitoring and consultation for the Project during the archaeological investigations and all ground disturbing activities required

for the Project. Yocha Dehe monitors will work in collaboration with the archaeologists, inspectors, project managers and other consultants hired/employed by the Contractor.

**D. Fee Schedule:**

The fee schedule for the use of Yocha Dehe Wintun Nation monitors and staff is as follows;

Native American Monitoring	\$75.00 hourly rate (per monitor)
Tribal Historic Preservation Officer/ Cultural Resources Director (4 hour minimum)	\$200.00 (per hour)
Tribal Executives (4 hour minimum)	\$200.00 (per hour)
Cultural Resources Manager (4 hour minimum)	\$175.00 (per hour)
Overtime (over 8 hrs in a day)	\$112.50 hourly rate (per monitor)
Weekend and Holiday Hours	\$112.50 hourly rate Saturday; and \$150.00 hourly rate Sunday and Holiday
Cultural Sensitivity Training	\$250.00 one time charge
Administrative Fee	15% of Invoice

Yocha Dehe's monitors will bill for time spent traveling to and from any Project site. In addition, Yocha Dehe shall be reimbursed for all costs associated with travel to and from the Project. Eligible items for cost reimbursement shall include, but not be limited to, mileage (or fuel purchases, at the submitter's election), hotel, and per diem (GSA rate).

**E. Coordination with County Coroner's Office.** In the event human remains are discovered on or near the Project site during its development, Contractor shall immediately contact the Coroner, the Yocha Dehe Director of Cultural Resources, Site Protection Manager, the Cultural Resources Committee Chairperson, and the Tribal Chairman. In order to facilitate this Agreement's implementation, the appropriate County Coroner's Office shall be provided a copy of this Agreement either before any earth disturbing activities or upon request of the Tribe. Yocha Dehe agrees to provide Contractor the needed contact information in order to comply with this provision. The Coroner shall be asked by the Contractor to determine if the remains are (1) human, (2) prehistoric, and further, the Contractor shall request the Coroner notify the State of California's Native American Heritage Commission in the event the remains are determined to be Native American. The Contractor will compensate the Coroner for reasonable fees and costs, if applicable and required by the County Coroner's office.

**F. Most Likely Descendant (MLD):** The Yocha Dehe Wintun Nation as the MLD for any Human Remains, Associated Funerary Objects and Artifacts found within the exterior boundaries of the Yocha Dehe Wintun Nation Linguistic Territory. Human Remains have been discovered within the Yocha Dehe Wintun Nation Linguistic Territory on occasion and in all of those cases, the Native American Heritage Commission ("NAHC") designated the Yocha Dehe Wintun Nation as the Most Likely Descendant ("MLD") under California Public Resources Code section 5097.98.

**G. Treatment and Disposition of Remains.** Where Native American human remains are discovered during the Project's development, and where Yocha Dehe has been designated the Most Likely Descendant (MLD), the following provisions shall apply to the Parties:

I. The Tribe shall be allowed, under California Public Resources Code sections 5097.98 (a) and 21083.2 and State CEQA Guidelines section 15064.5 (e), to: (1) inspect the site of the discovery; and (2) make recommendations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

II. The Tribe shall complete its inspection within twenty-four (24) hours of receiving notification from either the Contractor or the NAHC, as required by California Public Resources Code section 5097.98 (a). The Parties agree to discuss, in good faith, what constitutes "appropriate dignity" as that term is used in the applicable statutes.

III. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code sections 5097.98 (a) and (b) and 21083.2 and State CEQA Guidelines section 15064.5 (e).

IV. The Parties are aware that Yocha Dehe may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near the site of their discovery, in an area that shall not be subject to future subsurface disturbances. Should Yocha Dehe recommend reburial of the human remains and associated ceremonial and cultural items (artifacts) on or near the site of their discovery, the Contractor shall make good faith efforts to accommodate the Tribe's request.

V. The term "human remains" encompasses more than human bones because Yocha Dehe's traditions periodically necessitated the ceremonial burning of human remains, and monitors shall make recommendations for removal of cremations. Grave goods are those artifacts associated with any human remains. These items and the soil, in an area encompassing up to two (2) feet in diameter around the burial, and other funerary remnants and their ashes, are to be treated in the same manner as human bone fragments or bones that remain intact

**H. Treatment and Disposition of Cultural Items (Artifacts).** Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Tribe. Contractor agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the Project site to the MLD for appropriate treatment, unless Contractor is ordered to do otherwise by a court or agency of competent jurisdiction. In addition, the Tribe requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations on or adjacent to the Project site. Where appropriate (from the perspective of Yocha Dehe), and agreed upon in advance by Yocha Dehe, certain analyses of certain artifact types will be permitted, which may include, but which may not necessarily be limited to, shell, bone, ceramic, stone and/or other artifacts.

**I. Ownership Relinquishment.** Contractor waives any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. If examination of cultural artifacts by an entity or individual other than the MLD is necessary, that entity or individual shall return said artifacts to the MLD within thirty (30) days, or any other agreed upon time frame from the initial recovery of the items.



**J. The Description of Work.** Description of work for Yocha Dehe monitors for the grading and ground disturbing operations at the Project site is provided in **Attachment II** to this Agreement and incorporated herein by this reference. **Section I of Attachment II specifies the duties and responsibilities of the identified tribal monitoring crew and other specified parties. Section II of Attachment II identifies the geographical area over which the tribal monitoring crew shall oversee cultural resource mitigation and monitoring in accordance with California Public Resources Code section 21083.2 (c) and (k). Sections III and IV of Attachment II mandate compensation of the tribal monitoring crew by the Contractor.**

**K. Confidentiality.** Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq. The County Coroner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). Moreover, all records relative to consultation between the Parties shall be confidential and not subject to public disclosure as required by the California Public Records Act, Cal. Govt. Code § 6250 et seq.

Executed by:

**Yocha Dehe Wintun Nation**

(Company Name)

Signature:

\_\_\_\_\_

Signature:

\_\_\_\_\_

Print Name:

\_\_\_\_\_

Print Name:

\_\_\_\_\_

Title:

Tribal Historic Preservation Officer

\_\_\_\_\_

Title:

\_\_\_\_\_

Date:

\_\_\_\_\_

Date:

\_\_\_\_\_

ATTACHMENT I

[Insert Tract Map for Project Name]

## Attachment II

### NATIVE AMERICAN MONITORING OF GRADING AND GROUND DISTURBING ACTIVITIES

- I. **Specifications:** Given the nature and sensitivity of the archaeological sites and cultural resources that are in or may be within the Project area, the Yocha Dehe Wintun Nation, a federally recognized Indian tribe and the Most Likely Descendant as identified by the Native American Heritage Commission, shall provide the tribal monitoring, consultation and facilitation for this Project during the archeological investigations, and all ground disturbing activities for the Project. Yocha Dehe's monitors will work in concert with the archaeologists and Project engineers hired/employed by Contractor. The tribal monitors or Project archaeologists will be empowered to halt all earthmoving equipment in the immediate area of discovery when cultural items or features are identified until further evaluation can be made in determining their significance. It is understood that all surface and subsurface artifacts of significance shall be collected and mapped during this operation following standard archaeological practices.

After discovery of cultural items or features' discussions between the tribal monitors and project archaeologist will occur to determine the significance of the situation and best course of action for avoidance, protection of resources, and/or data recovery, as applicable.

- II. **Project to be Monitored:** Monitoring shall encompass the area known as \_\_\_\_\_ and shall be known as the Project area. It is agreed that monitoring shall be allowed for all archaeological studies, excavations, and groundbreaking activities occurring in conjunction with the development of the Project.
- III. **Project Crew Size:** The Parties to this Agreement project the need for a tribal monitoring crew size to be determined by the Cultural Site Protection Manager, in accordance with Yocha Dehe Wintun Nation Cultural Law. If the scope of the work changes (e.g., inadvertent discoveries of cultural resources or simultaneous grading of area that requires multiple tribal monitors), additional tribal monitors may be required. Developer agrees to directly compensate Yocha Dehe for all of the work performed by the tribal monitors. The compensation rate shall be made directly from Contractor to the Tribe in accordance with Section IV. If human remains are found, the coordination of the reburial of those remains and any associated cultural and ceremonial items shall be conducted in accordance with Sections III and IV of this Agreement.
- IV. **Insurance and Indemnity:** Yocha Dehe shall provide the tribal monitoring crew for the Project and shall be responsible for coordinating the tribal monitors' activities on the Project. The Tribe recognizes that dangerous conditions may exist on the work site, particularly during grading operations, and agrees to assume responsibility for the safety of the tribal monitoring crew while the crew remains on the Project site. The Tribe possesses the necessary insurance to cover any bodily injury or property damage that may be suffered by the tribal monitors and proof of such insurance shall be made available to Contractor upon request.
- V. **Compensation:** Contractor shall directly compensate the Tribe in accordance with the following compensation rates and procedures. Invoices will be submitted on a monthly

basis and shall be paid within 30 days of submittal to assure timely tribal monitor compensation and to further assure that tribal monitoring will not be terminated for the Project.

A minimum half-day charge ("show up" time) shall be charged to Contractor for unannounced work stoppages of the tribal monitors that are not due to actions by Yocha Dehe.

- VI. **Rights of Access/Stoppage/Consultation Upon Discovery:** Contractor shall provide Yocha Dehe tribal monitors with unencumbered access to the Project site as reasonably necessary for the monitors to effectively perform the services required by this Agreement. The tribal monitors and/or project archaeologist will be empowered to halt all earthmoving equipment in the immediate area of discovery when cultural items or features are identified until further evaluation can be made in determining their significance. It is understood that all surface and subsurface artifacts, Native American human remains, funerary objects, items of cultural patrimony, and any other cultural items shall be treated in accordance with an agreed upon artifact treatment and disposition plan.

After discovery of cultural items or features, discussions between the tribal monitors and project archaeologist will occur to determine its significance and the best course of action for avoidance, protection of resources, and/or data recovery, as applicable. While determinations will be mostly in the field, Yocha Dehe's tribal monitors may need to seek further guidance from the Most Likely Descendent, Yocha Dehe Tribal Council and/or the Cultural Resources Committee. If this rare occurrence should arise, Yocha Dehe reserves the right to request a 30-day stoppage of work.

Where circumstances warrant, the Contractor may be required, at its sole expense, to provide security personnel or remove unnecessary persons from the Project site. For example, where the safety of tribal monitors is at risk due to controversy or other circumstances surrounding a particular Project's development, security personnel would be provided at the Contractor's expense and members of the public excluded from the site. Likewise, where the protocol for the treatment of Native American human remains, funerary objects, artifacts, or items of cultural patrimony deems culturally required or appropriate, Contractor agrees unnecessary personnel will leave the site during the relevant time period.

---

**From:** Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]  
**Sent:** 1/25/2022 12:17:07 PM  
**To:** lbill@yochadehe-nsn.gov  
**CC:** Kevin Spesert [kspesert@sitesproject.org]; janis@horizonh2o.com  
**Subject:** Sites: Geotechnical Investigations - Tribal Monitoring  
**Attachments:** Geotech\_Shapefiles.zip; Sites TRR Early Eval Geotech\_PD.pdf; Sites Geotech Priority 1 Project Description.pdf

**Importance:** High

Hello Laverne

It was a pleasure meeting you virtually. I look forward to working with you and your team. Please see attached GIS shapefiles for the overall project effort. This zipped folder contains the Priority 1 and Early Evaluation (\*P1A\*) Geotech GIS data layers.

I've attached two project descriptions, one for the TRR Early Evaluation work and the other for the larger Priority 1 effort. The Priority 1 PD is draft but close to being finalized. The type of work being done is not changing though.

We are conducting preconstruction surveys no more than 2 weeks ahead of the investigations. I sent a placeholder for February 14<sup>th</sup> and will likely send another one or two (all dependent on the Authority's agreement with tribe).

Quick summary of schedule:

1. TRR Early Evaluations – February 25 through March 10, 2022
2. Priority 1 Geotechnical Investigations – June 2022 through 2024.

As we get a more refined schedule for Priority 1, we will definitely share with the team, including you.

As Janice mentioned, AB 52 consultation will occur for the Priority 1 effort and you should be receiving a letter in the very near future.

If you have any questions, please let us know. Thank you again for carving out time for us this morning.

*Environmental Project Manager*

**Due to COVID-19, I will be working from home. Please contact me via cell # listed below. Be safe out there!**



2379 Gateway Oaks Drive, Suite 200  
Sacramento, CA 95833  
D 916-679-8854  
M 209-329-6897

[Jelica.Arsenijevic@hdrinc.com](mailto:Jelica.Arsenijevic@hdrinc.com)

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/25/2022 2:41:48 PM  
**To:** Laverne Bill [LBill@yochadehe-nsn.gov]; 'Janis Offermann' [janis@horizonh2o.com]; Kevin Spesert [kspesert@sitesproject.org]; 'Laurie Warner Herson' [laurie.warner.herson@phenixenv.com]; Victoria Delgado [VDelgado@yochadehe-nsn.gov]; Rebekah Canavesio [RCanavesio@yochadehe-nsn.gov]  
**Subject:** RE: Cancellation of today's meeting

Hi all – I assume we have not heard anything from DWR on the data. I just left a voicemail for my contact at DWR to start to elevate this issue.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Laverne Bill <LBill@yochadehe-nsn.gov>  
**Sent:** Thursday, January 20, 2022 12:54 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; 'Janis Offermann' <janis@horizonh2o.com>; Kevin Spesert <kspesert@sitesproject.org>; 'Laurie Warner Herson' <laurie.warner.herson@phenixenv.com>; Victoria Delgado <VDelgado@yochadehe-nsn.gov>; Rebekah Canavesio <RCanavesio@yochadehe-nsn.gov>  
**Subject:** RE: Cancellation of today's meeting

Good afternoon, Alicia. Thank you for following up on this issue and this would be a great idea if we do not hear anything by Monday of next week. We will keep you posted. Have a great weekend.

**Laverne Bill**  
*Director of Cultural Resources*

**Yocha Dehe Wintun Nation**  
PO Box 18 | Brooks, CA 95606  
p 530.796.3400 | c 530.723.3891  
f 530.796.2143  
[lbill@yochadehe-nsn.gov](mailto:lbill@yochadehe-nsn.gov)  
[www.yochadehe.org](http://www.yochadehe.org)

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Thursday, January 20, 2022 8:52 AM  
**To:** Janis Offermann <janis@horizonh2o.com>; Kevin Spesert <kspesert@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Laverne Bill <LBill@yochadehe-nsn.gov>; Victoria Delgado <VDelgado@yochadehe-nsn.gov>; Rebekah Canavesio <RCanavesio@yochadehe-nsn.gov>  
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[Warning External Sender]

That sounds good.

Laverne – Let me know if you cant get ahold of DWR in the next couple of days to get the data. I will elevate the issue with DWR. I've been holding off on doing this as sometimes getting management involved brings attorneys and questions and can slow the process. But this process has been exceptionally slow as it is. So if we don't see movement in the next few days, then I will elevate.

Ali

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**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>

**Sent:** Thursday, January 20, 2022 8:07 AM

**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Laurie Warner Herson <[laurie.warner.herson@phenixenv.com](mailto:laurie.warner.herson@phenixenv.com)>

**Cc:** Laverne Bill <[L.Bill@yochadehe-nsn.gov](mailto:L.Bill@yochadehe-nsn.gov)>; Victoria Delgado <[VDelgado@yochadehe-nsn.gov](mailto:VDelgado@yochadehe-nsn.gov)>; Rebekah Canavesio <[RCanavesio@yochadehe-nsn.gov](mailto:RCanavesio@yochadehe-nsn.gov)>

**Subject:** Cancellation of today's meeting

Good morning everyone

Laverne and I exchanged emails this morning and decided to cancel today's scheduled meeting since we are still waiting on the transfer of site record/GIS data to Yocha Dehe. Hopefully next month will be more productive.

Thanks

janis

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

1801 Seventh Street, Suite 100

Sacramento, CA 95811

530.220.4918 (cell)

---

**From:** Laverne Bill [LBill@yochadehe-nsn.gov]  
**Sent:** 1/25/2022 2:56:40 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; 'Janis Offermann' [janis@horizonh2o.com]; Kevin Spesert [kspesert@sitesproject.org]; 'Laurie Warner Herson' [laurie.warner.herson@phenixenv.com]; Victoria Delgado [VDelgado@yochadehe-nsn.gov]; Rebekah Canavesio [RCanavesio@yochadehe-nsn.gov]  
**Subject:** RE: Cancellation of today's meeting

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**Laverne Bill**  
*Director of Cultural Resources*

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[www.yochadehe.org](http://www.yochadehe.org)

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Tuesday, January 25, 2022 2:42 PM  
**To:** Laverne Bill <LBill@yochadehe-nsn.gov>; 'Janis Offermann' <janis@horizonh2o.com>; Kevin Spesert <kspesert@sitesproject.org>; 'Laurie Warner Herson' <laurie.warner.herson@phenixenv.com>; Victoria Delgado <VDelgado@yochadehe-nsn.gov>; Rebekah Canavesio <RCanavesio@yochadehe-nsn.gov>  
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**Sent:** Thursday, January 20, 2022 8:07 AM

**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Laurie Warner Herson <[laurie.warner.herson@phenixenv.com](mailto:laurie.warner.herson@phenixenv.com)>

**Cc:** Laverne Bill <[LBill@yochadehe-nsn.gov](mailto:LBill@yochadehe-nsn.gov)>; Victoria Delgado <[VDelgado@yochadehe-nsn.gov](mailto:VDelgado@yochadehe-nsn.gov)>; Rebekah Canavesio <[RCanavesio@yochadehe-nsn.gov](mailto:RCanavesio@yochadehe-nsn.gov)>

**Subject:** Cancellation of today's meeting

Good morning everyone

Laverne and I exchanged emails this morning and decided to cancel today's scheduled meeting since we are still waiting on the transfer of site record/GIS data to Yocha Dehe. Hopefully next month will be more productive.

Thanks

janis

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

---

**From:** Janis Offermann [janis@horizonh2o.com]  
**Sent:** 1/25/2022 3:36:29 PM  
**To:** Starkey, Anna [Anna.Starkey@aecom.com]  
**CC:** Anna Cheng [acheng@auburnrancheria.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]  
**Subject:** FW: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Good afternoon, Anna

I hope all is well with you in this new year.

I am not sure how UAIC tracks and reviews project EIRs but I wanted to let you know that the revised EIR for Sites Reservoir is currently available for public review at <https://sitesproject.org/environmental-review/> through January 28, 2022. I apologize for not reaching out to you directly with this information sooner, but I know UAIC was sent an announcement of the availability of the EIR by the Sites Project Authority.

Please let me know if you have any questions.

Thanks

Janis

### Janis Offermann

Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

---

**From:** Anna Starkey <astarkey@auburnrancheria.com>  
**Sent:** Thursday, July 22, 2021 1:31 PM  
**To:** 'Janis Offermann' <janis@horizonh2o.com>  
**Cc:** Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Anna Cheng <acheng@auburnrancheria.com>  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Ms. Offerman,

On behalf of the United Auburn Indian Community, thank you for the information on the above referenced project. We have reviewed the project and it is located predominantly outside of the Tribes' geographic area of traditional and cultural affiliation. Therefore, UAIC will defer tribal consultation to affiliated tribes that are closer to this project. However, we would like to continue to receive project updates and have the opportunity to review and comment on the draft environmental report, including the cultural report. Please also let me know if other tribes are actively consulting.

Lastly, for all future notifications, we ask that you please use our online form, linked below. Please do this despite what the NAHC list provides. We have not updated our contact method with the NAHC yet, so it is out of date. The link below is the best way to contact UAIC for notifications and information gathering.

<https://auburnrancheria.com/programs-services/tribal-preservation/submit-agency-notification/> Bookmark this link!

Please acknowledge the receipt of this email and UAIC's requests.

Kind regards,

Anna Starkey

*The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. <https://auburnrancheria.com/programs-services/tribal-preservation> **Bookmark this link!***



---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>

**Sent:** Thursday, July 8, 2021 10:29 AM

**To:** Brian Guth <[bguth@auburnrancheria.com](mailto:bguth@auburnrancheria.com)>

**Cc:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Subject:** Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairperson Whitehouse,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814

916.465.8076 – office

530.220.4918 – mobile

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**From:** Cooke, Robert@DWR [Robert.Cooke@water.ca.gov]  
**Sent:** 1/25/2022 3:42:52 PM  
**To:** Leahigh, John@DWR [John.Leahigh@water.ca.gov]  
**Subject:** FW: Site site record .pdfs for Yocha Dehe

**Importance:** High

Hi John,

Perhaps you can help here, time is of the essence. The Sites Project Authority (Ali Forsythe) asked me to see if DWR (Anecita Agustinez) can release GIS data to the Yocha Dehe Tribe. You can see the email thread below.

Question: Can you please find out what the DWR policy is on giving out this data and let me know? Do you know Anecita Agustinez in DWR? I don't unfortunately. It appears there has been some difficulty getting this GIS data and it is very time sensitive.

See the email at the very bottom. Apparently this dataset was sent to Anecita Agustinez and Jacqueline Wait in DWR for approval to release by Janis Offermann of Horizon Water and Environment to the Yocha Dehe Tribe as part of the Sites Reservoir Revised Draft EIR/Supplemental Draft EIS review.

Thanks,  
Rob-

Rob Cooke  
Principal Engineer, PE, RA  
Department of Water Resources  
(916) 365-7915  
(916) 820-7792

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Tuesday, January 25, 2022 2:47 PM  
**To:** Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>  
**Subject:** FW: Site site record .pdfs for Yocha Dehe  
**Importance:** High

Hi Rob – See below on this. I just left you a voicemail also. It would be great to touch base with you when you get a chance.

Yocha Dehe Tribe really would like this data ASAP to help inform their comments on the Revised Draft EIR/Supplemental Draft EIS. I believe we just need DWR to “turn over” the data to Yocha Dehe. We have completed all of the analysis and compilation that Yocha Dehe has asked for and provided that to DWR. So, I think we simply need DWR to say it is okay to release the data to Yocha Dehe and we can have ICF post it to a secure site for the Tribes access.

Ali

---

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Sent:** Monday, January 24, 2022 9:28 AM  
**To:** [anecita.agustinez@water.ca.gov](mailto:anecita.agustinez@water.ca.gov)

**Cc:** Jacqueline.Wait <Jacqueline.Wait@water.ca.gov>; Laverne Bill <LBill@yochadehe-nsn.gov>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>

**Subject:** RE: Site site record .pdfs for Yocha Dehe

**Importance:** High

Good morning, Anecita

I just talked with Laverne Bill, and he said that he had chatted with you a week ago about receiving the site record data from DWR, noting that you said you were going to look into it. We have all been under the impression that DWR is in favor of supply the information to Yocha Dehe, so we would really like to move that along if you can please provide your approval. Also, we are now receiving comments on the revised EIR, and Yocha Dehe cannot fully comment without having the site record/GIS data.

Thanks in advance for your help.

Janis

**Janis Offermann**

Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

---

**From:** Janis Offermann <janis@horizonh2o.com>

**Sent:** Friday, January 14, 2022 2:22 PM

**To:** 'anecita.agustinez@water.ca.gov' <anecita.agustinez@water.ca.gov>

**Cc:** 'Jacqueline.Wait (Jacqueline.Wait@water.ca.gov)' <Jacqueline.Wait@water.ca.gov>

**Subject:** RE: Site site record .pdfs for Yocha Dehe

Hi, Anecita

I tried calling both your work and cell phones but wasn't able to leave a message.

Anyway, I was just wondering if you had time to consider our request to get the site record/GIS data to Yocha Dehe. We have our regular monthly meeting with Laverne next week and it would be nice to have some positive news to share with him..

Thanks and have a good weekend

Janis

---

**From:** Janis Offermann <janis@horizonh2o.com>

**Sent:** Monday, January 10, 2022 2:26 PM

**To:** 'anecita.agustinez@water.ca.gov' <anecita.agustinez@water.ca.gov>

**Cc:** Jacqueline.Wait (Jacqueline.Wait@water.ca.gov) <Jacqueline.Wait@water.ca.gov>

**Subject:** FW: Site site record .pdfs for Yocha Dehe

Hi, Anecita

I know you are swamped, but can we please resolve this and get the data to Yocha Dehe? Just say the word and we can arrange to make that happen.

Thanks

janis

---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Sent:** Friday, January 07, 2022 11:57 AM  
**To:** 'Wait, Jacqueline@DWR' <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>; 'Agustinez, Anecita S.@DWR' <[Anecita.Agustinez@water.ca.gov](mailto:Anecita.Agustinez@water.ca.gov)>  
**Subject:** RE: Site site record .pdfs for Yocha Dehe

Thanks for responding, Jackie.

The recipient of the information would be Andrew Cherna, Jr., Yocha Dehe's GIS specialist, and Laverne Bill, Yocha Dehe's Cultural Resources Coordinator. I think Laverne submitted a request to Anecita many months ago.

I will look forward to hearing from Anecita.

Thanks!  
janis

---

**From:** Wait, Jacqueline@DWR <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
**Sent:** Friday, January 07, 2022 11:35 AM  
**To:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>; Agustinez, Anecita S.@DWR <[Anecita.Agustinez@water.ca.gov](mailto:Anecita.Agustinez@water.ca.gov)>  
**Subject:** RE: Site site record .pdfs for Yocha Dehe

Happy New Year, Janis!

My holidays were a nice break from work and even saw some family. Hope that yours went well.

I am relying on Anecita to respond with the authorization; I think DWR would want something from the Tribe identifying the recipient of the data. Having ICF transmit the data on behalf of DWR would probably be the easiest way.

*Jackie*  
916.600.9973

---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Sent:** Friday, January 7, 2022 9:40 AM  
**To:** Agustinez, Anecita S.@DWR <[Anecita.Agustinez@water.ca.gov](mailto:Anecita.Agustinez@water.ca.gov)>; Wait, Jacqueline@DWR <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
**Subject:** FW: Site site record .pdfs for Yocha Dehe  
**Importance:** High

Happy New Year, Anecita and Jackie  
I hope you enjoyed the holidays.

I am really hoping that we can resolve the issue about providing Yocha Dehe with the site record/GIS data very soon. The revised EIR for Sites Reservoir is out for public review and we hope to have it finalized sometime this summer. However, our AB 52 consultations with Yocha Dehe have been stalled without these data and, as you know, we need to come to a resolution about treatment of tribal cultural resources before we can certify the EIR. We have done everything we can on our end to facilitate the transfer of information. Please help us move this process forward by providing Yocha Dehe the data, or authorizing us to do that.

Thank you!  
Janis

Janis Offermann



Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Sent:** Wednesday, December 29, 2021 3:18 PM  
**To:** [anecita.agustinez@water.ca.gov](mailto:anecita.agustinez@water.ca.gov); Jacqueline.Wait <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
**Subject:** Site site record .pdfs for Yocha Dehe  
**Importance:** High

Hi, Anecita and Jackie

ICF was able to establish a link that will allow you to download the site records linked with the GIS data for Sites Reservoir.

Please use this link:  <https://hdrinc-my.sharepoint.com/:f/p/drisse/EnAb8WVaRnNCilehRSAXDO0B2wJR0kc9q463t7xpDJTdzA?e=5WcoKI>.

This link will allow only the two of you to open the file, as it is tied to your email addresses. Once opened, please follow these instructions below do download the data.

With your permission, we can also provide the link to Yocha Dehe, so that they can download the information directly; you will not have to be a go-between.

I have not yet tried this way to access the data, so please let me know if you have any problems. Please also let me know if it is OK to provide Yocha Dehe with a direct link.

Thanks  
janis

Once the **Sites\_HyperlinkedPDFs\_20211221** file is unzipped, anyone with ArcMap can open the .mxd file and all they have to do is re-enter in the new local path pointing to the SiteRecords folder in the Map Document Properties (see highlighted screenshot below). Then when using the hyperlink button just click on a site shape in ArcMap and the pdf

record will open (assuming a .pdf reader is installed). Folks can call me if they have any problems.

Map Document Properties

General

File: :cordHyperlinks\Sites\_HyperlinkedPDFs\_20211221.mxd

Title:

Summary:

Description:

Author:

Credits:

Tags:

Hyperlink base:

Last Saved: 12/21/2021 3:14:50 PM

Last Printed:

Last Exported:

Default Geodatabase: E:\Users\39896\Documents\ArcGIS\Default.gdb

Pathnames:  Store relative pathnames to data sources

Thumbnail:

# Interior/Reclamation Meeting Agenda



*Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity*  
*Our Commitment – To live up to these values in everything we do*

## Meeting Information:

**Date:** January 26, 2022      **Location:** Reclamation’s Bay-Delta Office  
 4<sup>th</sup> Floor CR  
 801 I Street, Suite 140 Sacramento, CA 95814

**Start Time:** 1:30 p.m.      **Finish Time:** 3:00 p.m.

**Purpose:** Coordination of Activities Related to the Sites Reservoir Project.

## Meeting Participants:

Tanya Trujillo, Assistant Secretary, Department of Interior	Fritz Durst, RD108/Authority Board Chair
David Palumbo, Deputy Commissioner, Operations	Jeff Sutton, TCCA/Authority Board Vice-Chair
Ernest Conant, Regional Director	Jeff Harris, City of Sacramento Vice Mayor, Authority Board Member
Richard Welch, Principal Deputy Regional Director	Thad Bettner, GCID/Sites Participant
Russ Callejo, Deputy Regional Director Operations	Jerry Brown, Executive Director, Sites
Dave Mooney, Bay-Delta Office Manager	
Kristin White, Operations Manager	

## Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Introductions	All	5 mins
2. Update on Project Status	Sites/Reclamation	20 mins
3. Discuss Project Objectives	As noted	40 mins
a. Sites		
b. Reclamation/Interior		
4. Sources of Project Funding	All	20 mins
a. State Prop 1		
b. Federal Funding Sources		
(1) WIFIA		
(2) USDA		
(3) Other		
c. Local Borrowing		
5. Next Steps		5 mins

Sites Asks of the Assistant Secretary:

1. Support Reclamation Storage Program Funding Requests for Sites – project is financed with local, state and federal funds and 100% of construction funds need to be secured to start construction in 2024.
2. Support final approvals for Project environmental documents (i.e. sign the ROD), critical permits, and water rights acquisition on the Sites Authority’s schedule.
3. Support the Sites Authority in acquiring favorable federal grants and loans through WIFIA, USDA and other programs.

**Milestones and Dates Involving Federal Agencies for the Sites Reservoir Project**

Description	Needed Completion Date	Agency(ies) Involved
<b>Activities Related to Environmental Planning</b>		
Public Comment Period Closes on RDEIR/SDEIS	January 28, 2022	Sites, Reclamation
Complete Final EIR/EIS	October 2022	Sites, Reclamation
Issue NEPA Record of Decision and Notice of Determination	December 2022	Reclamation
<b>Activities Related to Permitting</b>		
Initiate Final Operations modeling around federal benefits and diversion criteria	January 24, 2022	Sites, Reclamation, CDFW
Develop and Submit Biological Assessment and Incidental Take Permit Operations Application	May 2022	Sites, Reclamation
Federal Agencies Issue Biological Opinions, State Issue Incidental Take Permits	December 2022	USFWS, NMFS, CDFW
<b>Activities Related to Water Rights</b>		
Support Development of Sites Water Right Application	In Progress	DWR, CDFW, SWRCB, Reclamation
Submit Sites Water Right Application	April 2022	Sites
Complete Application Review and Issue Public Notice	July 2022	SWRCB
Complete Resolution of Protests	March 2023	Sites, SWRCB
Conduct Hearing on Any Remaining Issues	Aug 2023	SWRCB
Issue Final Order and Water Right Permit	Dec 2023	SWRCB
<b>Activities Related to Operations Coordination</b>		
Resume Term Sheet Discussions	April 2022	Sites, Reclamation, DWR
Final Operations Agreement Ready to Execute	Dec 2022	Sites, Reclamation, DWR
<b>Activities Related to Federal Funding Assistance, WIFIA Loan, and Securing Local Funding</b>		
OMB Addendum Transmitted – Determination of federal benefits and federal funding assistance	June 2022	Reclamation
Dedication of Storage Funding to Sites (Interim)	Dec 2022	Sites, Reclamation
Dedication of Storage Funding to Sites (Final)	Dec 2023	Sites, Reclamation
Approve Loan Documents – Authority revenue bonds	Jan 2024	Sites
Invitation to Apply for WIFIA Loan	Feb 2022	EPA
Submit Application for WIFIA Loan	Feb 2023	Sites
Approve WIFIA Loan Documents	Jan 2024	Sites

---

**From:** Anna Starkey [astarkey@auburnrancheria.com]  
**Sent:** 1/26/2022 7:57:38 AM  
**To:** 'Janis Offermann' [janis@horizonh2o.com]  
**CC:** Alicia Forsythe [aforsythe@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Good morning Janis,

I'm very disappointed that this revised document still did not address my comment. This is unacceptable. It states on page 23-21 that there was no response from UAIC and I made a formal comment during the draft phase that this was incorrect, provided the consultation email, and yet this has still not be addressed. Can you please explain why?

I can forward you the official comment I submitted as well as our initial consultation response if needed. I would like an explanation of why UAIC was ignored.

Thank you,  
Anna

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**From:** Janis Offermann <janis@horizonh2o.com>  
**Sent:** Tuesday, January 25, 2022 3:39 PM  
**To:** Anna Starkey <astarkey@auburnrancheria.com>  
**Cc:** Anna Cheng <acheng@auburnrancheria.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>  
**Subject:** FW: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

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Please let me know if you have any questions.

Thanks

Janis

**Janis Offermann**  
Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
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530.220.4918 (cell)

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<acheng@auburnrancheria.com>

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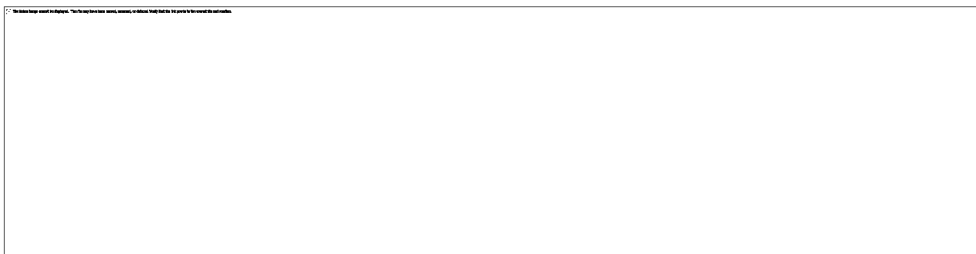
<https://auburnrancheria.com/programs-services/tribal-preservation/submit-agency-notification/> Bookmark this link!

Please acknowledge the receipt of this email and UAIC's requests.

Kind regards,

Anna Starkey

*The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. <https://auburnrancheria.com/programs-services/tribal-preservation> **Bookmark this link!***



---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>

**Sent:** Thursday, July 8, 2021 10:29 AM

**To:** Brian Guth <[bguth@auburnrancheria.com](mailto:bguth@auburnrancheria.com)>

**Cc:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Subject:** Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairperson Whitehouse,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814

916.465.8076 – office

530.220.4918 – mobile

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**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/26/2022 8:36:15 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; Fisher, Linda [linda.fisher@hdrinc.com]  
**CC:** Kevin Spesert [kspesert@sitesproject.org]; Janis Offermann (Janis@Horizonh2o.com) [janis@horizonh2o.com]  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis  
**Attachments:** 12\_16\_2021 6\_54 PM NOA of Revised Draft EIR\_ Supplemental Draft EIS\_ Sites Reservoir Project.eml

Yes, it's here:

✉ [https://sitesreservoirproject.sharepoint.com/:u:/r/sites/SitesReservoirShare/EIR%20EIS%20Comments/12\\_16\\_2021%206\\_54%20PM%20NOA%20of%20Revised%20Draft%20EIR\\_%20Supplemental%20Draft%20EIS\\_%20Sites%20Reservoir%20Project.eml?csf=1&web=1&e=N46HzP](https://sitesreservoirproject.sharepoint.com/:u:/r/sites/SitesReservoirShare/EIR%20EIS%20Comments/12_16_2021%206_54%20PM%20NOA%20of%20Revised%20Draft%20EIR_%20Supplemental%20Draft%20EIS_%20Sites%20Reservoir%20Project.eml?csf=1&web=1&e=N46HzP) and attached.

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 26, 2022 8:33 AM  
**To:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <linda.fisher@hdrinc.com>  
**Cc:** Kevin Spesert <kspesert@sitesproject.org>; Janis Offermann (Janis@Horizonh2o.com) <janis@horizonh2o.com>  
**Subject:** FW: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Laurie and Linda – can you check the RDEIR/SDEIS comment record and see if we have a comment from United Auburn Indian Council?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Janis Offermann <janis@horizonh2o.com>  
**Sent:** Wednesday, January 26, 2022 8:30 AM  
**To:** Anna Starkey <astarkey@auburnrancheria.com>  
**Cc:** Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Hi, Anna

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Thanks  
Janis

Janis Offermann



Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

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**Cc:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>  
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Please let me know if you have any questions.

Thanks

Janis

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Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
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**Sent:** Thursday, July 22, 2021 1:31 PM

**To:** 'Janis Offermann' <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>

**Cc:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Anna Cheng <[acheng@auburnrancheria.com](mailto:acheng@auburnrancheria.com)>

**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Ms. Offerman,

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Lastly, for all future notifications, we ask that you please use our online form, linked below. Please do this despite what the NAHC list provides. We have not updated our contact method with the NAHC yet, so it is out of date. The link below is the best way to contact UAIC for notifications and information gathering.

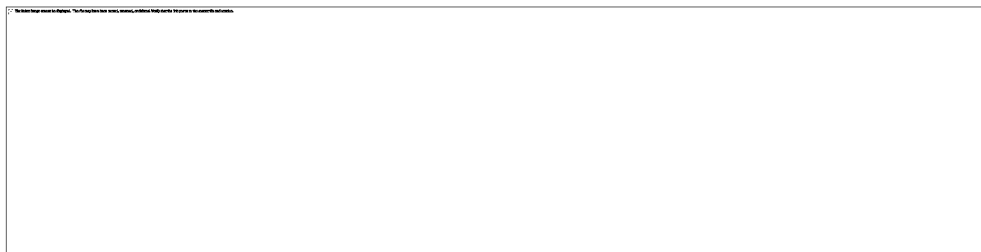
<https://auburnrancheria.com/programs-services/tribal-preservation/submit-agency-notification/> Bookmark this link!

Please acknowledge the receipt of this email and UAIC's requests.

Kind regards,

Anna Starkey

*The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. <https://auburnrancheria.com/programs-services/tribal-preservation> **Bookmark this link!***



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**Sent:** Thursday, July 8, 2021 10:29 AM

**To:** Brian Guth <[bguth@auburnrancheria.com](mailto:bguth@auburnrancheria.com)>

**Cc:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Subject:** Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairperson Whitehouse,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814

916.465.8076 – office

530.220.4918 – mobile

---

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**From:** Anna Starkey [astarkey@auburnrancheria.com]  
**Sent:** 12/16/2021 10:54:09 AM  
**To:** 'EIR-EIS-Comments@sitesproject.org' [EIR-EIS-Comments@sitesproject.org]  
**Subject:** NOA of Revised Draft EIR/ Supplemental Draft EIS: Sites Reservoir Project

Dear Mr. Brown,

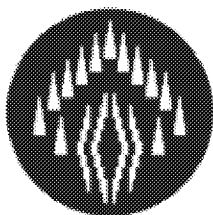
On behalf of the United Auburn Indian Community, Tribal Historic Preservation Department, thank you for the notification and opportunity to comment on the Sites Reservoir DEIR/EIS. We have reviewed the Cultural and Tribal Cultural Resources chapters that were provided to us and have the following comment:

Page 23-12 of the TCR chapter states that UAIC was contacted and provided no response. This is not correct. UAIC was contacted and emailed with Janis Offerman, Cultural Resources Practice Lead of Horizon Water and Environment, on July 22, 2021 for the Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis. The email stated UAIC will “defer tribal consultation to affiliated tribes that are closer to this project. However, we would like to continue to receive project updates and have the opportunity to review and comment on the draft environmental report, including the cultural report. Please also let me know if other tribes are actively consulting”.

Stating in your document that UAIC was unresponsive is incorrect and should accurately reflect our input to the project.

Thank you,  
Anna Starkey

*The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. <https://auburnrancheria.com/programs-services/tribal-preservation> **Bookmark this link!***



**Anna M. Starkey, M.A., RPA**  
Cultural Regulatory Specialist  
Tribal Historic Preservation Department | UAIC  
10720 Indian Hill Road  
Auburn, CA 95603  
Direct line: (916) 251-1565 | Cell: (530) 863-6503  
[astarkey@auburnrancheria.com](mailto:astarkey@auburnrancheria.com) | [www.auburnrancheria.com](http://www.auburnrancheria.com)

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**From:** Janis Offermann [janis@horizonh2o.com]  
**Sent:** 1/26/2022 9:15:54 AM  
**To:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Risse, Danielle [Danielle.Risse@hdrinc.com]  
**CC:** Alicia Forsythe [aforsythe@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis  
**Attachments:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis; 2022\_01\_26\_Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis.pdf

Hi, Laurie

Here is the complete recent exchange with UAIC.

I will be sure to keep you better informed moving forward.

Thanks

janis

---

**From:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Sent:** Wednesday, January 26, 2022 8:58 AM  
**To:** Janis Offermann (Janis@Horizonh2o.com) <janis@horizonh2o.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>  
**Cc:** Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Hi all –

It would be helpful for me to be copied on any AB 52 or other tribal correspondence so I can make sure we have a record in SharePoint. I can be blind copied or emails can be forwarded. Alternatively, you can upload emails, phone records, etc. here:

[https://sitesreservoirproject.sharepoint.com/:f:/r/EnvPlanning/Confidential/Sites%20Reservoir%20Project%20Cultural/AB%2052/AB%2052%20-%202020%20Revised%20Draft%20EIR/AB%2052\\_other%20correspondence?csf=1&web=1&e=llgjj9](https://sitesreservoirproject.sharepoint.com/:f:/r/EnvPlanning/Confidential/Sites%20Reservoir%20Project%20Cultural/AB%2052/AB%2052%20-%202020%20Revised%20Draft%20EIR/AB%2052_other%20correspondence?csf=1&web=1&e=llgjj9)

Thank you !

Laurie

---

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**Sent:** Wednesday, January 26, 2022 8:33 AM  
**To:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <linda.fisher@hdrinc.com>  
**Cc:** Kevin Spesert <kspesert@sitesproject.org>; Janis Offermann (Janis@Horizonh2o.com) <janis@horizonh2o.com>  
**Subject:** FW: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

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Draft\_0014747

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Hi, Anna

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Thanks  
Janis

**Janis Offermann**  
Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

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Thank you,  
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Kind regards,

Anna Starkey

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Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

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916.465.8076 – office

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**Sent:** 1/26/2022 8:49:31 AM  
**To:** Anna Starkey [astarkey@auburnrancheria.com]  
**CC:** Kevin Spesert [kspesert@sitesproject.org]; Janis Offermann [janis@horizonh2o.com]  
**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Hi Anna – My apologies for the confusion. We sent you the reminder yesterday as we pulled out your original email and actually realized our error in Chapter 23 of the document (in that you did respond and had asked to receive project information).

After your email this morning, I had the team pull the comments that we received thus far on the document, and we now see your comment submitting on December 16 – also noting the error that we have in Chapter 23.

Thank you for your comment and for noting this error in the document. We will correct this for the Final EIR/EIS, which will be released later this calendar year.

My apologies for the confusion and the error in the document.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**Sent:** Thursday, July 22, 2021 1:31 PM  
**To:** 'Janis Offermann' <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Cc:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Anna Cheng

<acheng@auburnrancheria.com>

**Subject:** RE: Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Ms. Offerman,

On behalf of the United Auburn Indian Community, thank you for the information on the above referenced project. We have reviewed the project and it is located predominantly outside of the Tribes' geographic area of traditional and cultural affiliation. Therefore, UAIC will defer tribal consultation to affiliated tribes that are closer to this project. However, we would like to continue to receive project updates and have the opportunity to review and comment on the draft environmental report, including the cultural report. Please also let me know if other tribes are actively consulting.

Lastly, for all future notifications, we ask that you please use our online form, linked below. Please do this despite what the NAHC list provides. We have not updated our contact method with the NAHC yet, so it is out of date. The link below is the best way to contact UAIC for notifications and information gathering.

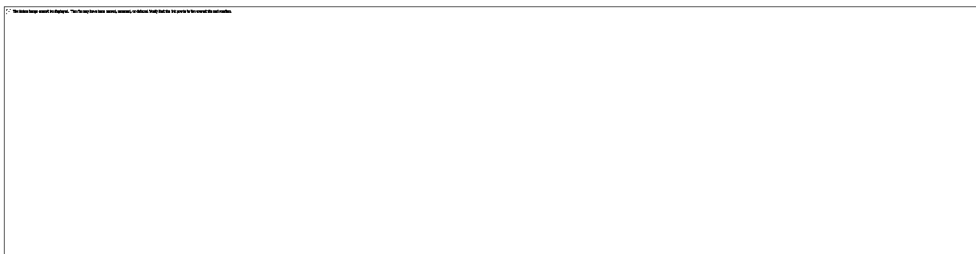
<https://auburnrancheria.com/programs-services/tribal-preservation/submit-agency-notification/> Bookmark this link!

Please acknowledge the receipt of this email and UAIC's requests.

Kind regards,

Anna Starkey

*The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. <https://auburnrancheria.com/programs-services/tribal-preservation> **Bookmark this link!***



---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>

**Sent:** Thursday, July 8, 2021 10:29 AM

**To:** Brian Guth <[bguth@auburnrancheria.com](mailto:bguth@auburnrancheria.com)>

**Cc:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Subject:** Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairperson Whitehouse,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814

916.465.8076 – office

530.220.4918 – mobile

---

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---

**From:** Sites Project Authority [info@sitesproject.org]  
**Sent:** 1/26/2022 11:24:19 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** InSITES: Reminder – Jan. 28 Close of Public Comment Period – RDEIR/SDEIS for Sites Reservoir

InSITES: Reminder – Jan. 28 Close of Public Comment Period – RDEIR/SDEIS for Sites Reservoir

[View this email in your browser](#)



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#### REMINDER

Public Comment Period for Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for Sites Reservoir Closes at 5 p.m. Pacific Standard Time (PST) on Friday, Jan. 28, 2022

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#### SUBMITTING COMMENTS

Comments on the RDEIR/SDEIS may be submitted to the Sites Project Authority (Authority) and U.S. Bureau of Reclamation (Reclamation) as follows:

Email comments to: [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

Mail comments to: Sites Project Authority, P.O. Box 517, Maxwell, CA 95955, or Bureau of Reclamation, 2800 Cottage Way, W-2830, Sacramento, CA 95825

All comments must be postmarked or received by **5 p.m. PST on Jan. 28, 2022**. The Authority and Reclamation will consider all substantive comments received during the public comment period in the development of the Final EIR/EIS.

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In accordance with the California Environmental Quality Act and the National Environmental Policy Act, the Authority and Reclamation have prepared a RDEIR/SDEIS to analyze the potential environmental impacts of construction, operation, and maintenance of the Sites Reservoir Project.

The public review and comment period for the RDEIR/SDEIS began on Nov. 12, 2021, and will end on Jan. 28, 2022. The Authority and Reclamation held virtual public meetings on Dec. 15 and 16, 2021, to provide information about the Sites Reservoir Project and the draft environmental analysis, and to accept public comments on the RDEIR/SDEIS. The virtual public meeting presentation is available at [sitesproject.org/environmental-review](https://sitesproject.org/environmental-review).

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#### RDEIR/SDEIS INFORMATION

The RDEIR/SDEIS is available for public review at [sitesproject.org/environmental-review](https://sitesproject.org/environmental-review).

Copies of the RDEIR/SDEIS are also available for viewing at the following locations:

- Sites Project Authority, 122 Old Highway 99 West, Maxwell, CA 95955
- Bureau of Reclamation, California-Great Basin Regional Office Library, 2800 Cottage Way, Sacramento, CA 95825
- Maxwell Branch Library, 34 Oak Street, Maxwell, CA 95955
- Sacramento Public Library, Central Branch, 828 I Street, Sacramento, CA 95814
- Colusa County Free Library, Main Branch, 738 Market Street, Colusa, CA 95932
- Glenn County Public Library, Willows Branch, 201 N. Lassen Street, Willows, CA 95988

- Tehama County Library, Red Bluff Branch, 645 Madison Street, Red Bluff, CA 96080
- Yolo Branch Library, 37750 Sacramento Street, Yolo, CA 95697
- Mary L. Stephens – Davis Branch Library, 315 E. 14th Street, Davis, CA 95616

For individuals requesting reasonable accommodations, please contact the Sites Project Authority at 530-438-2309 or [BoardClerk@SitesProject.org](mailto:BoardClerk@SitesProject.org).



This email was sent to [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)  
[why did I get this?](#) [unsubscribe from this list](#) [update subscription preferences](#)

Sites Project Authority · P.O. Box 517 · Maxwell, CA 95955 · USA



---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/26/2022 3:45:02 PM  
**To:** Janis Offermann (Janis@Horizonh2o.com) [janis@horizonh2o.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Kevin Spesert [kspesert@sitesproject.org]  
**Subject:** FW: Site site record .pdfs for Yocha Dehe  
**Importance:** High

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Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**Sent:** Monday, January 24, 2022 9:28 AM  
**To:** [anecita.agustinez@water.ca.gov](mailto:anecita.agustinez@water.ca.gov)  
**Cc:** Jacqueline.Wait <Jacqueline.Wait@water.ca.gov>; Laverne Bill <LBill@yochadehe-nsn.gov>; Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
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Good morning, Anecita

I just talked with Laverne Bill, and he said that he had chatted with you a week ago about receiving the site record data from DWR, noting that you said you were going to look into it. We have all been under the impression that DWR is in favor of supply the information to Yocha Dehe, so we would really like to move that along if you can please provide your approval. Also, we are now receiving comments on the revised EIR, and Yocha Dehe cannot fully comment without having the site record/GIS data.

Thanks in advance for your help.  
Janis

**Janis Offermann**  
Cultural Resources Practice Leader  
Horizon Water and Environment  
1801 Seventh Street, Suite 100  
Sacramento, CA 95811  
530.220.4918 (cell)

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**Sent:** Friday, January 14, 2022 2:22 PM  
**To:** 'anecita.agustinez@water.ca.gov' <[anecita.agustinez@water.ca.gov](mailto:anecita.agustinez@water.ca.gov)>  
**Cc:** 'Jacqueline.Wait ([Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov))' <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
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Anyway, I was just wondering if you had time to consider our request to get the site record/GIS data to Yocha Dehe. We have our regular monthly meeting with Laverne next week and it would be nice to have some positive news to share with him..

Thanks and have a good weekend

Janis

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**Sent:** Monday, January 10, 2022 2:26 PM  
**To:** 'anecita.agustinez@water.ca.gov' <[anecita.agustinez@water.ca.gov](mailto:anecita.agustinez@water.ca.gov)>  
**Cc:** Jacqueline.Wait ([Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)) <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
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Hi, Anecita

I know you are swamped, but can we please resolve this and get the data to Yocha Dehe? Just say the word and we can arrange to make that happen.

Thanks

janis

---

**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Sent:** Friday, January 07, 2022 11:57 AM  
**To:** 'Wait, Jacqueline@DWR' <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>; 'Agustinez, Anecita S.@DWR' <[Anecita.Agustinez@water.ca.gov](mailto:Anecita.Agustinez@water.ca.gov)>  
**Subject:** RE: Site site record .pdfs for Yocha Dehe

Thanks for responding, Jackie.

The recipient of the information would be Andrew Cherna, Jr., Yocha Dehe's GIS specialist, and Laverne Bill, Yocha Dehe's Cultural Resources Coordinator. I think Laverne submitted a request to Anecita many months ago.

I will look forward to hearing from Anecita.

Thanks!

janis

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My holidays were a nice break from work and even saw some family. Hope that yours went well.

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*Jackie*  
916.600.9973

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**Sent:** Friday, January 7, 2022 9:40 AM  
**To:** Agustinez, Anecita S. @DWR <[Anecita.Agustinez@water.ca.gov](mailto:Anecita.Agustinez@water.ca.gov)>; Wait, Jacqueline@DWR <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
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I hope you enjoyed the holidays.

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Thank you!  
Janis

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1801 Seventh Street, Suite 100  
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530.220.4918 (cell)

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**From:** Janis Offermann <[janis@horizonh2o.com](mailto:janis@horizonh2o.com)>  
**Sent:** Wednesday, December 29, 2021 3:18 PM  
**To:** [anecita.agustinez@water.ca.gov](mailto:anecita.agustinez@water.ca.gov); Jacqueline.Wait <[Jacqueline.Wait@water.ca.gov](mailto:Jacqueline.Wait@water.ca.gov)>  
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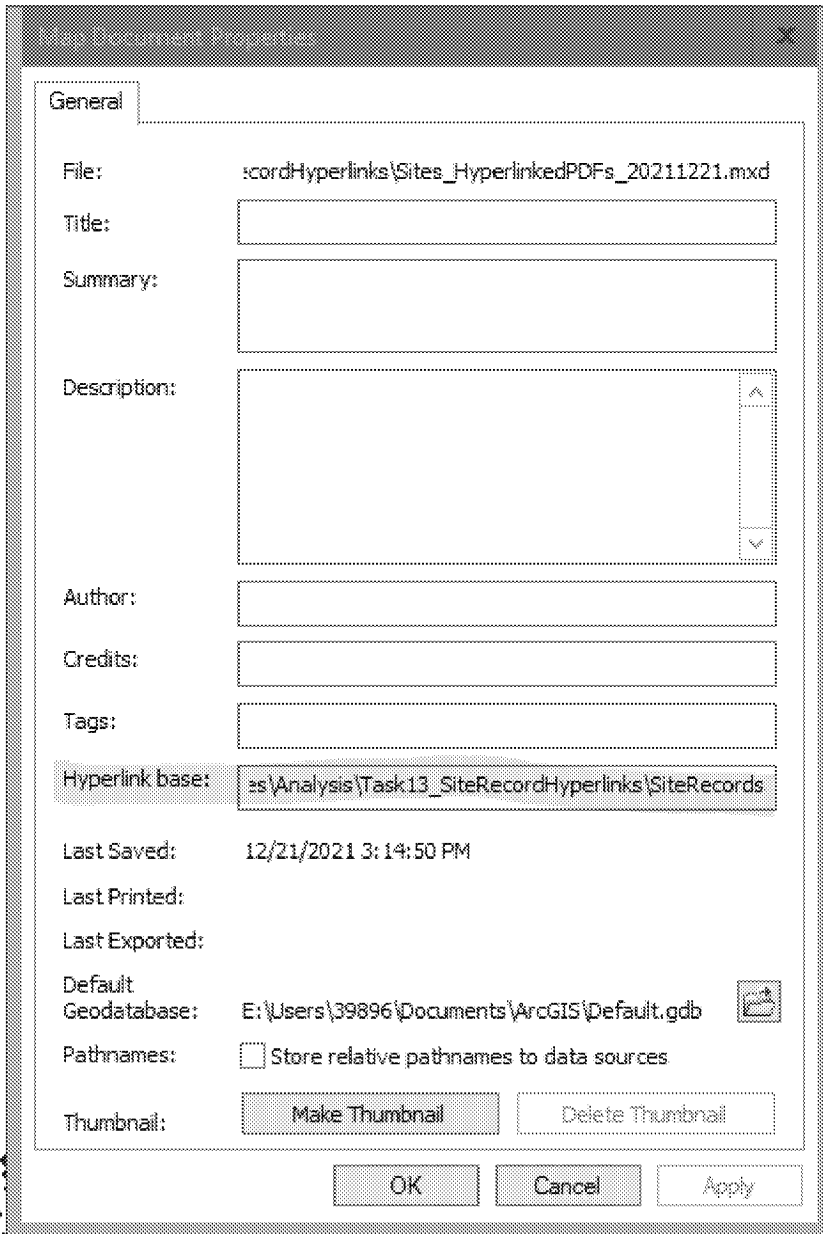
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Thanks  
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---

**From:** Janis Offermann [janis@horizonh2o.com]  
**Sent:** 1/26/2022 3:49:42 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Kevin Spesert [kspesert@sitesproject.org]  
**Subject:** RE: Site site record .pdfs for Yocha Dehe

Hi, Ali

Unfortunately Anecita never named any of the attorneys that she consulted on this issue. She just referenced the generic legal team. Sorry I can't be of help.  
Thanks for getting the ball rolling, though.  
janis

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, January 26, 2022 3:45 PM  
**To:** Janis Offermann (Janis@Horizonh2o.com) <janis@horizonh2o.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert <kspesert@sitesproject.org>  
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record will open (assuming a .pdf reader is installed). Folks can call me if they have any problems.

The image shows a screenshot of the 'Map Document Properties' dialog box in ArcGIS, with the 'General' tab selected. The dialog box contains the following fields and controls:

- File:** :cordHyperlinks\Sites\_HyperlinkedPDFs\_20211221.mxd
- Title:** [Empty text box]
- Summary:** [Empty text box]
- Description:** [Empty text box with scroll arrows]
- Author:** [Empty text box]
- Credits:** [Empty text box]
- Tags:** [Empty text box]
- Hyperlink base:** es\Analysis\Task13\_SiteRecordHyperlinks\SiteRecords
- Last Saved:** 12/21/2021 3:14:50 PM
- Last Printed:** [Empty text box]
- Last Exported:** [Empty text box]
- Default Geodatabase:** E:\Users\39896\Documents\ArcGIS\Default.gdb [Browse icon]
- Pathnames:**  Store relative pathnames to data sources
- Thumbnail:** [Make Thumbnail] [Delete Thumbnail]

At the bottom of the dialog box are three buttons: **OK**, **Cancel**, and **Apply**.

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/26/2022 4:18:30 PM  
**To:** matayaba@ssband.org  
**CC:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Subject:** Sites Reservoir Project  
**Attachments:** 20210615\_Outreach\_Letter\_Cuellar\_Shingle\_Springs.pdf; 07082021\_Shingle Springs\_followup\_Sites Reservoir.pdf

Hi Malissa – I wanted to reach out to you following your comments at the December 15 California Water Commission meeting. I appreciate your comments and the concerns you expressed.

I heard you express concerns that the Shingle Springs Band of Miwok Indians had not been contacted by the Sites Project.

In looking back at our records, we show that the Sites Project contacted your Tribe in June 2021 via certified mail and followed up with an email on July 8, 2021. I've attached both the June letter and the July email for your information. We did not receive a response from the Tribe.

Please let me know if we should be reaching out to someone else in your Tribe.

We are happy to discuss the Project and the Tribe's concerns. We appreciate your comments and value your feedback. Please let me know if you would like to talk about the Project and we can set up a time to discuss.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 | [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

CONFIDENTIALITY NOTICE: This communication with its contents may contain confidential and/or legally privileged information. It is solely for the use of the intended recipient(s). Unauthorized interception, review, use or disclosure is prohibited and may violate applicable laws including the Electronic Communications Privacy Act. If you are not the intended recipient, please contact the sender and destroy all copies of the communication.



June 15, 2021

Mrs. Regina Cuellar, Chairwoman  
Shingle Springs Band of Miwok Indians  
P.O. Box 1340  
Shingle Springs, CA 95682

Subject: Notification of Proposed Project for the Purposes of CEQA Analysis

Dear Honorable Chairwoman Cuellar:

The Sites Project Authority is preparing a Revised Draft Environmental Impact Report (RDEIR) for the proposed Sites Reservoir Project, which includes a new off-stream storage reservoir located in Colusa and Glenn counties, California, about 10 miles west of the town of Maxwell. The Authority published a Draft EIR for the Project in 2017. The Authority has since modified the Project, including revisions to the Project footprint, as depicted in the attached staff report on the Project description. For more detailed information regarding the Project, please see the preliminary draft Project description, which can be found at [https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites\\_Preliminary-Project-Description\\_20210219.pdf](https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/Sites_Preliminary-Project-Description_20210219.pdf).

The Authority has identified the Shingle Springs Band of Miwok Indians as potentially having an interest in this Project and its operations, as revised. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you would like to discuss the Project with us, we respectfully request that you respond, in writing, within 30 days to our designated contact person below, and that you provide a designated contact person for the discussions:

Kevin Spesert, External Affairs Manager  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955  
Phone: (530) 632-4071  
Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)

Sincerely,

A handwritten signature in black ink that reads "Fritz Durst".

Fritz Durst, Chair



P.O. Box 517  
Maxwell, CA 95955  
530.438.2309



Janis Offermann &lt;janis@horizonh2o.com&gt;

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## Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis

1 message

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**Janis Offermann** <janis@horizonh2o.com>

Thu, Jul 8, 2021 at 10:31 AM

To: rcuellar@ssband.org

Cc: Kevin Spesert &lt;kspesert@sitesproject.org&gt;, Alicia Forsythe &lt;aforsythe@sitesproject.org&gt;

Bcc: Laurie Warner Herson &lt;laurie.warner.herson@phenixenv.com&gt;

Dear Honorable Chairperson Cuellar,

I am writing on behalf of the Sites Project Authority as a follow-up to the attached letter mailed to you on June 15, 2021. The Authority welcomes your input on the Project and the Authority's evaluation of tribal cultural resources under CEQA. If you have any comments, please reach out to Kevin Spesert, Sites Project Authority External Affairs Manager, per his contact information listed below.

Kevin Spesert, External Affairs Manager

Sites Project Authority

P.O. Box 517

Maxwell, CA 95955

Phone: (530) 632-4071

Email: kspesert@sitesproject.org

Thank you for your time,

**Janis Offermann**

Cultural Resources Practice Leader

Horizon Water and Environment

400 Capitol Mall, Suite 2500

Sacramento, CA 95814


916.465.8076 – office

530.220.4918 – mobile

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### 2 attachments

**02-01 Posting RDEIR-SDEIS Project Description (1).pdf**  
8005K

 **20210615\_Outreach\_Letter\_Cuellar\_Shingle\_Springs.pdf**  
94K

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**From:** Richard Morat [rjmorat@gmail.com]  
**Sent:** 1/26/2022 4:36:35 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Sites Reservoir Project RDEIR/SDEIS, Comments of R. Morat

The Revised Draft Environmental Report/Supplemental Draft Environmental Impact Statements (RDEIR/SDEIS) fail to disclose important and highly adverse environmental impacts to fishery resources.

The RDEIR/SDEIS fail to display the magnitude, frequency and duration of hydrological differences between the without-the-project and the with-the-project (alternatives) environmental conditions to allow comprehending fishery impacts. The plotted summaries of the project-occasioned hydrological differences presented obfuscate short-term differences during fish-habitat-critical periods.

The two draft documents fail to display tabular data for the no-action baseline and each alternative by years and months. Metrics missing include average monthly reservoir storage (TAF), average monthly Sacramento River flow and estuarine inflow and outflow (CFS), and average monthly river water temperatures. It is essential that this data be presented for appropriate river and estuarine stations. Reservoirs must include Sites, Funks, any new TRR, Shasta, Trinity and Whiskeytown.

The documents are dishonest statements of the environmental consequences of the project alternatives should one be built and operated. The statements fail in their legislated duty. Both documents should be rejected for correction and re-released for public review as drafts.

Current fishery habitat conditions in the Sacramento River from Keswick Dam downstream, in the Sutter and Yolo bypasses, and in the Sacramento-San Joaquin estuary are bleak and worsening. Native, beneficial non-native, estuarine and anadromous fish populations are in drastic decline with extinction probable for some species. While technically there is un-appropriated water in the upper Sacramento River, much of the time there is none surplus to environmental needs. Human health and safety water needs are now recognized as having been inadequately protected by water project operations. Many projects have regularly over-delivered and when followed by dry conditions in subsequent years have potentially lost the ability to meet even human health and safety needs. Over-deliveries have definitely resulted in failed ability to meet water quality control plan standards and sustain the survival of some endangered species.

Fish are sustained by average as well as short term and some times instantaneous flow and water quality conditions. Mortality from direct and indirect factors depend on conditions, timing and duration. Durations as short as a day (e.g., redd dewatering) and hours (e.g., for lethal water temperatures) are often controlling entire populations of fish. The riverine and estuarine ecosystems are collapsing from what we expect them to be and the services they should provide.

The documents fail to include and evaluate the one alternative that might be reasonable albeit costly. An alternative with a new single-purpose diversion/return canal, pumps, generators and fish screens designed to manage diversion of at least 20,000 cfs is what is needed to yield the volumes of deliverable water matched to a 1 MAF+ Sites Reservoir. The water resources infrequently available for new diversion require a big-gulp capability - at least 5 times greater than what is proposed.

If Sites is constructed and operated as proposed the Sacramento River and the Sacramento-San Joaquin Rivers estuary inflow and outflow will be further diminished and aquatic resources further significantly diminished. Meeting a horribly un-protective standard is not a basis for claiming a no-impact assessment.

Reasonable and foreseeable actions with- and without-the-project that will greatly affect project accomplishments are complicated, uncertain, and plagued with the reality of water scarcity. It is reasonable and foreseeable to anticipate intensifying and disruptive climate change, water shortages, intense demand and priority for new supplies to meet human health and safety needs, the failure of voluntary settlement agreements to help bridge the gap to improve protection for instream beneficial uses, and failed groundwater management requiring much increased groundwater recharge via diversion and spreading of high winter flows.

Collectively these procedural deficiencies render the documents unacceptably misleading. Poor decisions will result in waste of public money and public trust resources..

The Notice of Availability states "The project's purpose is to provide direct and real benefits to instream flows, the Sacramento-San Joaquin Delta ecosystem, and water supply reliability". Nothing about this project and operations are beneficial for fish save for fish which might inhabit Sites Reservoir. The Project stated purpose and the project's actual impacts do not match.

The RDEIR/SDEIS can only be viewed as a hopeful approach anticipating that "If we build it we will find a way to fill it". Today too many surface water supply projects are regularly meeting their need to capture storage by petitioning and getting approval for temporary urgency changes in order to divert water that is not permissible by their issued permits and licenses. This approach is decimating fishery resources. Future water supply projects shouldn't operate off continual to almost annual temporary urgency change petitions. The reasonable future is that those petitions will eventually be addressed as petitions for long-term change and likely not receive nearly as favorable terms and conditions as in the past.

The only way Sites will collect significant Sacramento River water with the proposed scope of diversion and pumping facilities is for the Shasta and Trinity projects to be re-operated to be drained in the fall and early winter and the water transferred to Sites. This alternative is not proposed nor evaluated in these documents.

The State Water Resources Control Board does not pre-determine findings and do not attempt to dissuade parties from submitting applications and petitions if they comply with the administrative process and required fees. However, political, economic, environmental and social realities should inform applicants seeking to appropriate water. Environmental reality is a necessity that is lacking in these documents.

Richard Morat  
2821 Berkshire Way  
Sacramento, CA 95864  
916-487-9030  
[rjmorat@gmail.com](mailto:rjmorat@gmail.com)

# Sites Joint Powers Authority Scope of Project

## Sites Reservoir Project

### Recipient

Sites Project Authority  
122 Old Highway 99 West  
Maxwell, CA 95955  
530-438-2309

### Recipient Point of Contact (POC)

Joe Trapasso  
Sites Program Operations Manager  
122 Old Highway 99 West  
Maxwell, CA 95955  
530-387-1102/jtrapasso@sitesproject.org

### Recipient Personnel (Other than POC)

Jerry Brown  
Executive Director  
122 Old Highway 99 West  
925-260-7417/jbrown@sitesproject.org

## 1. Executive Summary

The Sites Project Authority (Authority) will lead the efforts for the operations simulation modeling required to support the revised Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the Sites Reservoir Project. Feasibility-level geotechnical work plans and field data collection will provide the necessary data for evaluation and reporting. Feasibility engineering will provide preliminary hydraulics modeling, California Division of Safety of Dams (DSOD) engagement, a Class IV cost estimate, technical and environmental feasibility, and a project description and feasibility-level designs. Preliminary engineering will establish project delivery methods for design packages and will advance the feasibility-level designs to preliminary 30%-level designs. This will also involve right-of-way efforts to gain right-of-entry to landowners' properties and coordination with landowners regarding project developments. A schedule and budget break down of the proposed work is included.

## 2. Project Description

The Sites Reservoir is proposed to be an off-stream reservoir that will be filled by pumping water from the Sacramento River. The project includes the Sites Reservoir and new facilities to integrate with both the existing Tehama-Colusa Canal (TC Canal) and Glenn-Colusa Irrigation District (GCID) Main Canal. Once constructed, the Sites Reservoir will be one of the state's largest reservoirs and will substantially increase surface water storage in the Sacramento Valley. The project's facilities will be independently owned and operated by the Authority under its own water rights and other regulatory requirements, in cooperation with the U.S. Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR)—operators of the Central Valley Project (CVP) and State Water Project (SWP), respectively.

Water Infrastructure Improvements for the Nation (WIIN) Act funding will allow the project to provide operations modeling and feasibility- and preliminary-level designs while also supporting the right-of-



entry and landowner coordination required to complete the geotechnical field work. The project scope is funding-limited, and deliverables are identified based on the level of funding available to the project. The scope outlined in the following sections will allow the Authority to support the development of the revised Draft EIR/EIS and prepare feasibility- and preliminary-level designs.

### **3. Tasks/Objectives**

Descriptions of the objectives of the project activities funded under this agreement are provided below.

#### ***Task 1 – Operations Modeling***

Operations modeling will evaluate the operations for up to three alternatives to be included in the EIR/EIS. This will also include modeling support for the Biological Assessment (BA)/Incidental Take Permit (ITP) and future climate change scenarios. This task will provide additional analysis of the preferred alternative specific to preparation of the BA/ITP and other analyses needed to support permitting efforts and water rights application. This task will also include fisheries modeling, climate change analysis of potential future hydrologic and sea level rise conditions, and mercury modeling with a qualitative assessment of mercury effects.

This task will also involve develop version 1 of the Sites Reservoir Operations Plan.

#### **Major Tasks:**

- full operations analysis
- EIR/EIS modeling support
- BA/ITP modeling support
- develop documentation for EIR/EIS
- develop documentation for BA/ITP
- Operations Plan, version 1

#### ***Task 2 – Engineering***

Engineering efforts will support the environmental impact assessment of the preferred project identified through the value planning process. Work will include completing feasibility-level designs and drawings of project features. This information will be used in estimating quantities and assessing impacts, assessing haul routes, identifying construction activities and schedules, and identifying key operation and maintenance activities for the EIS/EIR.

The engineering task will provide the preliminary hydraulics modeling, providing three types of models that are needed to size the facility components to meet the needs of the project. A Class IV cost estimate, including mitigation measures, will be developed for the facilities and associated mitigation measures developed by the environmental/permitting team. The engineering technical feasibility will include confirming public benefits and non-public benefits that will be quantified using physical and monetary measures. A benefits-based cost allocation will be included to support the demonstration of economic feasibility. A benefit-to-cost ratio will be developed to demonstrate that the expected benefits of the project equal or exceed the expected costs. The cost allocation will also be used to develop a cost assignment for the project; this information will demonstrate that sufficient funds will be available from public and non-public sources.

Engineering will provide a constructability analysis to demonstrate that the facilities can be constructed using existing technology and availability of construction materials, work force, and equipment. This effort may include evaluating and identifying feasible construction methods, viable materials and sources, construction phasing, site access, potential haul routes, temporary and permanent bridges, coffer dams in water bodies to allow construction in the dry, potential tunneling methods, long-lead items and durations, time periods when delivery of irrigation water can and cannot be interrupted, and flood constraints in the Colusa Basin Drain and Sacramento River. As the project progresses from preliminary to final design, it is expected that the constructability analysis will be updated and refined.

Based on the feasibility-level designs, engineering will develop a Program Design/Construction/Permit and Implementation Schedule, along with a Geotechnical Permit Planning and Investigation Plan that will include the execution of the feasibility-phase geotechnical exploration program that was conducted in 2020 and 2021.

Environmental feasibility will include conducting a feasibility-level design for the purpose of supporting the feasibility-level project description, construction cost estimates, and environmental documentation and permitting. This effort is needed to achieve the facility definition required for Class IV cost estimates and the information required for the Draft EIS/EIR. This will also include confirming environmental feasibility with mitigation.

Development of the Geotechnical Investigation Work Plans (GIWPs) for the final design phase will involve coordination with the geotechnical team, which will provide the details of the investigation methodology. Two GIWPs will be prepared: one for DSOD jurisdictional facilities (dams, inlet/outlet tower and tunnels, and spillway) and one for non-DSOD jurisdictional facilities (roads and bridge).

Preliminary engineering efforts will also be undertaken to advance from feasibility-level design (10%) to preliminary design (30%). This will be carried out for the preferred project, as identified in the Draft EIR/EIS.

#### **Major Tasks:**

- preliminary hydraulics model
- Class IV cost estimate
- DSOD engagement plan
- engineering – technical feasibility
- environmental feasibility support (project design/feasibility design)
- Geotechnical Permit Planning and Investigation Plan
- preliminary engineering

#### ***Task 3 – Geotechnical***

The geotechnical task involves work associated with planning, permitting, and execution of field data collection and support for Reclamation field teams at a select number of exploration points. The field data collection will inform and support the Sites Authority Feasibility Study and further development of the overall project description.

This task will include conducting field data collection in the Funks to TRR area and the proposed Dunnigan pipeline alignment area extending from the TCC to the Sacramento River. It will also include conducting a borrows study of TRR pipeline alignment soils and the location soils based on findings from the field exploration.

This task involves preparing two geotechnical data reports corresponding with field data collection activities. Each report will summarize all research and field activities conducted relevant to the study area, with chapters outlining findings and conclusions based on the information gathered during desktop and field activities, and specific chapters addressing data requests. Reports will be complete with field data logs, CPT and field survey reports completed by Reclamation, a geologic and geomorphic study technical memorandum completed by Fugro, borrow studies completed by Fugro, site plans depicting limits of the study, data locations and significant findings, and figures showing our interpretation of findings.

Preliminary planning for design-level geologic and geotechnical engineering investigations involves conducting a data gap assessment of geologic and geotechnical data needs related to each facility/feature proposed for the project.

Work plans for design-level geologic and geotechnical engineering investigations involves preparing two geologic and geotechnical engineering work plans describing the need for and methods to be used during design-level geologic and geotechnical engineering investigations.

#### **Major Tasks:**

- field data collection work plan/cost estimate
- geotechnical data reports
- preliminary planning for design
- site plan with proposed borings

#### ***Task 4 – Real Estate***

The real estate task involves work associated with land, real estate, right-of-way, interagency coordination, and public/landowner engagement considerations in support of the engineering, environmental, permitting, geotechnical, and communications efforts for the Sites Reservoir Project, in addition to programmatic real estate development for near-term land access, future land needs, land acquisition, and land management, in support of the Authority's objectives. This assumes an effort of engaging up to 25 landowners/tenants/entities for temporary right-of-entry access.

#### **Major Tasks:**

- real estate landowner coordination

## **4. Benefits**

The Sites Reservoir Project will offer several benefits to California on the state, regional, and local level. The benefits listed below include the Authority's overall project objectives. The project described in the application for financial assistance is required to move forward with the overall project and, therefore, these benefits:

- **Improve Water Supply and Water Supply Reliability.** The water stored and released from Sites Reservoir will allow for improved water supply and reliability for participants in the project and California on the state, regional, and local level.
- **Provide Incremental Level 4 Water Supply for Refuges.** The State has committed to invest in incremental Level 4 water supply for refuges at an undetermined level. Level 4 refuge demand is located primarily south of the Sacramento-San Joaquin Delta (Delta).

- **Improve the Survival of Anadromous Fish.** The Authority is supportive of actions that benefit salmon, steelhead, and other anadromous fish species of concern in the Sacramento River watershed. Exchanges with Reclamation enable the conservation of the coldwater pool in Shasta and Folsom Lakes. The species benefit from improved coldwater pool management, lower river water temperatures, and supplemental flows to prevent the dewatering of redds.
- **Enhance the Delta Ecosystem.** Water released from Sites Reservoir would be conveyed to the Yolo Bypass toe drain to convey biomass to the Delta to help supply food for Delta smelt.
- **Provide Opportunities for Recreation.** State funding will support the construction of new recreation facilities, including the Stone Corral Creek Recreation Area on the east side of the reservoir, a boat ramp on the west side of the reservoir, and the Peninsula Hills Recreation Area on the west side of the reservoir.
- **Provide Flood Damage Reduction.** Once completed, Sites Dam will reduce the likelihood of flooding in the Stone Corral Creek watershed, and Golden Gate Dam will improve flood damage reduction for extreme events on Funks Creek.

## 5. Environmental and Cultural Resources Compliance

All projects being considered for award funding require compliance with the National Environmental Policy Act (NEPA) before any ground-disturbing activity may begin. Compliance with all applicable state, federal, and local environmental, cultural, and paleontological resource protection laws and regulations is also required. These may include, but are not limited to, the Clean Water Act, Endangered Species Act, National Historic Preservation Act, consultation with potentially affected tribes, and consultation with the State Historic Preservation Officer.

The Authority will ensure that all relevant environmental and cultural resource compliance activities are completed prior to any ground-disturbing activities.

## 6. Project Schedule

A schedule and list of deliverables is presented below—for full details, see the attached schedule.

Task No.	Task	Deliverable	Estimated Start Date	Estimated Completion Date
01	Operations modeling	Full operations complete	11/23/20	03/30/21
01	Operations modeling	Operations plan, version 1	11/01/20	11/24/21
01	Operations modeling	Appendices for BA/ITP	03/01/22	07/01/22
02	Engineering	Preliminary hydraulics modeling	09/01/20	06/30/21
02	Engineering	Class IV estimate	09/01/20	06/30/21
02	Engineering	Technical feasibility	10/01/20	02/28/22
02	Engineering	Environmental feasibility	09/01/20	12/30/21
02	Engineering	Geotechnical permit planning	11/01/20	02/20/22
02	Engineering	Preliminary engineering	01/03/22	03/01/24
03	Geotechnical	Geotechnical work plans	11/01/20	08/30/21
03	Geotechnical	Field data collection	01/04/21	08/30/21

Task No.	Task	Deliverable	Estimated Start Date	Estimated Completion Date
03	Geotechnical	Data evaluation and reporting	01/04/21	10/30/21
04	Right-of-way	Right-of-entry	01/01/21	12/30/22

## 7. Budget

The budget table and narrative are provided as attachments to this document.

## 8. Pre-Award Incurrence of Costs

It is anticipated this project will receive a pre-award incurrence of cost beginning on January 1, 2021.

## 9. Cost Sharing Requirement

The cost sharing requirement is presented below.

Funding Source	Original Funding Amount (\$)	Amendment 1	Total Funding Amount (\$)
Non-federal entities	—	—	—
Participation partners funding	6,900,247	—	6,900,247
<b>Subtotal (non-federal)</b>	<b>6,900,247</b>	<b>—</b>	<b>6,900,247</b>
Requested Reclamation funding	6,900,000	—	6,900,000
<b>Total</b>	<b>\$13,800,247</b>	<b>—</b>	<b>\$13,800,247</b>

### **Required Forms**

- SF-424
- SF-424 A or B (Non-construction)
- SF-424 C or D (Construction)
- Budget Table
- Budget Narrative (with supporting documentation as indexed attachments)
- SF-LLL (Lobbying Form)
- Single Audit, or Independent Audit Statement – IAW 2 CFR 200 Subpart F Audit Requirements

**SITES PROJECT - FAA FY21-22**

Data Date: 01-Mar-2021  
Current Date: 07-Jan-2022

Activity ID	Activity Name	Original Duration	Start	Finish	2021												2022												2023					
					Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	D	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	Dec	Jan	F	Mar	Apr	M	Jun
<b>SITES PROJECT - FAA FY21-22</b>																																		
<b>OPERATIONS MODELING</b>																																		
<b>Operations Analysis for Revised Draft EIR/SDEIS</b>																																		
OP-0600	USRDOM	27	23-Nov-2020 A	24-Feb-2021 A																														
OP-0610	HEC-5Q & RecTemp	27	23-Nov-2020 A	12-Feb-2021 A																														
OP-0620	Fish Mortality (Anderson & Martin)	27	23-Nov-2020 A	26-Feb-2021 A																														
OP-0630	SALMOD	27	23-Nov-2020 A	19-Mar-2021																														
OP-0640	DSM2 (Hydro &Qual)	27	23-Nov-2020 A	12-Feb-2021 A																														
OP-0650	IOS &DPM (Cramer)	27	23-Nov-2020 A	26-Feb-2021 A																														
OP-0660	OBAN (QEDA)	27	23-Nov-2020 A	26-Feb-2021 A																														
OP-0665	CalSim II	27	23-Nov-2020 A	03-Feb-2021 A																														
OP-0670	Mercury (RBI)	33	23-Nov-2020 A	05-Mar-2021																														
OP-0680	Reservoir Water Quality	33	23-Nov-2020 A	19-Mar-2021																														
OP-0690	Regional Power (LTGen, SWP_Power, & Sites_Power)	33	23-Nov-2020 A	22-Feb-2021 A																														
OP-0695	Project-Specific Power	5	12-Jan-2021 A	10-Mar-2021																														
OP-446	Full Operations Analysis Complete	0		19-Mar-2021	◆ Full Operations Analysis Complete																													
OP-460	Climate Change Analysis	4	23-Nov-2020 A	18-Feb-2021 A																														
<b>Complete Operations Analysis</b>																																		
FO\$-1110	Participant-Specific Operations	230	01-Aug-2022	30-Jun-2023																														
OS\$-1160	Operations Modeling Updates	186	03-Oct-2022*	30-Jun-2023																														
TM\$-D117	WSIP Benefits Agreements	375	03-Jan-2022	30-Jun-2023																														
TM\$-D157	Refined Daily Operations Modeling	145	03-Jan-2022	29-Jul-2022																														
TM\$-D167	Refined Delta Water Quality Analyses	82	03-Jan-2022	29-Apr-2022																														
<b>BA/ITP Documentation</b>																																		
OP-360	Appendices for BA/ITP	87	01-Mar-2022	01-Jul-2022																														
OP-450	BA/ITP and Water Rights Modeling Support	327	01-Nov-2020 A	28-Feb-2022																														
OP-510	ESA Section 7 Support	498	03-Jan-2022	29-Dec-2023																														
OP-520	CESA ITP Support	498	03-Jan-2022	29-Dec-2023																														
<b>Operations Plan, Ver 1</b>																																		
OP-470	Operations Plan, Version 1 (\$)	225	01-Nov-2020 A	24-Nov-2021																														
OP-475	Support Development of Ops Plan Ver 1 Documentation	184	01-Mar-2021	19-Nov-2021																														
<b>Operations Support</b>																																		
OS-1120	Operations Support for Permitting	160	22-Nov-2021	01-Jul-2022																														
OS-1130	Operations Support for Water Rights	649	22-Nov-2021	16-May-2024																														
<b>FEASIBILITY LEVEL GEOTECH</b>																																		
<b>Geotechnical Permitting &amp; Planning</b>																																		
GSR-010	Work Plans for Design Level Geologic and Geotechnical Eng Investigations	63	04-Sep-2020 A	23-Aug-2021																														
<b>Field Investigations</b>																																		
GSR-020	Field Data Collection Work Plan and Cost Estimate	161	04-Jan-2021 A	23-Aug-2021																														
<b>Data Evaluation and Reporting</b>																																		
GSR-030	Data Evaluation and Prepare Geotechnical Data Reports	159	04-Jan-2021 A	16-Sep-2021																														
GSR-040	Data Gap Assessment and Preliminary Planning for Design Level Inv for Preferred Alt	233	04-Jan-2021 A	27-Oct-2021																														
<b>FEASIBILITY ENGINEERING</b>																																		
<b>Preliminary Hydraulics Modeling</b>																																		
ENG-466	Emergency Release Flood Modeling	217	01-Sep-2020 A	16-Jul-2021																														

Actual Work   
 Critical Remaining Work  
 Remaining Work   
 Milestone

**SITES PROJECT - FAA FY21-22**

Data Date: 01-Mar-2021  
Current Date: 07-Jan-2022

Activity ID	Activity Name	Original Duration	Start	Finish	2021												2022												2023					
					Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	D	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	Dec	Jan	F	Mar	Apr	M	Jun
ENG-490	Glenn Colusa Irrigation District Main Canal Modeling	116	03-Jan-2022	17-Jun-2022													██████████																	
ENG-600	Colusa Basin Drain Modeling	116	03-Jan-2022	17-Jun-2022													██████████																	
<b>DSOD Engagement</b>					387												01-Sep-2020 A												02-Apr-2027					
ENG-400	Develop DSOD Engagement Plan	327	01-Sep-2020 A	27-Dec-2021	██████████																													
ENG-440	DSOD Engagement	309	01-Sep-2020 A	02-Apr-2027																														
<b>Class IV Cost Estimate</b>					197												08-Sep-2020 A												23-Jun-2021					
ENG-265	Develop Class 4 Cost Estimate	197	08-Sep-2020 A	23-Jun-2021	██████████																													
<b>Engineering - Technical Feasibility</b>					520												01-Oct-2020 A												16-Feb-2022					
ENG-300	Project Benefits	140	01-Oct-2020 A	27-Apr-2021	██████████																													
ENG-320	Cost Allocation	144	01-Oct-2020 A	03-May-2021	██████████																													
ENG-350	Prepare Economic Feasibility	250	01-Oct-2020 A	01-Oct-2021	██████████																													
ENG-360	Prepare Financial Feasibility	250	01-Oct-2020 A	01-Oct-2021	██████████																													
ENG-370	Constructability	124	30-Oct-2020 A	03-May-2021	██████████																													
ENG-410	Develop Program Design/Construction/Permit Implementation Plan	341	01-Oct-2020 A	16-Feb-2022	██████████												██████████																	
<b>Environmental Feasibility Support (Proj Des/Feasibility Design)</b>					333												01-Sep-2020 A												30-Dec-2021					
ENG-230	Provide Engineering Support to Environmental and Permitting Team	310	30-Sep-2020 A	30-Dec-2021	██████████																													
ENG-233	Engineering Support for Project Description for Alternative 1	246	01-Sep-2020 A	26-Aug-2021	██████████																													
ENG-236	Engineering Support for Project Description for Alternative 2	246	01-Sep-2020 A	26-Aug-2021	██████████																													
ENG-340	Obtain the Finding of Env Feasibility with Mitigation	243	10-Oct-2020 A	01-Oct-2021	██████████																													
<b>Geotechnical Permit Planning &amp; Invest Plan</b>					318												30-Oct-2020 A												16-Feb-2022					
ENG-404	Coordinate Geotechnical Investigation Plan	247	30-Oct-2020 A	27-Oct-2021	██████████																													
ENG-406	Coordinate to Develop Geotechnical Permitting Plan	210	15-Apr-2021	16-Feb-2022													██████████																	
<b>PRELIMINARY AND FINAL ENGINEERING</b>					540												03-Jan-2022												01-Mar-2024					
<b>Project Delivery Method (assumes mixed contracting)</b>					120												03-Jan-2022												17-Jun-2022					
DB-100	Design Packages and Project Delivery Method Determinations (Assumes Mixed Contra	120	03-Jan-2022	17-Jun-2022													██████████																	
<b>Preliminary Engineering</b>					540												03-Jan-2022												01-Mar-2024					
PD-105	Topographic Survey & Mapping	126	03-Jan-2022	01-Jul-2022													██████████																	
PD-130	Engineering Assistance for Final EIR/EIS	125	03-Jan-2022	30-Jun-2022													██████████																	
PD-140	30% Preliminary Design	414	05-Jul-2022	01-Mar-2024																									██████████					
<b>RIGHT OF WAY (ROW)</b>					1264												31-Aug-2020 A												30-Dec-2022					
RE-210	Real Estate Landowner Coordination	330	31-Aug-2020 A	30-Dec-2021	██████████																													
RE-215	Real Estate Landowner Coordination/Right of Entry	249	03-Jan-2022	30-Dec-2022													██████████																	

Actual Work
  Critical Remaining Work  
 Remaining Work
  Milestone

**SITES RESERVOIR**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Contractual Services</b>					
HDR	\$ -			\$ 1,383,160	\$ 1,383,160
CH2M Hill Engineers	\$ -			\$ 8,968,490	\$ 8,968,490
AECOM	\$ -			\$ 1,394,307	\$ 1,394,307
Fugro	\$ -			\$ 2,054,290	\$ 2,054,290
<b>TOTAL DIRECT COSTS</b>				<b>\$ 13,800,247</b>	<b>\$ 13,800,247</b>
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$ 13,800,247</b>	<b>\$ 13,800,247</b>



**HDR Summary**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Project Manager	\$ 394.20	36		\$ 14,191	\$ 14,191
Sr Advisor	\$ 324.99	100		\$ 32,499	\$ 32,499
Engineering Lead	\$ 248.73	1,420		\$ 353,197	\$ 353,197
Operations Lead	\$ 201.66	669		\$ 134,911	\$ 134,911
Jr Engineer	\$ 110.01	30		\$ 3,300	\$ 3,300
Real Estate Lead	\$ 175.02	3,818		\$ 668,226	\$ 668,226
Real Estate Staff	\$ 100.02	1,768		\$ 176,835	\$ 176,835
<b>TOTAL DIRECT COSTS</b>				<b>\$ 1,383,160</b>	<b>\$ 1,383,160</b>

**Task 1 - Operations Modeling (HDR)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Project Manager	\$ 394.20			\$ -	\$ -
Sr Advisor	\$ 324.99			\$ -	\$ -
Engineering Lead	\$ 248.73			\$ -	\$ -
Operations Lead	\$ 201.66	669		\$ 134,911	\$ 134,911
Jr Engineer	\$ 110.01	30		\$ 3,300	\$ 3,300
Real Estate Lead	\$ 175.02			\$ -	\$ -
Real Estate Staff	\$ 100.02			\$ -	\$ -
<b>TOTAL DIRECT COSTS</b>				<b>\$ 138,211</b>	<b>\$ 138,211</b>

**Task 2 - Engineering (HDR)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Project Manager	\$ 394.20	36		\$ 14,191	\$ 14,191
Sr Advisor	\$ 324.99	100		\$ 32,499	\$ 32,499
Engineering Lead	\$ 248.73	1420		\$ 353,197	\$ 353,197
Operations Lead	\$ 201.66			\$ -	\$ -
Jr Engineer	\$ 110.01			\$ -	\$ -
Real Estate Lead	\$ 175.02			\$ -	\$ -
Real Estate Staff	\$ 100.02			\$ -	\$ -
<b>TOTAL DIRECT COSTS</b>				<b>\$ 399,887</b>	<b>\$ 399,887</b>

**Task 5 - Real Estate Landowner**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Project Manager	\$ 394.20	-		\$ -	\$ -
Sr Advisor	\$ 324.99	-		\$ -	\$ -
Engineering Lead	\$ 248.73	-		\$ -	\$ -
Operations Lead	\$ 201.66	-		\$ -	\$ -
Jr Engineer	\$ 110.01	-		\$ -	\$ -
Real Estate Lead	\$ 175.02	3,818		\$ 668,226	\$ 668,226
Real Estate Staff	\$ 100.02	1,768		\$ 176,836	\$ 176,836
<b>TOTAL DIRECT COSTS</b>				<b>\$ 845,062</b>	<b>\$ 845,062</b>

**Task 1 - Operations Modeling (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Engineering - Hydrodynamic Modeling	\$ 165.38	2,400		\$ 396,912	\$ 396,912
Engineering - Systems Modeling	\$ 293.01	920		\$ 269,569	\$ 269,569
Engineering - Systems Modeling	\$ 151.11	1,481		\$ 223,794	\$ 223,794
Engineering - Systems Modeling	\$ 131.83	1,620		\$ 213,565	\$ 213,565
Engineering - Hydrodynamic and Water Quality	\$ 274.07	64		\$ 17,540	\$ 17,540
Environmental Resources	\$ 246.91	240		\$ 59,258	\$ 59,258
Engineering - General Assistance	\$ 364.83	80		\$ 29,186	\$ 29,186
Engineering - Intakes and Fish Screens	\$ 373.18	80		\$ 29,854	\$ 29,854
Engineering - Systems Modeling QA	\$ 263.84	704		\$ 185,743	\$ 185,743
Engineering - Systems Modeling	\$ 122.60	1,020		\$ 125,052	\$ 125,052
Engineering - Systems Modeling	\$ 119.43	1,520		\$ 181,534	\$ 181,534
Engineering - Systems Modeling	\$ 138.30	1,520		\$ 210,216	\$ 210,216
Engineering - Systems Modeling	\$ 106.31	1,640		\$ 174,348	\$ 174,348

**Task 1 - Operations Modeling (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Engineering - Systems Modeling	\$ 130.84	1,240		\$ 162,242	\$ 162,242
Scientist	\$ 242.00	1,000		\$ 242,000	\$ 242,000
Scientist	\$ 195.00	1,100		\$ 214,500	\$ 214,500
Scientist	\$ 183.00	1,100		\$ 201,300	\$ 201,300
Engineering - Groundwater Modeling	\$ 128.97	575		\$ 74,158	\$ 74,158
Engineering - Hydrodynamic and Water Quality	\$ 139.24	240		\$ 33,418	\$ 33,418
Engineering - Systems Modeling	\$ 261.50	1,200		\$ 313,800	\$ 313,800
Engineering - Groundwater Modeling	\$ 262.59	80		\$ 21,007	\$ 21,007
Engineering - Groundwater Modeling	\$ 299.74	80		\$ 23,979	\$ 23,979
Project Controls	\$ 181.19			\$ -	\$ -
<b>TOTAL DIRECT COSTS</b>				<b>\$ 3,402,976</b>	<b>\$ 3,402,976</b>

**Task 2 - Engineering (AECOM)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Senior Project Manager	\$ 368.99	68		\$ 25,091	\$ 25,091
Contract Manager	\$ 283.46	673		\$ 190,769	\$ 190,769
TO Manager	\$ 257.74	865		\$ 222,945	\$ 222,945
Principal Bridge	\$ 353.19	450		\$ 158,936	\$ 158,936
Bridge Engineer	\$ 184.70	690		\$ 127,443	\$ 127,443
Principal Roads	\$ 335.32	450		\$ 150,894	\$ 150,894
Roadway Support	\$ 302.52			\$ -	\$ -
Roadway Team Lead	\$ 235.95			\$ -	\$ -
Roadway Team Lead	\$ 204.90	80		\$ 16,392	\$ 16,392
Roadway Task Leader	\$ 176.12	380		\$ 66,926	\$ 66,926
Principal Civil	\$ 273.63	300		\$ 82,089	\$ 82,089
Principal Civil	\$ 217.50			\$ -	\$ -
Senior Civil	\$ 146.05	150		\$ 21,908	\$ 21,908

**Task 2 - Engineering (AECOM)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Mid Civil	\$ 149.35	137		\$ 20,461	\$ 20,461
Mid Civil	\$ 136.83	375		\$ 51,311	\$ 51,311
Principal Estimator	\$ 303.44			\$ -	\$ -
Cost Estimating	\$ 174.41			\$ -	\$ -
Geotechnical	\$ 299.46			\$ -	\$ -
Principal Geotechnical Engineer	\$ 241.09			\$ -	\$ -
Principal Geotechnical Engineer	\$ 251.13			\$ -	\$ -
Tunnel Lead	\$ 279.10			\$ -	\$ -
Tunnel	\$ 152.82	50		\$ 7,641	\$ 7,641
Senior Electrical	\$ 268.25			\$ -	\$ -
Civil/Hydraulics Technical Reviewer	\$ 263.40			\$ -	\$ -
Construction Materials Reviewer	\$ 250.31			\$ -	\$ -
Geology Reviewer	\$ 242.61	50		\$ 12,131	\$ 12,131



**Task 2 - Engineering (AECOM)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
I/O Structure and Spillway Hydraulics	\$ 217.26			\$ -	\$ -
Instrumentation Engineer	\$ 212.00			\$ -	\$ -
Senior Engineer	\$ 190.86	50		\$ 9,543	\$ 9,543
Mid Engineer	\$ 153.81	370		\$ 56,910	\$ 56,910
Junior Engineer	\$ 105.00	90		\$ 9,450	\$ 9,450
Senior CAD	\$ 212.62	85		\$ 18,073	\$ 18,073
CAD Lead	\$ 199.45			\$ -	\$ -
CAD Lead / Support Engineer	\$ 146.09	550		\$ 80,350	\$ 80,350
CAD Lead	\$ 113.29	102		\$ 11,556	\$ 11,556
CAD Support	\$ 114.39	130		\$ 14,871	\$ 14,871
GIS Lead	\$ 137.65	44		\$ 6,057	\$ 6,057
QA Manager	\$ 191.76	60		\$ 11,506	\$ 11,506
Project Controls	\$ 125.58	123		\$ 15,446	\$ 15,446

**Task 2 - Engineering (AECOM)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Document Control/Tech Editor	\$ 112.24	50		\$ 5,612	\$ 5,612
Title/Employee	\$ -			\$ -	\$ -
Title/Employee	\$ -			\$ -	\$ -
<b>TOTAL DIRECT COSTS</b>				<b>\$ 1,394,307</b>	<b>\$ 1,394,307</b>

**Task 2 - Engineering (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Principal	\$ 360.74	32		\$ 11,544	\$ 11,544
Project Manager	\$ 373.18	1,224		\$ 456,772	\$ 456,772
Environmental Planner	\$ 94.28	144		\$ 13,576	\$ 13,576
Tunnel Lead & QC	\$ 173.02	532		\$ 92,047	\$ 92,047
Junior Engineer	\$ 89.35	519		\$ 46,373	\$ 46,373
Technician	\$ 95.13	465		\$ 44,235	\$ 44,235
Environmental Lead	\$ 211.65	96		\$ 20,318	\$ 20,318
Junior Engineer	\$ 114.70	146		\$ 16,746	\$ 16,746
Lead Technician	\$ 184.94	1,176		\$ 217,489	\$ 217,489
Site Civil - Roads	\$ 144.11	630		\$ 90,789	\$ 90,789
Electrical	\$ 217.30	498		\$ 108,215	\$ 108,215
Administrative Assistant	\$ 76.16	68		\$ 5,179	\$ 5,179
GIS Lead	\$ 152.44	270		\$ 41,159	\$ 41,159

**Task 2 - Engineering (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Sr. QC Reviewer	\$ 261.68	44		\$ 11,514	\$ 11,514
Surveying and Mapping Lead	\$ 330.52	240		\$ 79,325	\$ 79,325
Reservoir Design	\$ 259.32	456		\$ 118,250	\$ 118,250
QC Manager	\$ 223.35	196		\$ 43,777	\$ 43,777
Project Controls	\$ 156.73	374		\$ 58,617	\$ 58,617
Word Processing	\$ 123.07	80		\$ 9,846	\$ 9,846
Hydro Turbine Design Engineer	\$ 222.57	362		\$ 80,570	\$ 80,570
SCADA Lead	\$ 274.30	144		\$ 39,499	\$ 39,499
Fisheries & Hydraulics Engineer	\$ 280.80	210		\$ 58,968	\$ 58,968
Site Civil/Roads/Traffic	\$ 172.17	344		\$ 59,226	\$ 59,226
Structural	\$ 233.58	854		\$ 199,477	\$ 199,477
Pipeline Design	\$ 160.60	326		\$ 52,356	\$ 52,356
Reservoir Design	\$ 271.45	320		\$ 86,864	\$ 86,864

**Task 2 - Engineering (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Engineering - General Assistance	\$ 232.73	42		\$ 9,775	\$ 9,775
Technician	\$ 102.96	561		\$ 57,761	\$ 57,761
Mechanical/QC	\$ 294.81	58		\$ 17,099	\$ 17,099
Specifications	\$ 220.04	42		\$ 9,242	\$ 9,242
Structural-Pipelines/QC	\$ 211.13	172		\$ 36,314	\$ 36,314
Pump/Generating Plant Lead	\$ 217.80	252		\$ 54,886	\$ 54,886
Technical Editor	\$ 120.39	64		\$ 7,705	\$ 7,705
Hydropower/QC	\$ 359.66	106		\$ 38,124	\$ 38,124
Hydraulic Modeler	\$ 122.32	414		\$ 50,640	\$ 50,640
Hydraulic Modeler	\$ 174.30	834		\$ 145,366	\$ 145,366
Flood Hydraulic Modeler	\$ 241.96	300		\$ 72,588	\$ 72,588
Conveyance Lead	\$ 364.83	526		\$ 191,901	\$ 191,901
Conveyance Technician	\$ 154.35	518		\$ 79,953	\$ 79,953

**Task 2 - Engineering (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Technician	\$ 132.41	374		\$ 49,521	\$ 49,521
Geotechnical Lead	\$ 206.25	1,036		\$ 213,675	\$ 213,675
Mechanical Engineer	\$ 119.56	354		\$ 42,324	\$ 42,324
Cost Estimator	\$ 235.68	282		\$ 66,462	\$ 66,462
Cost Estimator	\$ 159.40	623		\$ 99,306	\$ 99,306
Air Quality Specialist	\$ 205.39	144		\$ 29,576	\$ 29,576
Geosyntec	\$ 210.55	1,751		\$ 368,673	\$ 368,673
Geosyntec	\$ 210.55	1,649		\$ 347,197	\$ 347,197
Geosyntec	\$ 210.55	1,556		\$ 327,616	\$ 327,616
Vanderweil	\$ 157.63	1,579		\$ 248,898	\$ 248,898
Vanderweil	\$ 157.63	1,465		\$ 230,928	\$ 230,928
Vanderweil	\$ 157.63	1,397		\$ 220,209	\$ 220,209
Vanderweil	\$ 157.63	1,310		\$ 206,495	\$ 206,495

**Task 2 - Engineering (CH2)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
H2O EcoPower	\$ 218.92	40		\$ 8,757	\$ 8,757
REY Engineering	\$ 190.33	1,428		\$ 271,791	\$ 271,791
Title/Employee				\$ -	\$ -
Title/Employee	\$ -			\$ -	\$ -
<b>TOTAL DIRECT COSTS</b>				<b>\$ 5,565,514</b>	<b>\$ 5,565,514</b>

**Task3 - Geotechnical (Fugro)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
<b>Salaries and Wages</b>					
Principal in Charge	\$ 402.00	24		\$ 9,648	\$ 9,648
Project Manager	\$ 295.00	1054		\$ 310,930	\$ 310,930
Principal Geologist	\$ 230.00	957		\$ 220,110	\$ 220,110
Principal Geologist	\$ 395.00	36		\$ 14,220	\$ 14,220
Principal Geologist	\$ 257.00	696		\$ 178,872	\$ 178,872
Principal Engineer	\$ 310.00	87		\$ 26,970	\$ 26,970
Principal Engineer	\$ 264.00	48		\$ 12,672	\$ 12,672
Manager Land Geophysics	\$ 253.00	489		\$ 123,717	\$ 123,717
Sr Geophysicist	\$ 214.00	1746		\$ 373,644	\$ 373,644
Assoc. Geologist	\$ 200.00	10		\$ 2,000	\$ 2,000
Sr Project Admin	\$ 168.00	200		\$ 33,600	\$ 33,600
Sr Project Engineer	\$ 162.00	1514		\$ 245,268	\$ 245,268
Sr Staff Engineer	\$ 143.00	1571		\$ 224,653	\$ 224,653



**Task3 - Geotechnical (Fugro)**

Original

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	ORI TOTAL COST	TOTAL COST
	\$/Unit	Quantity			
Sr Staff Engineer	\$ 137.00	136		\$ 18,632	\$ 18,632
Project Geologist	\$ 129.00	798		\$ 102,942	\$ 102,942
Sr Staff Engineer	\$ 118.00	250		\$ 29,500	\$ 29,500
GIS Manager	\$ 154.00	648		\$ 99,792	\$ 99,792
GIS Geologist	\$ 118.00	120		\$ 14,160	\$ 14,160
Sr Admin Assistant	\$ 120.00	108		\$ 12,960	\$ 12,960
<b>TOTAL DIRECT COSTS</b>				<b>\$ 2,054,290</b>	<b>\$ 2,054,290</b>

**Blended Rate for 2021 and 2022**

**HDR**

OH Rate

172.73%

<b>Category</b>	<b>Raw Rate</b>	<b>OH</b>	<b>Fee</b>	<b>Fully Burdened Rate</b>
Project Manager	131.40	172.73%	10%	394.20
Sr Advisor	108.33	172.73%	10%	324.99
Engineering Lead	82.91	172.73%	10%	248.73
Operations Lead	67.22	172.73%	10%	201.66
Jr Engineer	36.67	172.73%	10%	110.01
Real Estate Lead	58.34	172.73%	10%	175.02
Real Estate Staff	33.34	172.73%	10%	100.02

AECOM

OH Rate

136.85%

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Senior Project Manager	141.63	136.85%	10%	368.99
Contract Manager	108.80	136.85%	10%	283.46
TO Manager	98.93	136.85%	10%	257.74
Principal Bridge	135.56	136.85%	10%	353.19
Bridge Engineer	70.89	136.85%	10%	184.70
Principal Roads	128.70	136.85%	10%	335.32
Roadway Support	116.11	136.85%	10%	302.52
Roadway Team Lead	90.56	136.85%	10%	235.95
Roadway Team Lead	78.65	136.85%	10%	204.90
Roadway Task Leader	67.60	136.85%	10%	176.12
Principal Civil	105.03	136.85%	10%	273.63
Principal Civil	83.48	136.85%	10%	217.50
Senior Civil	56.06	136.85%	10%	146.05
Mid Civil	57.32	136.85%	10%	149.35
Mid Civil	52.52	136.85%	10%	136.83
Principal Estimator	116.47	136.85%	10%	303.44
Cost Estimating	66.94	136.85%	10%	174.41
Geotechnical	114.94	136.85%	10%	299.46
Principal Geotechnical Engineer	92.54	136.85%	10%	241.09
Principal Geotechnical Engineer	96.39	136.85%	10%	251.13
Tunnel Lead	107.13	136.85%	10%	279.10
Tunnel	58.66	136.85%	10%	152.82
Senior Electrical	102.96	136.85%	10%	268.25
Civil/Hydraulics Technical Reviewer	101.10	136.85%	10%	263.40
Construction Materials Reviewer	96.08	136.85%	10%	250.31
Geology Reviewer	93.12	136.85%	10%	242.61
I/O Structure and Spillway Hydraulics	83.39	136.85%	10%	217.26
Instrumentation Engineer	81.37	136.85%	10%	212.00
Senior Engineer	73.26	136.85%	10%	190.86
Mid Engineer	59.04	136.85%	10%	153.81
Junior Engineer	40.30	136.85%	10%	105.00
Senior CAD	81.61	136.85%	10%	212.62
CAD Lead	76.55	136.85%	10%	199.45
CAD Lead / Support Engineer	56.07	136.85%	10%	146.09
CAD Lead	43.48	136.85%	10%	113.29
CAD Support	43.91	136.85%	10%	114.39
GIS Lead	52.83	136.85%	10%	137.65
QA Manager	73.60	136.85%	10%	191.76
Project Controls	48.20	136.85%	10%	125.58
Document Control/Tech Editor	43.08	136.85%	10%	112.24

CH2M

OH Rate 157.70%

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Principal	127.26	157.70%	10%	360.74
Project Manager	131.65	157.70%	10%	373.18
Environmental Planner	33.26	157.70%	10%	94.28
Tunnel Lead & QC	61.04	157.70%	10%	173.02
Junior Engineer	31.52	157.70%	10%	89.35
Technician	33.56	157.70%	10%	95.13
Environmental Lead	74.66	157.70%	10%	211.65
Junior Engineer	40.46	157.70%	10%	114.70
Lead Technician	65.24	157.70%	10%	184.94
Site Civil - Roads	50.84	157.70%	10%	144.11
Electrical	76.66	157.70%	10%	217.30
Administrative Assistant	26.87	157.70%	10%	76.16
GIS Lead	53.78	157.70%	10%	152.44
Sr. QC Reviewer	92.31	157.70%	10%	261.68
Surveying and Mapping Lead	116.60	157.70%	10%	330.52
Reservoir Design	91.48	157.70%	10%	259.32
QC Manager	78.79	157.70%	10%	223.35
Project Controls	55.29	157.70%	10%	156.73
Word Processing	43.42	157.70%	10%	123.07
Hydro Turbine Design Engineer	78.52	157.70%	10%	222.57
SCADA Lead	96.77	157.70%	10%	274.30
Fisheries & Hydraulics Engineer	99.06	157.70%	10%	280.80
Site Civil/Roads/Traffic	60.74	157.70%	10%	172.17
Structural	82.40	157.70%	10%	233.58
Pipeline Design	56.66	157.70%	10%	160.60
Reservoir Design	95.76	157.70%	10%	271.45
Engineering - General Assistance	82.10	157.70%	10%	232.73
Technician	36.32	157.70%	10%	102.96
Mechanical/QC	104.00	157.70%	10%	294.81
Specifications	77.62	157.70%	10%	220.04
Structural-Pipelines/QC	74.48	157.70%	10%	211.13
Pump/Generating Plant Lead	76.83	157.70%	10%	217.80
Technical Editor	42.47	157.70%	10%	120.39
Hydropower/QC	126.88	157.70%	10%	359.66
Hydraulic Modeler	43.15	157.70%	10%	122.32
Hydraulic Modeler	61.49	157.70%	10%	174.30
Flood Hydraulic Modeler	85.36	157.70%	10%	241.96
Conveyance Lead	128.70	157.70%	10%	364.83
Conveyance Technician	54.45	157.70%	10%	154.35
Technician	46.71	157.70%	10%	132.41
Geotechnical Lead	72.76	157.70%	10%	206.25

Mechanical Engineer	42.18	157.70%	10%	119.56
Cost Estimator	83.14	157.70%	10%	235.68
Cost Estimator	56.23	157.70%	10%	159.40
Air Quality Specialist	72.46	157.70%	10%	205.39
Engineering - Hydrodynamic Modeling	58.34	157.70%	10%	165.38
Engineering - Systems Modeling	103.37	157.70%	10%	293.01
Engineering - Systems Modeling	53.31	157.70%	10%	151.11
Engineering - Systems Modeling	46.51	157.70%	10%	131.83
Engineering - Hydrodynamic and Water Quality	96.68	157.70%	10%	274.07
Environmental Resources	87.10	157.70%	10%	246.91
Engineering - General Assistance	128.70	157.70%	10%	364.83
Engineering - Intakes and Fish Screens	131.65	157.70%	10%	373.18
Engineering - Systems Modeling QA	93.08	157.70%	10%	263.84
Engineering - Systems Modeling	43.25	157.70%	10%	122.60
Engineering - Systems Modeling	42.13	157.70%	10%	119.43
Engineering - Systems Modeling	48.79	157.70%	10%	138.30
Engineering - Systems Modeling	37.50	157.70%	10%	106.31
Engineering - Systems Modeling	46.16	157.70%	10%	130.84
Scientist	85.37	157.70%	10%	242.00
Scientist	68.79	157.70%	10%	195.00
Scientist	64.56	157.70%	10%	183.00
Engineering - Groundwater Modeling	45.50	157.70%	10%	128.97
Engineering - Hydrodynamic and Water Quality	49.12	157.70%	10%	139.24
Engineering - Systems Modeling	92.25	157.70%	10%	261.50
Engineering - Groundwater Modeling	92.63	157.70%	10%	262.59
Engineering - Groundwater Modeling	105.74	157.70%	10%	299.74
Project Controls	63.92	157.70%	10%	181.19

Fugro

OH Rate 240.52%

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Principal in Charge	107.32	240.52%	10%	402.00
Project Manager	78.76	240.52%	10%	295.00
Principal Geologist	61.40	240.52%	10%	230.00
Principal Geologist	105.45	240.52%	10%	395.00
Principal Geologist	68.61	240.52%	10%	257.00
Principal Engineer	82.76	240.52%	10%	310.00
Principal Engineer	70.48	240.52%	10%	264.00
Manager Land Geophysics	67.54	240.52%	10%	253.00
Sr Geophysicist	57.13	240.52%	10%	214.00
Assoc. Geologist	53.39	240.52%	10%	200.00
Sr Project Admin	44.85	240.52%	10%	168.00
Sr Project Engineer	43.25	240.52%	10%	162.00
Sr Staff Engineer	38.18	240.52%	10%	143.00
Sr Staff Engineer	36.58	240.52%	10%	137.00
Project Geologist	34.44	240.52%	10%	129.00
Sr Staff Engineer	31.50	240.52%	10%	118.00
GIS Manager	41.11	240.52%	10%	154.00
GIS Geologist	31.50	240.52%	10%	118.00
Sr Admin Assistant	32.04	240.52%	10%	120.00

## Sites Reservoir Program

### 1. Budget Proposal

The following is the estimated budget for this Agreement. The budget contains only labor costs for Contractual Services.

SITES RESERVOIR BUDGET ITEM DESCRIPTION	Original		Quantity Type	ORI TOTAL COST	TOTAL COST
	COMPUTATION				
	S/Unit	Quantity			
<b>Contractual Services</b>					
HDR	\$ -			\$ 1,383,160	\$ 1,383,160
CH2M Hill Engineers	\$ -			\$ 8,968,490	\$ 8,968,490
AECOM	\$ -			\$ 1,394,307	\$ 1,394,307
Fugro	\$ -			\$ 2,054,290	\$ 2,054,290
<b>TOTAL DIRECT COSTS</b>				<b>\$ 13,800,247</b>	<b>\$ 13,800,247</b>
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$ 13,800,247</b>	<b>\$ 13,800,247</b>

### 2. Budget Narrative

The Sites Reservoir is proposed to be an off-stream reservoir that will be filled by pumping water from the Sacramento River, which also includes new facilities to integrate with both the existing Tehama-Colusa Canal and the Glenn-Colusa Irrigation District Main Canal. The \$6.9 million WIIN Act funding will allow the project to continue the Modeling efforts, Engineering efforts to support a preliminary design and the supporting Geotechnical work and Real Estate efforts to gain entry to landowners. The scope of this project will be complete by the first quarter of 2023.

The project will consist of four major tasks, Ops Modeling, Engineering, Geotechnical and Real Estate. Below is a summary of the costs by Task and Firm.

#### Budgeted Cost by Firm

Firm	Estimate
<b>AECOM</b>	<b>\$1,394,307</b>
Task 2 - Engineering	\$1,394,307
<b>Ch2M</b>	<b>\$8,968,490</b>
Task 1 - Ops Modeling	\$3,402,976
Task 2 - Engineering	\$5,565,514
<b>Fugro</b>	<b>\$2,054,290</b>
Task 3 - Geotechnical	\$2,054,290
<b>HDR</b>	<b>\$1,383,159</b>
Task 1 - Ops Modeling	\$138,211
Task 2 - Engineering	\$399,887
Task 4 - Real Estate	\$845,062
<b>Grand Total</b>	<b>\$13,800,247</b>

## Sites Reservoir Program

### Budgeted Cost by Task

Row Labels	Estimate
<b>Task 1 - Ops Modeling</b>	<b>\$3,541,187</b>
Ch2M	\$3,402,976
HDR	\$138,211
<b>Task 2 - Engineering</b>	<b>\$7,359,708</b>
AECOM	\$1,394,307
Ch2M	\$5,565,514
HDR	\$399,887
<b>Task 3 - Geotechnical</b>	<b>\$2,054,290</b>
Fugro	\$2,054,290
<b>Task 4 - Real Estate</b>	<b>\$845,062</b>
HDR	\$845,062
<b>Grand Total</b>	<b>\$13,800,247</b>

### Background

- In September 2018, the Sites Project Authority issued a Request for Qualifications for Project Development Support Services, RFQ No. 18-04 at that time the Authority did not have a standard operating procedure for their procurement process but did follow a consistent process as outlined in *Attachment A1* and the current policy in *Attachment A2*. The Authority now has an approved Procurement and Contract Policy. A copy of this RFQ is in *Attachment B*.
- In June 2019, the Sites Project Authority issued a Request for Qualifications Engineering Services, RFQ No. 19-03, a copy of the RFQ is in *Attachment C*.

### Work Plan Process

- The attached Authority Board Work Plan Amendment 2 and Amendment 3 *Attachment D1 and D2*, contains the Staff Report and Work Plan narrative outlining the scope, schedule and estimates by Subject Area and Deliverable. These estimated fees were prepared by the Service Area providers and have been reviewed and negotiated by the Authority's Agents, reviewed by its Budget & Finance group, Reservoir Committee and finally approved by the Authority Board. This is the basis of costs that is being utilized for this project

### Contractor – HDR Integration (Tasks 1, 2 and 4) - \$1,383,159

- HDR will provide overall program/project integration and management of all project services. They will provide senior-level professionals to aid the Authority in oversight, technical review, and experience to continue the Ops Modeling, Engineering and provide Real Estate support. HDR will work with CH2M, the Operations Modeling Service Area consultant, with the continued development of the modeling to support the EIR/EIS and Engineering. HDR will also work with CH2M and AECOM on the continue support of engineering and preliminary design. They will work closely with the Authority's Agent to manage these tasks and work as an extension of the Authority's Agent when required.
- The Sites Reservoir Authority required augmented technical services because they have no employees. All technical work is contracted out to Service Area Consultants.



## Sites Reservoir Program

- Costs for this budget utilized negotiated rates based on approved federal overhead rates and actual employee direct costs plus a 10% fee. The scope of work was defined by the Sites Authority and technical consultants utilizing best approaches. Initial cost estimates were done by Sites Authority staff before scopes were given to consultants to provide budget estimates as described above.
- The Sites Project Authority issued a Request for Qualifications for Project Development Support Services, RFQ No. 18-04 on September 5, 2018.
  - The Authority was seeking the services of highly qualified firms to provide project development support services for new and augmented technical areas for the implementation of the preparation for the final project approval and construction of the multi-billion-dollar water infrastructure project.
  - For the Project Integration contract 3 SOQs were received. The SOQs were reviewed by an Authority Selection Panel (comprised of Reservoir Committee and Authority Board members), interviews were then held with the selected firms by the Panel. The Selection Panel recommended a firm based on qualifications based on a detailed selection criteria specific to each service area. The criteria for selection is in the attached Sites Authority – RFQ Project Development under Section 5.0 Evaluation Criteria, Process and Negotiations starting on page 27. The Scope of Services is under Section 6.0 starting on page 30, with A.2.01 outlining the scope for the Integration leads. Further definition of the scope is described in the Approved Authority Board Work Plan Amend 2 under Section 7.0 Work Plan Outcomes by Subject Area on page 8. A large component of the HDR hours is for senior level staff where their responsibilities are to assist and coordinate with the Authority’s Agent and provide senior level oversight with the assistance of some mid-level staff.
  - HDR was selected by the Sites Authority and approved by the Authority Board to provide Integration support in November 2018, with a consulting agreement approved in January 2019. **Attachment E**
  - This scope of work is included in the Authority’s Approved Work Plans. The Amendment 2 Work Plan and Task Order was approved on August 25, 2020 and the Amendment 3 Work Plan was approved on November 22, 2021.
  - With the Award of the Contract, HDR supplied a rate table with each staff listed by name and title with their raw salary rate, the HDR Federally Approved Overhead rate, and a 10% fee. No mark ups were allowed for subcontractors or expenses. The rate table for this project is below.

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Project Manager	131.40	172.73%	10%	394.20
Sr Advisor	108.33	172.73%	10%	324.99
Engineering Lead	82.91	172.73%	10%	248.73
Operations Lead	67.22	172.73%	10%	201.66
Jr Engineer	36.67	172.73%	10%	110.01
Real Estate Lead	58.34	172.73%	10%	175.02
Real Estate Staff	33.34	172.73%	10%	100.02

## ***Sites Reservoir Program***

### **Contractor – CH2M Hill Engineers, Inc. (Task 1 and 2) - \$8,968,490**

- CH2M will provide Operations Simulation Modeling to support preparation of permitting applications and the EIR/EIS and Engineering – Conveyance services to complete feasibility level designs with a level of detail to support the development of a Class IV cost estimate.
- The Sites Reservoir Authority required augmented technical services because they have no employees. All technical work is contracted out to Service Area Consultants.
- Costs for this budget utilized negotiated rates based on approved federal overhead rates and actual employee direct costs. The scope of work was defined by the Sites Authority and technical consultants utilizing best approaches. Initial cost estimates were done by Sites Authority staff before scopes were given to consultants to provide budget estimates. CH2M based their estimates on previous work completed on similar type large projects. These estimates were then reviewed and negotiated with the Authority's Agent before being reviewed by the Sites Budget and Finance Committee, Reservoir Committee and then approved by the Authority Board. The Attached Task Order
- The Sites Project Authority issued a Request for Qualifications for Project Development Support Services, RFQ No. 18-04 on August 20, 2018 for the Operations Modeling and on June 20, 2019 released of the Engineering Services RFQ-19-03.
  - The Authority was seeking the services of highly qualified firms to provide project development support services for new and augmented technical areas for the implementation of the preparation for the final project approval and construction of the multi-billion-dollar water infrastructure project.
  - For the Operations Simulations Modeling contract 1 SOQ was received. The SOQ was reviewed by an Authority Selection Panel (comprised of Reservoir Committee and Authority Board members), an interview was held with the selected firm by the Panel. The Selection Panel recommended the firm based on qualifications based on a detailed selection criteria.
  - For the Engineering - Conveyance contract 3 SOQ's were received. The SOQ was reviewed by an Authority Selection Panel (comprised of Reservoir Committee and Authority Board members), an interview was held with the selected firm by the Panel. The Selection Panel recommended the firm based on qualifications based on a detailed selection criteria.
  - CH2M was selected by the Sites Authority and approved by the Authority Board to provide Operations Simulation Modeling support in November 2018. ***Attachment F***
  - CH2M was selected by the Sites Authority and approved by the Authority Board to provide Engineering – Conveyance support in April 2020, along with the first task order. ***Attachment G***
  - This scope of work is included in the Authority's Approved Work Plans. The Amendment 2 Work Plan and Task Order was approved on August 25, 2020 and the Amendment 3 Work Plan was approved on November 22, 2021.
  - With the Award of the Contract, CH2M supplied a rate table with each staff listed by name and title with their raw salary rate, the CH2M Federally Approved Overhead rate, and a 10% fee. No mark ups were allowed for subcontractors or expenses. The rate table for this project is below.

## Sites Reservoir Program

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Principal	127.26	157.70%	10%	360.74
Project Manager	131.65	157.70%	10%	373.18
Environmental Planner	33.26	157.70%	10%	94.28
Tunnel Lead & QC	61.04	157.70%	10%	173.02
Junior Engineer	31.52	157.70%	10%	89.35
Technician	33.56	157.70%	10%	95.13
Environmental Lead	74.66	157.70%	10%	211.65
Junior Engineer	40.46	157.70%	10%	114.70
Lead Technician	65.24	157.70%	10%	184.94
Site Civil - Roads	50.84	157.70%	10%	144.11
Electrical	76.66	157.70%	10%	217.30
Administrative Assistant	26.87	157.70%	10%	76.16
GIS Lead	53.78	157.70%	10%	152.44
Sr. QC Reviewer	92.31	157.70%	10%	261.68
Surveying and Mapping Lead	116.60	157.70%	10%	330.52
Reservoir Design	91.48	157.70%	10%	259.32
QC Manager	78.79	157.70%	10%	223.35
Project Controls	55.29	157.70%	10%	156.73
Word Processing	43.42	157.70%	10%	123.07
Hydro Turbine Design Engineer	78.52	157.70%	10%	222.57
SCADA Lead	96.77	157.70%	10%	274.30
Fisheries & Hydraulics Engineer	99.06	157.70%	10%	280.80
Site Civil/Roads/Traffic	60.74	157.70%	10%	172.17
Structural	82.40	157.70%	10%	233.58
Pipeline Design	56.66	157.70%	10%	160.60
Reservoir Design	95.76	157.70%	10%	271.45
Engineering - General Assistance	82.10	157.70%	10%	232.73
Technician	36.32	157.70%	10%	102.96
Mechanical/QC	104.00	157.70%	10%	294.81
Specifications	77.62	157.70%	10%	220.04
Structural-Pipelines/QC	74.48	157.70%	10%	211.13
Pump/Generating Plant Lead	76.83	157.70%	10%	217.80
Technical Editor	42.47	157.70%	10%	120.39
Hydropower/QC	126.88	157.70%	10%	359.66
Hydraulic Modeler	43.15	157.70%	10%	122.32
Hydraulic Modeler	61.49	157.70%	10%	174.30
Flood Hydraulic Modeler	85.36	157.70%	10%	241.96
Conveyance Lead	128.70	157.70%	10%	364.83
Conveyance Technician	54.45	157.70%	10%	154.35
Technician	46.71	157.70%	10%	132.41
Geotechnical Lead	72.76	157.70%	10%	206.25
Mechanical Engineer	42.18	157.70%	10%	119.56

## Sites Reservoir Program

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Cost Estimator	83.14	157.70%	10%	235.68
Cost Estimator	56.23	157.70%	10%	159.40
Air Quality Specialist	72.46	157.70%	10%	205.39
Engineering - Hydrodynamic Modeling	58.34	157.70%	10%	165.38
Engineering - Systems Modeling	103.37	157.70%	10%	293.01
Engineering - Systems Modeling	53.31	157.70%	10%	151.11
Engineering - Systems Modeling	46.51	157.70%	10%	131.83
Engineering - Hydrodynamic and Water Quality	96.68	157.70%	10%	274.07
Environmental Resources	87.10	157.70%	10%	246.91
Engineering - General Assistance	128.70	157.70%	10%	364.83
Engineering - Intakes and Fish Screens	131.65	157.70%	10%	373.18
Engineering - Systems Modeling QA	93.08	157.70%	10%	263.84
Engineering - Systems Modeling	43.25	157.70%	10%	122.60
Engineering - Systems Modeling	42.13	157.70%	10%	119.43
Engineering - Systems Modeling	48.79	157.70%	10%	138.30
Engineering - Systems Modeling	37.50	157.70%	10%	106.31
Engineering - Systems Modeling	46.16	157.70%	10%	130.84
Scientist	85.37	157.70%	10%	242.00
Scientist	68.79	157.70%	10%	195.00
Scientist	64.56	157.70%	10%	183.00
Engineering - Groundwater Modeling	45.50	157.70%	10%	128.97
Engineering - Hydrodynamic and Water Quality	49.12	157.70%	10%	139.24
Engineering - Systems Modeling	92.25	157.70%	10%	261.50
Engineering - Groundwater Modeling	92.63	157.70%	10%	262.59
Engineering - Groundwater Modeling	105.74	157.70%	10%	299.74
Project Controls	63.92	157.70%	10%	181.19

### Contractor – AECOM (Task 2) - \$1,394,307

- AECOM will provide Engineering Reservoir services for the Sites Project. They will provide Engineering services to complete feasibility level designs with a level of detail to support the development of a Class IV cost estimate.
- The Sites Reservoir Authority required augmented technical services because they have no employees. All technical work is contracted out to Service Area Consultants.
- Costs for this budget utilized negotiated rates based on approved federal overhead rates and actual employee direct costs. The scope of work was defined by the Sites Authority and technical consultants utilizing best approaches. Initial cost estimates were done by Sites Authority staff before scopes were given to consultants to provide budget estimates. AECOM based their estimates on previous work completed on similar type large projects. These estimates were then reviewed and negotiated with the Authority's Agent before being reviewed

## ***Sites Reservoir Program***

by the Sites Budget and Finance Committee, Reservoir Committee and then approved by the Authority Board.

- The Sites Project Authority issued a Request for Qualifications Engineering Services, RFQ No. 19-03 on June 20, 2019.
  - The Authority was seeking the services of highly qualified engineering firms to provide project development services for new and augmented technical areas for the implementation of the preparation for the final project approval and construction of the multi-billion-dollar water infrastructure project.
  - For the Engineering - Reservoir contract 1 SOQ was received. The SOQs was reviewed by an Authority Selection Panel (comprised of Reservoir Committee and Authority Board members), interviews where than held with the selected firm by the Panel. The Selection Panel made a recommendation based on qualifications based on a detailed selection criterion specific to each service area.
  - AECOM was selected by the Sites Authority and approved by the Authority Board to provide Engineering – Reservoir support in April 2020, along with the first task order. ***Attachment H***
  - This scope of work is included in the Authority’s Approved Work Plans. The Amendment 2 Work Plan and Task Order was approved on August 25, 2020 and the Amendment 3 Work Plan was approved on November 22, 2021.
  - With the Award of the Contract, AECOM supplied a rate table with each staff listed by name and title with their raw salary rate, the AECOM Federally Approved Overhead rate, and a 10% fee. No mark ups were allowed for subcontractors or expenses. The rate table for this project is below.

## Sites Reservoir Program

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Senior Project Manager	141.63	136.85%	10%	368.99
Contract Manager	108.80	136.85%	10%	283.46
TO Manager	98.93	136.85%	10%	257.74
Principal Bridge	135.56	136.85%	10%	353.19
Bridge Engineer	70.89	136.85%	10%	184.70
Principal Roads	128.70	136.85%	10%	335.32
Roadway Support	116.11	136.85%	10%	302.52
Roadway Team Lead	90.56	136.85%	10%	235.95
Roadway Team Lead	78.65	136.85%	10%	204.90
Roadway Task Leader	67.60	136.85%	10%	176.12
Principal Civil	105.03	136.85%	10%	273.63
Principal Civil	83.48	136.85%	10%	217.50
Senior Civil	56.06	136.85%	10%	146.05
Mid Civil	57.32	136.85%	10%	149.35
Mid Civil	52.52	136.85%	10%	136.83
Principal Estimator	116.47	136.85%	10%	303.44
Cost Estimating	66.94	136.85%	10%	174.41
Geotechnical	114.94	136.85%	10%	299.46
Principal Geotechnical Engineer	92.54	136.85%	10%	241.09
Principal Geotechnical Engineer	96.39	136.85%	10%	251.13
Tunnel Lead	107.13	136.85%	10%	279.10
Tunnel	58.66	136.85%	10%	152.82
Senior Electrical	102.96	136.85%	10%	268.25
Civil/Hydraulics Technical Reviewer	101.10	136.85%	10%	263.40
Construction Materials Reviewer	96.08	136.85%	10%	250.31
Geology Reviewer	93.12	136.85%	10%	242.61
I/O Structure and Spillway Hydraulics	83.39	136.85%	10%	217.26
Instrumentation Engineer	81.37	136.85%	10%	212.00
Senior Engineer	73.26	136.85%	10%	190.86
Mid Engineer	59.04	136.85%	10%	153.81
Junior Engineer	40.30	136.85%	10%	105.00
Senior CAD	81.61	136.85%	10%	212.62
CAD Lead	76.55	136.85%	10%	199.45
CAD Lead / Support Engineer	56.07	136.85%	10%	146.09
CAD Lead	43.48	136.85%	10%	113.29
CAD Support	43.91	136.85%	10%	114.39
GIS Lead	52.83	136.85%	10%	137.65
QA Manager	73.60	136.85%	10%	191.76
Project Controls	48.20	136.85%	10%	125.58
Document Control/Tech Editor	43.08	136.85%	10%	112.24

## ***Sites Reservoir Program***

### **Contractor – Fugro (Task 3) - \$2,054,290**

- Fugro will provide Geology & Geotechnical Engineering services for the Sites Project. They will provide geotechnical services through conducting geologic and geotechnical data research, evaluation, and field investigation.
- The Sites Reservoir Authority required augmented technical services because they have no employees. All technical work is contracted out to Service Area Consultants.
- Costs for this budget utilized negotiated rates based on approved federal overhead rates and actual employee direct costs. The scope of work was defined by the Sites Authority and technical consultants utilizing best approaches. Initial cost estimates were done by Sites Authority staff before scopes were given to consultants to provide budget estimates. Fugro based their estimates on previous work completed on similar type large projects. These estimates were then reviewed and negotiated with the Authority's Agent before being reviewed by the Sites Budget and Finance Committee, Reservoir Committee and then approved by the Authority Board.
- The Sites Project Authority issued a Request for Qualifications for Project Development Support Services, RFQ No. 18-04 on September 5, 2018.
  - The Authority was seeking the services of highly qualified engineering firms to provide project development services for new and augmented technical areas for the implementation of the preparation for the final project approval and construction of the multi-billion-dollar water infrastructure project.
  - For the Geology & Geotechnical Engineering contract 2 SOQs were received. The SOQs were reviewed by an Authority Selection Panel (comprised of Reservoir Committee and Authority Board members), interviews were then held with the selected firms by the Panel. The Selection Panel recommended a firm based on qualifications based on a detailed selection criterion specific to each service area.
  - Fugro was selected by the Sites Authority and approved by the Authority Board to provide Geology & Geotechnical Engineering support in November 2018. ***Attachment I***
  - This scope of work is included in the Authority's Approved Work Plans. The Amendment 2 Work Plan and Task Order was approved on August 25, 2020 and the Amendment 3 Work Plan was approved on November 22, 2021.
  - With the Award of the Contract, Fugro supplied a rate table with each staff listed by name and title with their raw salary rate, the Fugro Federally Approved Overhead rate, and a 10% fee. No mark ups were allowed for subcontractors or expenses. The rate table for this project is below.

## *Sites Reservoir Program*

Category	Raw Rate	OH	Fee	Fully Burdened Rate
Principal in Charge	107.32	240.52%	10%	402.00
Project Manager	78.76	240.52%	10%	295.00
Principal Geologist	61.40	240.52%	10%	230.00
Principal Geologist	105.45	240.52%	10%	395.00
Principal Geologist	68.61	240.52%	10%	257.00
Principal Engineer	82.76	240.52%	10%	310.00
Principal Engineer	70.48	240.52%	10%	264.00
Manager Land Geophysics	67.54	240.52%	10%	253.00
Sr Geophysicist	57.13	240.52%	10%	214.00
Assoc. Geologist	53.39	240.52%	10%	200.00
Sr Project Admin	44.85	240.52%	10%	168.00
Sr Project Engineer	43.25	240.52%	10%	162.00
Sr Staff Engineer	38.18	240.52%	10%	143.00
Sr Staff Engineer	36.58	240.52%	10%	137.00
Project Geologist	34.44	240.52%	10%	129.00
Sr Staff Engineer	31.50	240.52%	10%	118.00
GIS Manager	41.11	240.52%	10%	154.00
GIS Geologist	31.50	240.52%	10%	118.00
Sr Admin Assistant	32.04	240.52%	10%	120.00

### 2. Cost Share

This Federal agreement is a 50/50 cost share with tasks invoiced half against the \$6.9 million WIIN Act funding and half will be paid for by the Participants \$6.9 million funding. The total of the project is \$13.8 million.



---

**From:** Kevin Spesert [kspesert@sitesproject.org]  
**Sent:** 1/26/2022 7:36:16 PM  
**To:** Ann Newton [anewton@katzandassociates.com]  
**Subject:** Fwd: Sites Website Contact Form: Trinity Journal

Ann...

Can you download the Trinity Journal article...it came out today...please email it to Jerry and cc me.

Thanks!

Kevin

---

**From:** Jerry Brown <jbrown@sitesproject.org>  
**Sent:** Wednesday, January 26, 2022 7:26 PM  
**To:** Kevin Spesert  
**Subject:** Re: Sites Website Contact Form: Trinity Journal

Can someone download josh's article. It's posted online. Thanks

Sent from my iPhone

On Jan 21, 2022, at 7:47 PM, Kevin Spesert <kspesert@sitesproject.org> wrote:

Per our conversation..

---

**From:** Sarah Rossetto <srossetto@katzandassociates.com>  
**Sent:** Friday, January 21, 2022 4:49 PM  
**To:** Kevin Spesert; Ann Newton; 'Kim Floyd'  
**Cc:** Sara M. Katz  
**Subject:** Sites Website Contact Form: Trinity Journal

Hi everyone,

We received this inquiry from a Trinity Journal reporter this afternoon – ideal timing after our discussion earlier this week. Kevin, Ann can respond to the reporter this afternoon to let him know that we received his inquiry, and then we can discuss a plan for setting up an interview.

Thanks,  
Sarah



**Sarah Rossetto**  
Senior Director  
d: 858.926.4007 · c: 530.304.8704  
[San Diego](#) · [Los Angeles](#) · [San Francisco](#)

---

**From:** HubSpot Forms <noreply@hubspot.com>

**Sent:** Friday, January 21, 2022 4:09 PM

**To:** Sarah Rossetto <srossetto@katzandassociates.com>

**Subject:** New submission on HubSpot Form "Sites Reservoir Contact Form - HubSpot Form"

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**New submission on HubSpot Form "Sites Reservoir Contact Form - HubSpot Form"**

---

**Page submitted on: Contact - Sites Reservoir**

**Email:**

[joshc@trinityjournal.com](mailto:joshc@trinityjournal.com)

**First Name:**

Josh

**Message:**

Hi,

My name is Josh Cozine and I'm a reporter for The Trinity Journal, a news paper out of Trinity County. I'm writing a piece about the Sites Reservoir and how it may effect the Trinity River and was hoping someone there might be interested in speaking sometime.

Best,

Josh

View in HubSpot



**CONTACT**

- Josh ([joshc@trinityjournal.com](mailto:joshc@trinityjournal.com))

This message was sent to [srossetto@katzandassociates.com](mailto:srossetto@katzandassociates.com) because your preferences are set to receive notifications like this. You can change it in your **notification preferences** page.

[sitesproject.org](http://sitesproject.org) (Hub ID: 21171004)

HubSpot, Inc.  
25 First Street, 2nd Floor  
Cambridge, MA 02141

---

**From:** k w [millionthstar@hotmail.com]  
**Sent:** 1/27/2022 6:25:29 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Comment on the proposed Sites Reservoir

Hello BR:

My comment is prefaced with the fact that I haven't, and don't anticipate having the time to read the Site Reservoir DEIR, which is unfortunate. Instead, my comment is a broad remark. Bottom line, the Sacramento River already has insufficient ecosystem services for native fish species, mainly due to low flows and pollution. If the primary source of water for the Sites will be the Sac river, that is not helping the situation at all.

I know - "California agriculture feeds the world". But the agricultural economy of the Sacramento Valley needs to re-think the types of crops that are grown, and the extent of export. Keeping the agricultural economy more local, creating incentives for farmers to switch crops or occupations, and emphasizing native fisheries recovery would mean less water demand.

Thank you,  
Kerry Wicker

# Sites Reservoir Project

Virtual Public Meeting

Revised Draft Environmental Impact Report  
/Supplemental Draft Environmental Impact  
Statement

December 15, 2021, 6:00—8:00 PM  
December 16, 2021, 9:00—11:00 AM



# Meeting Agenda

Project Presentation	9:00—9:35 AM
Questions and Answers	9:35—9:55 AM
RDEIR/SDEIS Public Comment	9:55—11:00 AM

This meeting is being recorded.

# Project Presentation

Ali Forsythe, Sites Project Authority



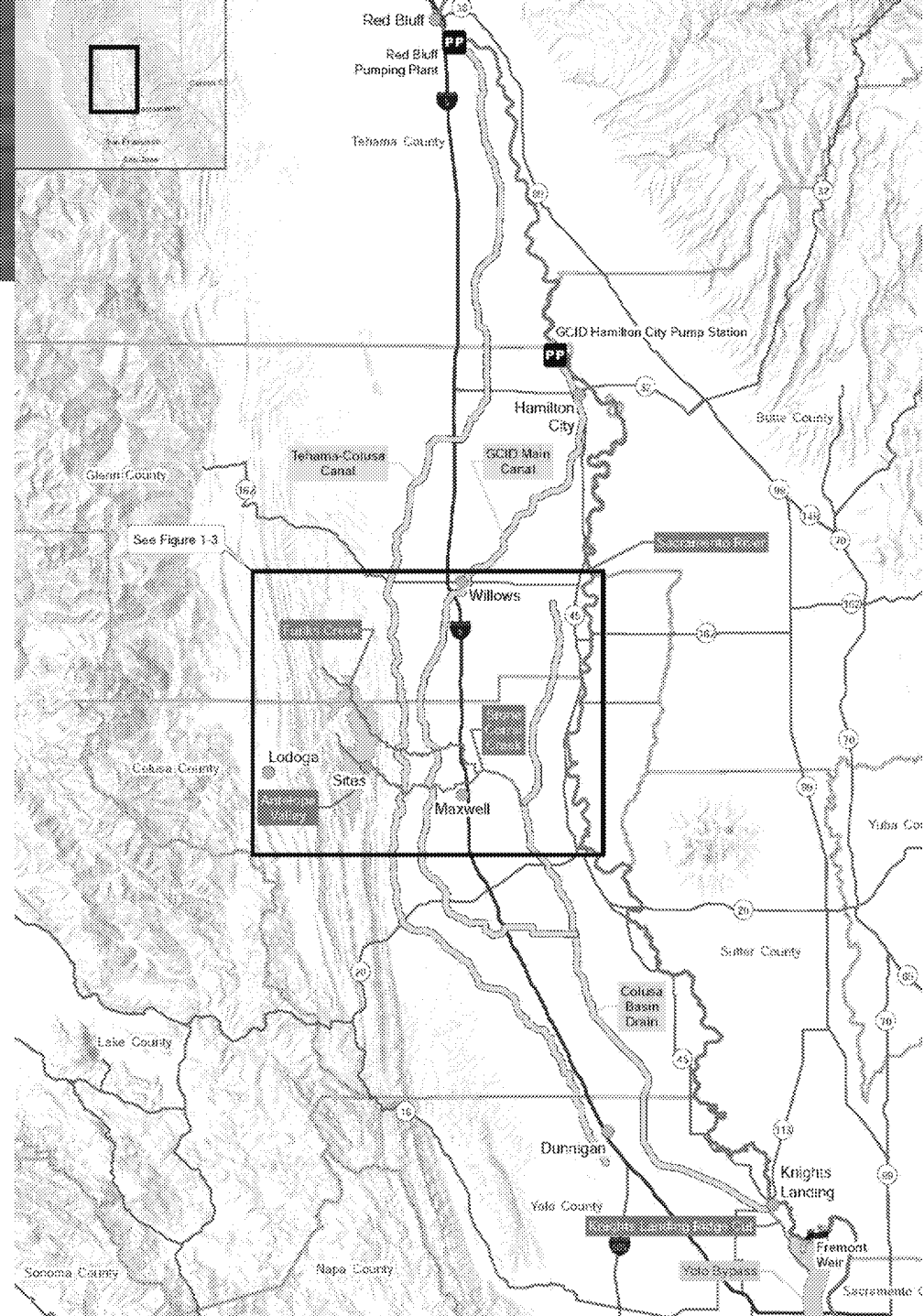
# Presentation Agenda

- Sites Reservoir
  - Overview
  - Changes since 2017
  - Project today
- California Environmental Quality Act and National Environmental Policy Act
  - Purpose
  - Authority and Reclamation's role
- Revised Draft EIR/Supplemental Draft EIS
  - Preliminary findings
  - How to provide comments



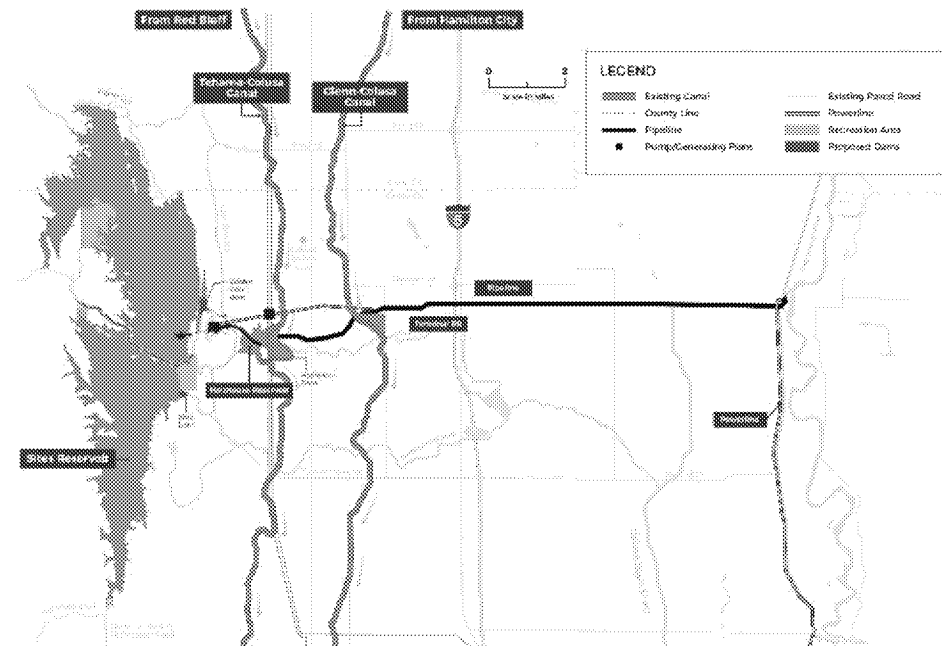
# Sites Reservoir

- Proposed off-stream reservoir west of Maxwell, CA
- Divert water from the Sacramento River in higher flow conditions
- Store water in the new Sites Reservoir for later use by farms, cities, and the environment
- Funded by State and Federal governments and public water agencies
- A tool to help the state restore flexibility, reliability, and resilience to our statewide water supply



# As Envisioned in 2017

- 2017 Project
  - 1.8 million acre-foot reservoir
  - 3 intakes (about 6,000 cfs diversion capacity in total)
  - New Delevan Pipeline and intake
  - Pump/generation facility
- 2017 Draft Environmental Impact Report (EIR)/ Environmental Impact Statement (EIS)
  - Released August 2017
  - 137 Comments Letters



# Refinements in 2019/2020

- Cost considerations and environmental impacts lead to rethinking the Project in 2019/2020
  - 16 new / modified configurations considered
- Key changes to the Project
  - Changes in facility footprints and new footprint areas
  - Changes in operations
    - Changes in diversion criteria
    - Reduction in diversion ability from 6,000 cfs to 3,900 cfs
  - Changes in conveyance (removal of Delevan pipeline, addition of Dunnigan pipeline)
  - Full or partial release to the Colusa Basin Drain

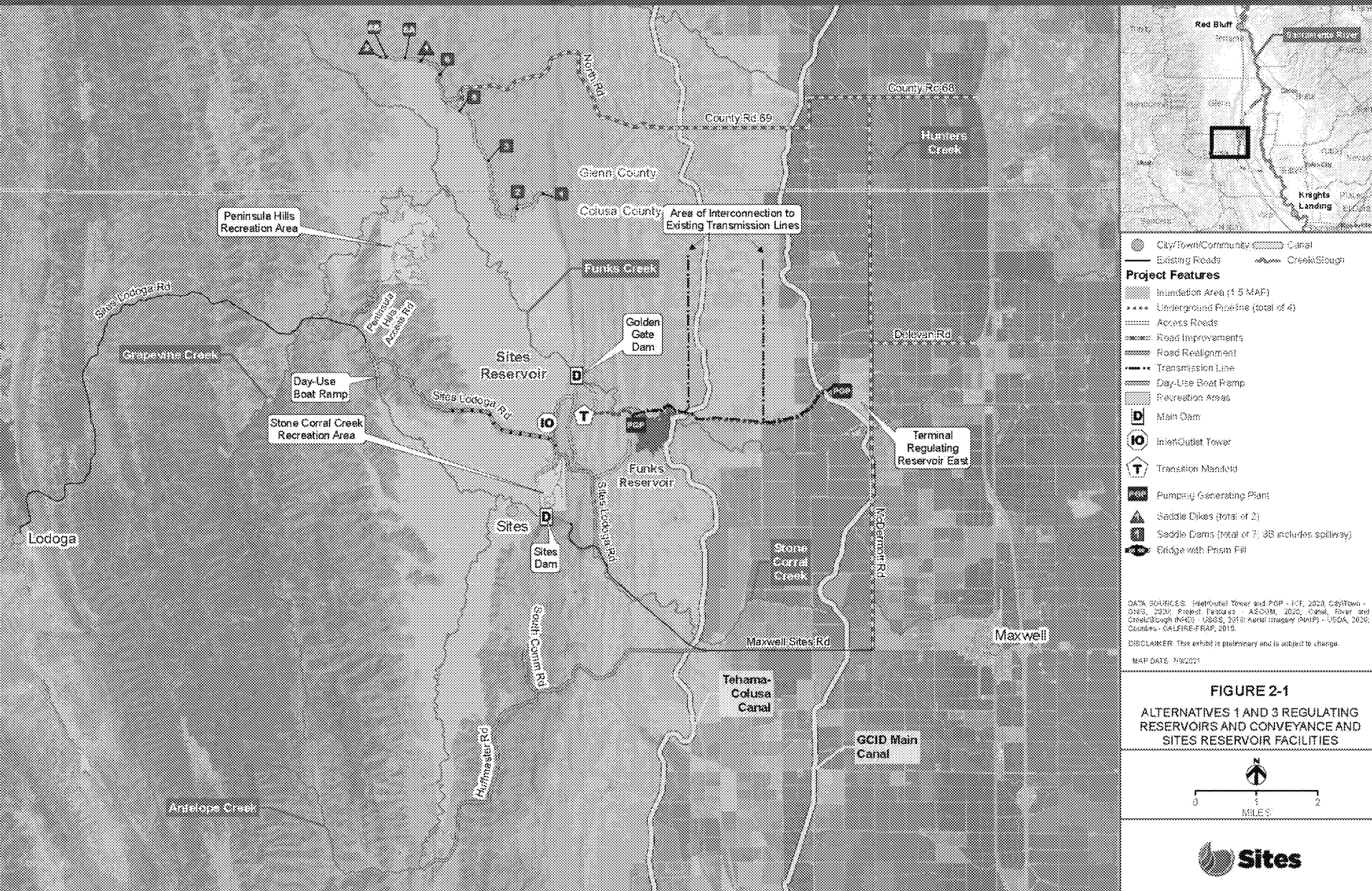
# Decision to Revise and Recirculate Draft EIR and Supplement Draft EIS

- Revisions to the Project resulted in the identification of new alternatives not previously analyzed in the 2017 Draft EIR/EIS
- Preparation of a Revised Draft EIR/Supplemental Draft EIS allows the Authority and Reclamation ability to:
  - Address changes to the Project
  - Update modeling baseline
  - Update existing conditions and cumulative projects
  - Prepare an analysis that takes into consideration the comments received on the 2017 Draft EIR/EIS

# Alternatives Considered in the Revised Draft EIR/Supplemental Draft EIS

Facilities / Operations	Alternative 1 – Authority's Preferred Project	Alternative 2	Alternative 3
Reservoir Size	1.5 MAF	1.3 MAF	1.5 MAF
Hydropower	Incidental upon release	Same as Alt 1	Same as Alt 1
Diversion Locations	Red Bluff Pumping Plant and Hamilton City	Same as Alt 1	Same as Alt 1
Conveyance Release / Dunnigan Release	1,000 cubic feet per second (cfs) into new Dunnigan Pipeline to Colusa Basin Drain	1,000 cfs into new Dunnigan Pipeline to Sacramento River. Partial release into the Colusa Basin Drain	Same as Alt 2
Reclamation Involvement	<ol style="list-style-type: none"> <li>1. Funding Partner</li> <li>2. Operational Exchanges               <ol style="list-style-type: none"> <li>a. Within Year Exchanges</li> <li>b. Real-time Exchanges</li> </ol> </li> </ol>	Operational Exchanges <ol style="list-style-type: none"> <li>a. Within Year Exchanges</li> <li>b. Real-time Exchanges</li> </ol>	Same as Alt 1, but up to 25% investment
DWR Involvement	Operational Exchanges with Oroville and storage in SWP facilities South-of-Delta	Same as Alt 1	Same as Alt 1
Route to West Side of Reservoir	Bridge across reservoir	Paved road around southern end of reservoir	Same as Alt 1

# Alternative 1 and 3 Facilities

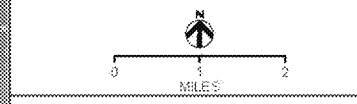


DATA SOURCES: Inlet/Outlet Tower and POP - ICE, 2020; CITY/TOWN - GWS, 2020; Project Features - ASONM, 2020; Canal, River and Creek/Sough (MCI) - USGS, 2018; Aerial Imagery (NAIP) - USGS, 2020; Counties - CALIFORNIA-FEAP, 2019.

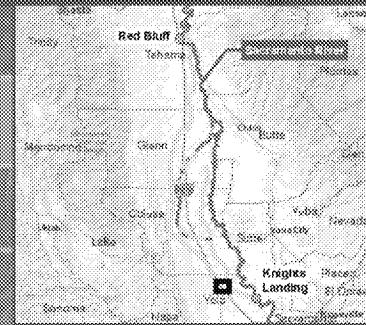
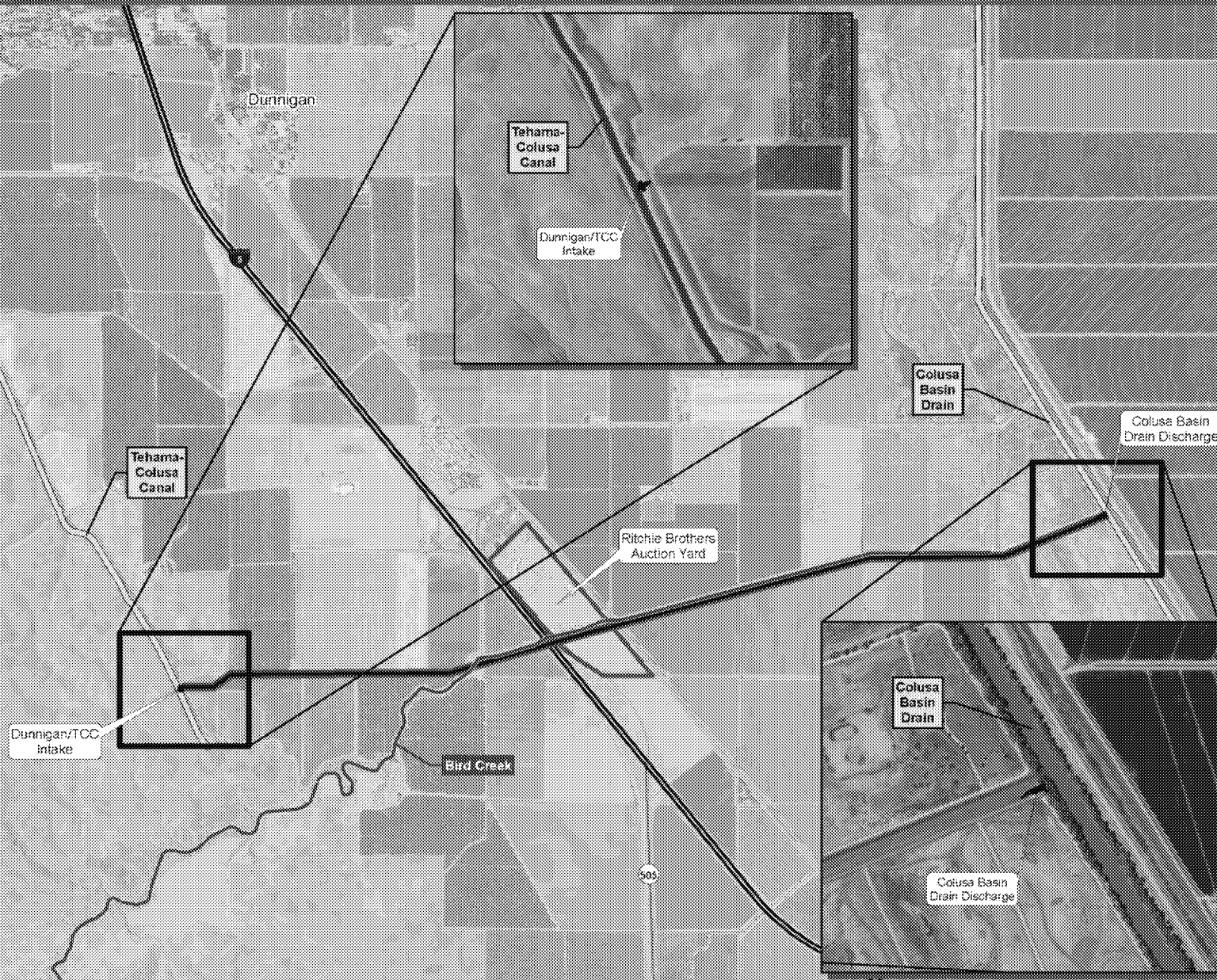
DISCLAIMER: This exhibit is preliminary and is subject to change.

MAP DATE: 7/9/2021

**FIGURE 2-1**  
**ALTERNATIVES 1 AND 3 REGULATING RESERVOIRS AND CONVEYANCE AND SITES RESERVOIR FACILITIES**



# Alternative 1 and 3 Facilities (cont)



**LEGEND**

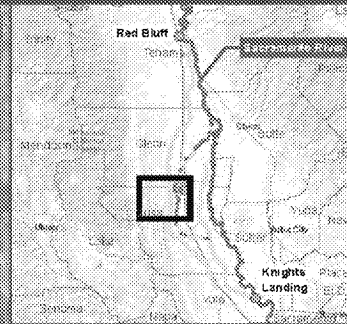
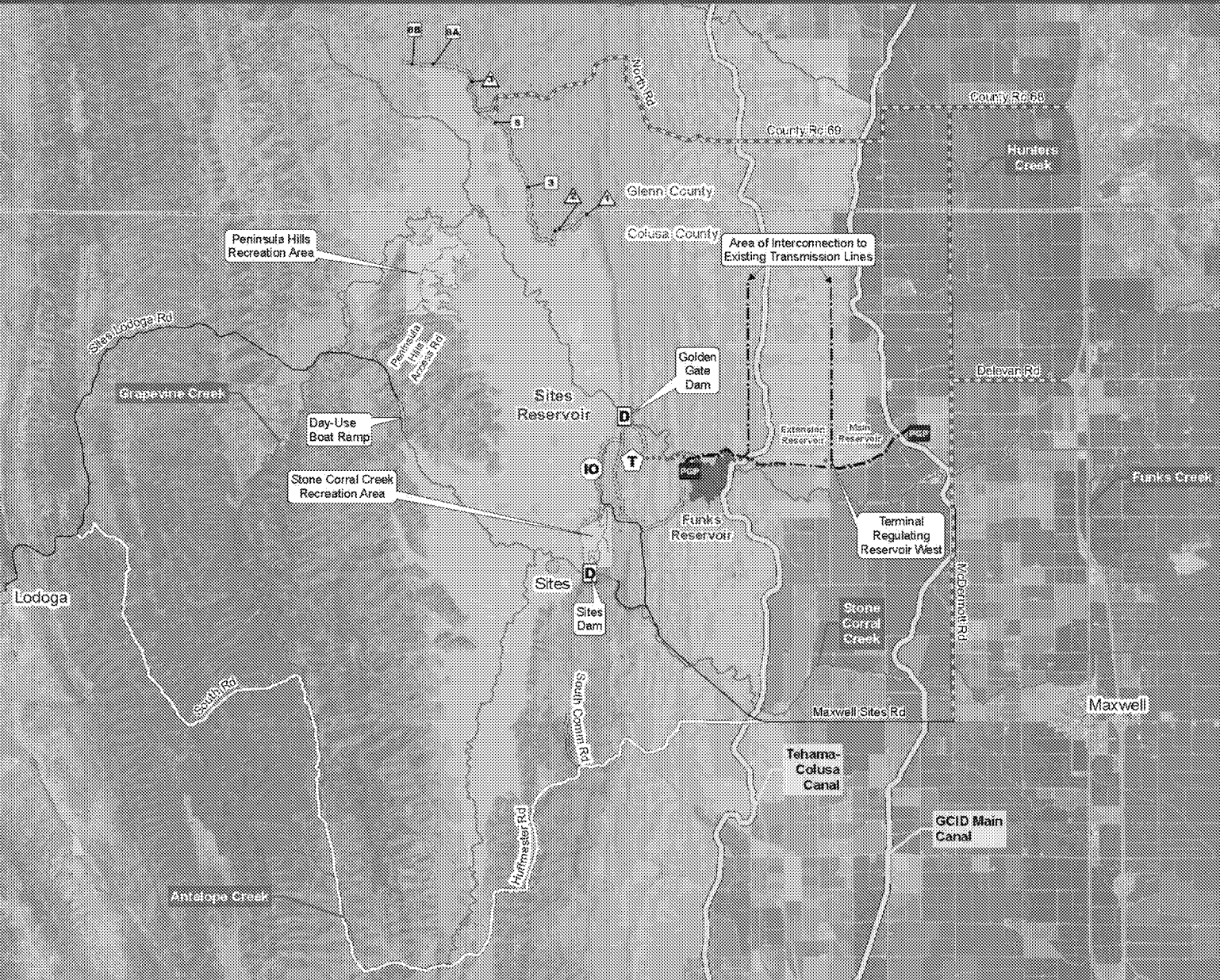
- City/Town/Community
- Bird Creek
- Dunnigan Underground Pipeline

DATA SOURCES: GeoFax - ©NGS, 2020; Project Features - AECOM; DENV Canals (R/S) - ©BGS, 2019; Aerial Imagery (PMP); USDA - 2020.  
 UNCLASIFIED: This exhibit is proprietary and is subject to change.  
 MAP DATE: 6/22/2021

**FIGURE 2-2**  
 ALTERNATIVES 1 AND 3  
 CONVEYANCE TO SACRAMENTO  
 RIVER COMPONENTS



# Alternative 2 Facilities



**Legend**

- City/Town/Community
- Existing Roads
- Canal
- Creek/Stream

**Project Features**

- Inundation Area (1.3 MAF)
- Underground Pipeline (total of 4)
- Access Roads
- Road Improvements
- Road Realignment
- Transmission Line
- Day-Use Boat Ramp
- Recreation Areas
- Main Dam (D)
- Inlet/Outlet Tower (IO)
- Transition Manifold (T)
- Pumping/Generating Plant
- Saddle Dikes (total of 3)
- Saddle Dams (total of 4; 8E includes spillway)

**DATA SOURCES:** Inlet/Outlet Tower and P&P - UCF, 2020; City/Town/County - GIS; 2020; Project Features - AEC/USF, 2020; Local Router at Creek/Ditch - BRGD - USFS, 2018; Aerial Imagery (P&AP) - USDA, 2020; Counties - CALTRANS P&AP, 2018.

**DISCLAIMER:** This exhibit is preliminary and is subject to change.

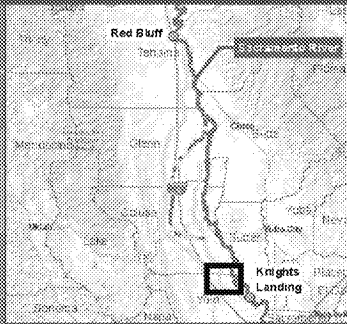
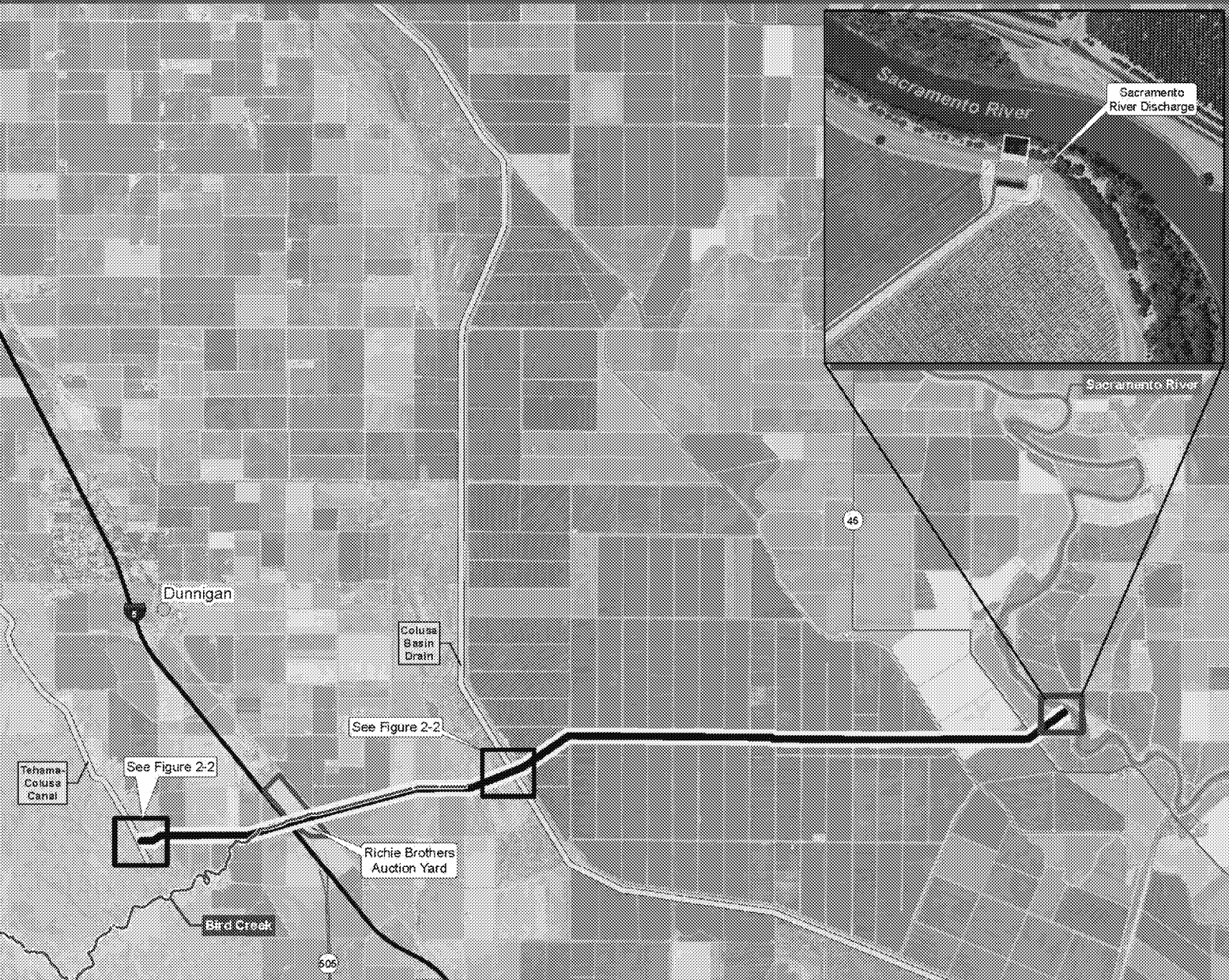
**MAP DATE:** 10/12/2021

**FIGURE 2-3**  
**ALTERNATIVE 2**  
**REGULATING RESERVOIRS AND**  
**CONVEYANCE AND**  
**SITES RESERVOIR FACILITIES**

0 1 2  
MILES



# Alternative 2 Facilities (cont)



- LEGEND**
- City/Town/Community
  - Bird Creek
  - Dunning Pipeline

DATA SOURCES: City/Town - GIS, 2020, Project Features - ABCOM, 2020, Canals (NAD) - USGS, 2018, Aerial Imagery (NAD) - USGS, 2020  
 DISCLAIMER: This exhibit is preliminary and is subject to change.  
 MAP DATE: 8/24/2021

**FIGURE 2-4**  
 ALTERNATIVE 2 CONVEYANCE TO  
 SACRAMENTO RIVER COMPONENTS



# Recreation Components

- Water-related and water-based recreation at 3 new recreation areas
  - Stone Corral Recreation Area – 235 acres, east side of Sites
    - 50 camp sites
    - 10 picnic sites
    - Hiking trails
    - Boat launch
  - Peninsula Hills Recreation Area – 373 acres, west side of Sites
    - 200 camp sites, 1 group camp
    - 10 picnic sites
    - Hiking trails
  - Day Use Boat Ramp – 10 acres, west side of Sites
- Phased approach to match interest – Stone Corral and Day Use Boat Ramp constructed first

# Flood Control Components

- Local flood control benefits to town of Maxwell and adjacent agricultural lands
- Provides 100-year flood protection to most of Maxwell and about 4,025 acres of agricultural land
- Reduce flooding of Interstate 5 in 100-year flood event

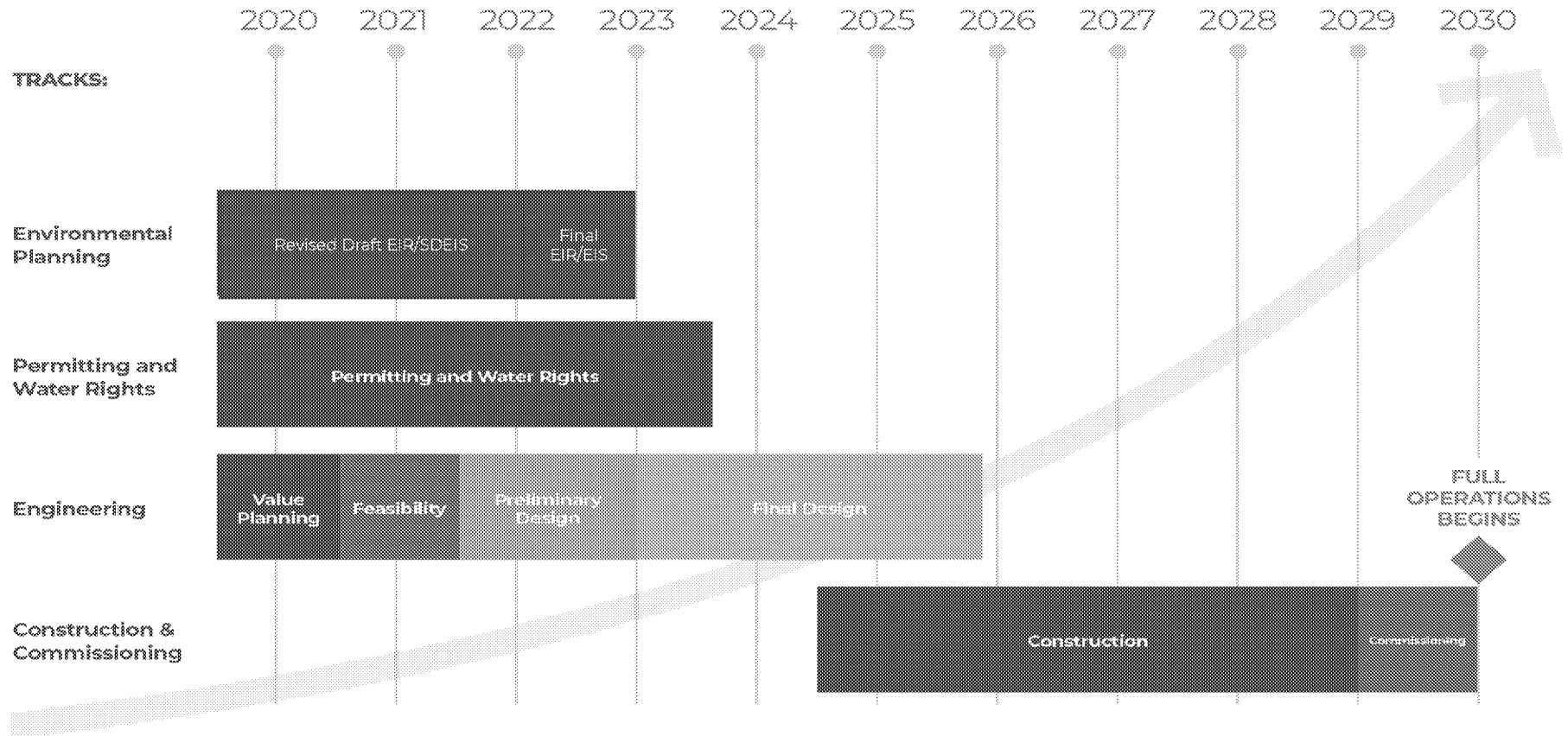


**Flooding in Maxwell,  
CA in Feb 2017**

Photo by Hector Iniguez, SF Gate

# Project Schedule

## Sites Reservoir Project Schedule



# California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA)

- CEQA and NEPA are intended to provide decision makers and the public with information about a proposed project's effects on the environment and to:
  - Prevent avoidable damage to the environment
  - Foster informed public decision making
  - Ensure transparency in governmental decision-making process
  - Encourage public participation
- CEQA is the State law and applies to discretionary approvals by California governmental agencies
- NEPA is a Federal law and applies to discretionary approvals by Federal governmental agencies

# Environmental Impact Report (EIR) / Environmental Impact Statement (EIS)

- Required when a proposed project would have one or more significant or adverse impacts on the environment
- Informational document which is intended to inform public agency decisionmakers and the public
  - Environmental effects of a project
  - Identify possible ways to minimize the effects
  - Describe reasonable alternatives to the project
- Authority is the Lead Agency for the EIR
- Reclamation is the Lead Agency for the EIS

# EIR/EIS Process and Schedule

EIR/EIS Process	Schedule
Issue Notice of Preparation / Notice of Intent	November 2001
Issue Second Notice of Preparation	February 2017
Conduct Scoping	February 2017
Release Draft EIR/EIS	August 2017
Public and Agency Review	August 14, 2017 – January 15, 2018
Prepare and Recirculate Revised Draft EIR/Supplemental Draft EIS	November 2021
Public and Agency Review	November 2021 – January 2022
Prepare Final EIR/EIS	January – October 2022
Release Final EIR/EIS	October 2022
Agency Decision (No Earlier Than)	November 2022

# Analyses in the Revised Draft EIR/ Supplemental Draft EIS

- Introductory Chapters
  - Ch. 1, Introduction
  - Ch. 2, Project Description and Alternatives
  - Ch. 3, Environmental Analysis
  - Ch. 4, Regulatory and Environmental Compliance
- Analysis of impacts to environmental resources in 26 chapters and 73 corresponding appendices
- Additional chapters address cumulative, growth-inducing and other required analyses



# Determination of Impacts

- Agency must consider direct and indirect effects
- Impacts determined by comparison to baseline physical conditions
- Impact determinations:

## CEQA Terminology

- ✓ No Impact
- ✓ Less than significant impact
- ✓ Less than significant with mitigation
- ✓ Significant impact

## NEPA Terminology

- ✓ Beneficial
- ✓ No effect
- ✓ No adverse effect
- ✓ Adverse effect
- ✓ Substantial adverse effect

# Resources with No Effect, No Adverse Effect, or Less than Significant Impacts

- Fluvial Geomorphology
- Groundwater Resources
- Minerals
- Recreation
- Energy
- Noise
- Population and Housing
- Public Services and Utilities
- Public Health and Environmental Hazards

# Resources with Impacts Requiring Mitigation

- Aquatic Biological Resources
- Greenhouse Gas Emissions
- Indian Trust Assets

# Resources with Significant and Unavoidable Impacts / Adverse and Substantial Effects

- Surface Water Quality
- Vegetation and Wetland Resources
- Wildlife Resources
- Geology and Soils
- Land Use
- Agriculture and Forestry Resources
- Navigation, Transportation and Traffic
- Air Quality
- Cultural Resources
- Tribal Cultural Resources
- Visual Resources
- Environmental Justice and Socioeconomics

# Highlight Area – Water Quality

- Analyzed inflows (Sacramento River, Funks and Stone Corral Creeks), in-reservoir processes, and outflows for metals, pesticides and temperature
- Less than significant / no adverse effects
  - No substantial increases in salinity or temperature in or downstream of the reservoir or violations of Delta or other water quality objectives
  - Levels of nutrients, organic carbon, and dissolved oxygen in releases would not violate water quality standards or waste discharge requirements
  - Harmful algal bloom occurrences are expected and would be addressed via monitoring and public notification
- Significant but reduced to less than significant with mitigation
  - Elevated concentrations of some metals and pesticides in Yolo Bypass as a result of redirection of some of the Colusa Basin Drain water from the Sacramento River to the Yolo Bypass
  - Elevated concentrations of some metals in Stone Corral Creek
- Significant and unavoidable / adverse and substantial effects
  - Increased methylmercury concentrations downstream of Sites Reservoir during the initial filling and for up to 10 years after

# Highlight Area – Fisheries (Salmonids and Steelhead)

- Diversion criteria revised to be more protective
  - Wilkins Slough bypass flows
  - Pulse flow protection
  - Fremont Weir protection
  - When Sacramento River is not fully appropriated
  - During Delta “excess conditions”
  - Flows available above those needed to meet applicable laws, regulations, biological opinions, incidental take permits, and court orders in place at the time of diversion
- Significant operations effects to salmonids and steelhead
  - Reduced to less than significant with mitigation
    - Project diversions from Sacramento River in March through May of all water year types would not occur if flows in the River are or would be below 10,700 cfs at Wilkins Slough
    - Effectively modifies Project diversion criteria

# Highlight Area – Trinity River

- No effect or changes in the operations of the Central Valley Project (CVP), Trinity River Division facilities (including Clear Creek)
- Reclamation would continue to operate consistent with all applicable statutory, legal and contractual obligations, including but not limited to:
  - Trinity River Record of Decision (ROD)
  - 2017 ROD for the Long-Term Plan for the Lower Klamath River
  - Provisions of the Trinity River Division CVP Act of 1955

# Highlight Area – Tribal Coordination

- Authority – Compliance with Assembly Bill 52
  - Reached out to 7 tribes in 2020
    - Tribes traditionally or culturally affiliated with lands in the Project footprint
    - Sent letters, emails, and called
    - 2 tribes responded and in on-going consultation
  - Reached out to 7 additional tribes in 2021
    - Tribes traditionally or culturally affiliated with locations where Project operations have the potential to change river flows as compared to current conditions
    - Sent letters, emails, and called
    - No response to date from these tribes
  - On-going consultation with 2 tribes
  - Tribal consultation efforts under AB 52 identified in detail in Chapter 23
- Reclamation – Compliance with Section 106 of the National Historic Preservation Act
  - Reached out to 9 tribes in 2021
  - One response received recently
  - Planning additional outreach in 2022



# Most Effective Comments

- Comments should focus on the substantive content of the RDEIR/SDEIS
- Comments should be limited to the environmental analysis in the RDEIR/SDEIS and not the prior 2017 Draft EIR/EIS
- All comments on the RDEIR/SDEIS must be postmarked or received by 5:00 PM PST on January 11, 2022
- Authority and Reclamation will respond to all substantive comments received in the comment period in the Final EIR/EIS

# Submitting Comments

- Provide verbal comments at this meeting
  - After the question and answer session
- Submit written comments
  - Email comments to:
    - [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)
  - Mail written comments to:
    - Sites Project Authority, P.O. Box 517, Maxwell, CA 95955
    - Bureau of Reclamation, 2800 Cottage Way, W-2830, Sacramento, CA 95825

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/27/2022 1:43:10 PM  
**To:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Fisher, Linda [linda.fisher@hdrinc.com]  
**Subject:** FW: Sites Project PCFFA/IFR Supplemental Comments  
**Attachments:** PCFFA-IFR Joint Sites Comments (01-27-22).pdf

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Glen Spain <fish1ifr@aol.com>  
**Sent:** Thursday, January 27, 2022 12:44 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; vking@usbr.gov; EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Subject:** Sites Project PCFFA/IFR Supplemental Comments

Ms. Alicia Forsythe  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

27 January, 2022

Ms. Vanessa King  
Bureau of Reclamation  
2800 Cottage Way, Room W-2830  
Sacramento, CA 95825

*Submitted electronically to:* [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org), [vking@usbr.gov](mailto:vking@usbr.gov), [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

Re: Supplemental Comments on the RDEIR/SDEIS for the Sites Reservoir Project

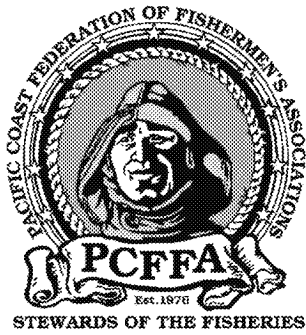
Dear Ms. Forsythe and Ms. King:

These are PCFFA/IFR Supplemental Comments, to add to comments from NRDC, *et al.* that we have also joined in submitting and will be submitted tomorrow. Please add these to the Administrative Record in this proceeding. If there is any problem downloading this document, please contact me immediately. Thanks for the opportunity to comment.

=====  
Glen H. Spain, J.D., NW Regional Director  
Pacific Coast Federation of Fishermen's Associations (PCFFA)  
and the Institute for Fisheries Resources (IFR)  
PO Box 11170, Eugene OR 97440-3370

Phone: 541-689-2000 Email: [fish1lfr@aol.com](mailto:fish1lfr@aol.com)

=====



**PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS  
and the  
INSTITUTE FOR FISHERIES RESOURCES**

**NW Regional Office  
PO Box 11170  
Eugene, OR 97440-3370  
(541)689-2000**

**Reply Email: [fishlifr@aol.com](mailto:fishlifr@aol.com)**

Ms. Alicia Forsythe  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

27 January, 2022

Ms. Vanessa King  
Bureau of Reclamation  
2800 Cottage Way, Room W-2830  
Sacramento, CA 95825

*Submitted electronically to:* [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org), [vking@usbr.gov](mailto:vking@usbr.gov), [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

Re: Supplemental Comments on the RDEIR/SDEIS for the Sites Reservoir Project

Dear Ms. Forsythe and Ms. King:

These are PCFFA/IFR Supplemental Comments, to add to comments from NRDC, *et al.* that we have also joined in submitting. Please add these to the Administrative Record in this proceeding.

#####

## Where are the Environmental Benefits of this Project?

“Environmental benefits” and “environmental purposes” of the Project used in part to justify the Project are vague and largely undefined – and in several instances (as noted in our other comments), illusory. Insofar as any of those benefits accrue to improve highly stressed in-river conditions (particularly high temperatures) and to benefit aquatic species (such as Chinook salmon and steelhead) in the Sacramento River, only **Alternative 2** makes provisions for returning waters captured from the Sacramento in the winter directly back into the Sacramento (presumably in the summer and fall) to provide cold water benefits for ESA-listed winter run Chinook, spring-run Chinook and steelhead, and also non-listed but declining as well as economically valuable harvested fall-run Chinook in the river.

Nowhere in the Project NEPA documents are these “environmental benefits” – particularly the use of stored Project water *specifically* for reduction of high-water temperatures in the summer that threaten anadromous fishes – spelled out or modeled in any detail.

It appears its history that this Project was conceived and created almost entirely to augment irrigation water supplies, not to actually help solve any of the many serious environmental problems that the CVP and other related water projects have created by way of water over-appropriation, groundwater depletion, and cascading Bay Delta ecosystem collapses that are the underlying causes of the multiple and synergistic ESA- and CESA-listed species crises that are mere symptoms. In short, the Project is designed almost entirely to benefit irrigation, not to store water to meet watershed ecosystem or species conservation needs.

We believe that there may be great merit in the basic concept of setting aside winter water for storage when not needed for fish, so that those waters can then be used to augment summer flows with additional cold water that salmonids need for summer survival. Especially as a way to adapt river conditions to climate change, the basic concept of substitution flows does, in our view, have some merit. There will of course be some benefits to irrigation as well by making it easier for fish to survive in the system, not only directly (through higher and colder summer flows) but also important benefits in *increasing the overall flexibility of management* for the whole system, once ecosystem balance is re-achieved. But so far, this Project is not serving that purpose.

Instead of designing this Project almost exclusively around meeting irrigation needs, leaving environmental benefits as a mere public relations afterthought, the Project should be specifically redesigned to provide identifiable “environmental benefits” as a first priority, then modeling can determine ways of better meeting irrigation needs without compromising those basic environmental benefits, rather than *vice versa* as is now the case.

In any event, those “environmental purposes” and safeguards should be spelled out and designed into the system as “including providing cold water within the Sacramento River to help meet the needs of the Sacramento-Shasta Temperature Management Plans, D-1641 and WRO 90-5 and other relevant water quality plans and standards, and to prevent temperature-dependent

mortalities for anadromous salmonids and other aquatic species as specified in those plans and in any later Biological Opinions for ESA and/or CESA-listed aquatic species.” Targeting ways for meeting these ecosystem needs, and especially for meeting mandatory water quality and temperature standards designed to meet those ecosystem needs, should be written into the Project’s purpose, design and management criteria. This new approach would generate a great deal more -- and much broader -- public support.

Protecting ESA- and CESA-listed species is *not optional*, but rather is legally a higher priority for beneficial use of water throughout the hydrological system than any conceivable irrigation use, whether by contract or regular water right. Legally, the BOR and State must protect these species and abide by relevant Biological Opinions to their best ability of what is physically possible.

Whether there are any actual “environmental benefits” for salmon in the Sacramento at all in the Project as currently designed is questionable in terms of providing more cold water for anadromous species during summer months. Additional water returned to the Sacramento from Sites Reservoir will likely be warmer water than the ambient temperatures of the river, not cold water, as it will have been sitting in a relatively shallow reservoir with considerable surface area through which to absorb solar energy through the summer. Exactly what will happen to that water, particularly in the middle of the summer when most needed, has not been specifically nor adequately modeled in the RDEIR/SDEIS.

And as noted above, only **Alternative 2** would even be capable, as a matter of basic engineering, of returning any of those stored flows directly back to the Sacramento River, as opposed to the nearest irrigation ditch. If these Sites-origin flows are intended to free up other, colder waters (e.g., from Shasta reservoir) to use to maintain cold water fish-flows, this goal has not been specified nor quantified in the RDEIR/SDEIS analysis, and there is thus no guarantee that such mitigation measures would ever occur. In what is clearly an over-appropriated hydrological system, there is always pressure to use whatever water is available for irrigation, rather than for the protection of ESA- and CESA-listed species. Without some guarantees built into Project operations parameters for such fish-flow mitigation measures, they remain uncertain and speculative.

### **Potential for Impacts on Aquatic Biological resources Due to Changes in Flow Patterns in the Sacramento River**

What is the net annual reduction of total water available, expected through: (a) ground seepage from the reservoir; (b) evaporation; (c) various conveyance losses? These types of water losses would all likely be increased by the process of diverting, storing and then channeling back waters stored in Sites Reservoir. Such water losses should be quantified at the very least so as to determine whether the Project as proposed would even be an effective or efficient way to manage water.

Another question to ask is what will be the reduction of high winter-time “flushing flows” because of Project diversions, and how those reductions might affect natural high flow scouring mechanisms that reduce the incidence and spread of such fish pathogens as *Ceratanova shasta*, and that suppress the incidence of harmful algal blooms (HABs), both of which have become more prevalent throughout the hydrological system.

There also are unacceptable high likely impacts on ESA-listed winter-run Chinook at Hamilton City and Red Bluff intakes:

“All winter-run Chinook salmon spawning occurs upstream of Red Bluff (Azat 2019), so all juvenile winter-run migrating downstream would need to pass the two intake locations at Red Bluff and Hamilton City..... It is possible that a relatively large proportion of downstream-migrating juvenile salmonids could pass relatively close to the Red Bluff and Hamilton City intakes, particularly during nighttime periods when most migration occurs [citations omitted].....

“[I]t would be expected that approximately 10-30% of downstream-migrating juvenile salmonids approaching the river-oxbow split would enter the oxbow and have the potential to be exposed to the Hamilton City intake screen.” [Pages 11-84 & 85]

This is an unacceptable amount of “take” for an ESA-listed species (winter-run Chinook) already on the verge of extinction. At a minimum, these two intakes must be redesigned to absolutely minimize “take” of these fish, including repositioning them so that there are adequate natural sweeping flows sufficient to guide juvenile fish away from these intakes, and with screens positioned far enough from the intake current to keep juvenile fish from entrainment. These design elements need to be in place in the Plan. It is NOT sufficient to merely plan future studies on these issues, as currently stated:

“Potential exposure of juvenile salmonids to the Red Bluff and Hamilton City fish screens would be addressed by technical studies focused on diversions at these locations during high winter flow conditions when Project diversions would occur (Appendix 2D).” [Page 11-86]

Again, without an adequate and stable description of all aspects of the Project plan, its likely impacts simply cannot be analyzed, and this violates the very purposes of both CEQA and NEPA. It is simply not enough to state, as is done above, that all these issues would somehow be addressed later in time, i.e., long after the CEQA and NEPA comment stage has passed.

This effort to indefinitely defer actual analysis of entrainment impacts simply begs the question: “What happens if entrainment at these intakes is found to be unacceptably high?” The current Project plan does not seem to answer this question, but rather it goes through a convoluted reasoning process (pages 11-91 to -97) to justify the largely still unsupported assertion that:

“The Red Bluff and Hamilton City fish screens are designed to protective standards for Chinook salmon fry and so near-field effects would be expected to be limited.



Impingement could be monitored at the Red Bluff and Hamilton City intakes during high winter flow conditions when Project diversions would occur (Appendix 2D).”

This is more like simply taking these pre-existing intakes as they now are, rather than bringing them up to higher standards based on best available design criteria – and hoping for the best. At the least, if there is to be meaningful monitoring in accordance with Appendix 2D, there should be certain entrainment “triggers” and caps above which, if these levels are reached, the intakes will be redesigned or operated to minimize such problems.

### **Temperature Effects from Irrigation Diversions on Winter-run Chinook Must Be Considered Cumulatively, Not in Isolation**

Project analysis categorically dismisses most (but not quite all) increased temperature impacts on winter-run Chinook as (1) being less than 5% greater under the alternatives than under the NAA, and (2) the exceedance per day was generally less than 0.5° F. greater than under the NAA. The RDEIR/SDEIS then states:

“Because these biologically meaningful effects occurred in only one month of one water year type, they are not expected to be persistent enough to affect winter-run Chinook salmon at a population level.” [11-105].

And later:

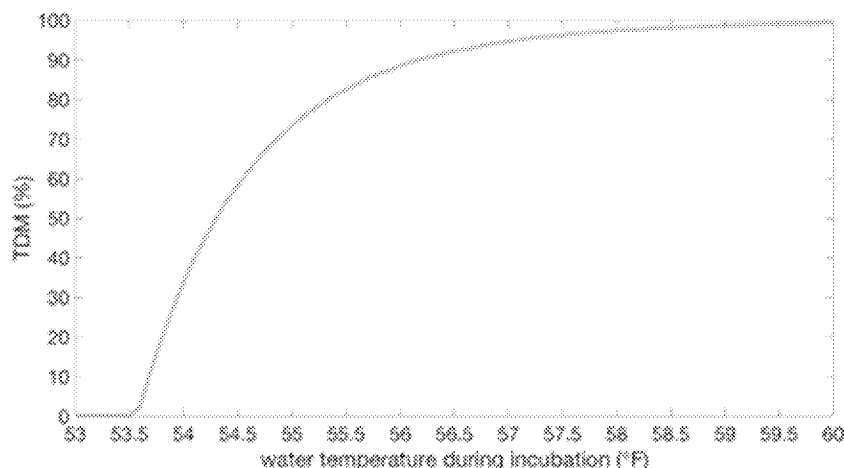
“Overall, effects of Alternatives 1, 2, and 3 on water temperature-related effects to winter-run Chinook salmon in the Sacramento River are expected to be biologically inconsequential due to the low frequency and small magnitude of differences between Alternatives 1, 2, and 3 and the NAA.” [11-107]

**However, requiring “a population level” effect is not the appropriate standard here.** The finding of a “take” of this ESA-listed species does not require “population level” impacts – and lack of population level effects does not excuse a “take” of an endangered species.

The winter-run Chinook is a federally ESA-listed species that has been pushed extremely close to extinction already, and lays eggs which are also very temperature sensitive at ambient water temperature thresholds above 53.5° F. **Temperature-dependent egg mortalities (TDM) do not change in a linear fashion with increased temperature; they are threshold-related.** Water temperature increases above that particular biological threshold (now all too common in the Sacramento River system) can result in very large temperature-dependent egg mortalities even with very small increases in ambient water temperature above that key biological threshold. In that context even a 0.5° F. water temperature increase above that threshold can result in much larger egg mortalities on a non-linear basis! (See Figure 1).

Generally speaking, the extent of TDM in a cohort of Chinook salmon eggs is a function of by how much river temperatures exceed 53.5°F at the location of the redds, and for how long

these conditions persist. Egg mortality rates increase very rapidly at daily average temperatures above 53.5°F (11.94°C) (Martin et al. 2016), and TDM is above 70% when eggs are incubated at constant temperatures of 55°F (~12.8°C) and above (see Figure 1); this is likely an underestimate because river temperatures are not constant over the course of a day -- a 55°F average temperature means the eggs will be exposed to even higher temperature “spikes” during the hottest parts of each sunny day.



**Figure 1:** Temperature-dependent mortality (% TDM) of winter-run Chinook Salmon eggs as a function of water temperatures, as modeled by NMFS based on research published by Martin et al. 2016. Note that eggs begin to die when exposed to constant temperatures above 53.5°F and mortality increases rapidly as temperatures increase. In particular, exposure to constant temperatures of 55°F corresponds to temperature-dependent mortality of greater than 70%. In the wild, temperatures are not constant; it is likely that TDM is higher at any given average temperature than it is at the corresponding constant temperature depicted here. (Source: Graph provided to parties by federal defendants October 21, 2021; reprinted from PCFFA, et al. vs. Raimondo, U.S. Dist. Court of Northern California, Case No. 1:20-cv-00431, Declaration of Dr. Jonathan A. Rosenfield, Dkt. 325 (12/16/21))

Figure 1 also illustrates neatly why the Project RDEIR/SDEIS’s broad assumption that impacts that are less than 5% of NAA *status quo* can be categorically assumed to be “insignificant” is false, as well as in conflict with NEPA and CEQA standards. In this TMD instance, and in many other instances of “threshold” triggers, once that threshold has been reached, even very small additional impact increases above that threshold “tipping point” can result in major (even irrevocable) changes to a finely balanced ecosystem. In this case, changing ambient water temperatures for cold-adapted salmonid eggs from 53.5°F a mere 0.5 degree upwards to 54.0°F would result in TMD levels rocketing from zero to 30% or more.

## **The RDEIR/SDEIS Must Take into Account the Cumulative Impacts from all other Sacramento River Diversions**

Never in the Project's RDEIR/SDEIS documents does it discuss in any detail the cumulative effects on anadromous salmonids or other aquatic species of all the hundreds of individually small irrigation withdrawals throughout the hydrological system that already diminish Sacramento River flows within the Project area. Cumulative effects analysis is still a requirement of NEPA, and this requirement is being further bolstered by the Biden Administration (see 86 *Fed. Regs.* 55757 *et seq.* (Oct. 7, 2021)). CEQA also independently requires a cumulative effects analysis. Without such a cumulative impacts analysis it is impossible to assess the true potential water diversions resulting from the Project in terms of incremental or additional impacts the Project might create on ESA- or CESA-listed species already (by definition) near extinction.

But consideration of cumulative effects is also crucial in determining whether this Project's additional impacts, on top of already existing cumulative other impacts, results in a "take" occurring or if there is "jeopardy" to ESA-listed species such as the winter-run Chinook, the spring-run Chinook and/or steelhead.

The Federal Endangered Species Act (ESA) [16 U.S.C. §1538(a)(1)] generally prohibits any person, including both private persons and federal agencies, from "taking" any endangered species, such as in this case winter-run Chinook, spring-run Chinook or steelhead. And the term "take" is broadly defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct."

With the ESA, Congress intended endangered species to be afforded the highest of priorities. The ESA's purpose is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531(b).

Under the ESA, conservation means "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." *Id.* § 1532(3).

Section 7(a)(2), 16 U.S.C. § 1536(a)(2), is a critical component of the statutory and regulatory scheme to conserve endangered and threatened species. It requires that every federal agency must determine whether its actions "may affect" any endangered or threatened species. If so, the action agency must formally consult with the Fisheries Service as part of its duty to "insure that [its] action is . . . not likely to jeopardize the continued existence" of that species. *Id.* § 1536(a)(1), (2); 50 C.F.R. § 402.14 (2019).

The term "jeopardize" is defined as an action that "reasonably would be expected . . . to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02 (2019). At the completion of formal consultation, the Fisheries Service will issue a Biological

Opinion that determines if the agency action is likely to jeopardize the species. 16 U.S.C. §1536(b)(3)-(4); 50 C.F.R. § 402.14(h).

In formulating its Biological Opinion, the Fisheries Service must use only “the best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2). The Biological Opinion must also include a summary of the information upon which the opinion is based, an evaluation of the “current status of the listed species,” the “effects of the action,” **and the “cumulative effects.”** 50 C.F.R. § 402.14(g)(2), (g)(3). “Effects of the action” include both direct and indirect effects of an action “that will be added to the environmental baseline.” *Id.* § 402.02. The “environmental baseline” includes “the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.” *Id.*

“Cumulative effects” include “future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area.” *Id.* Thus, in issuing a Biological Opinion, the Fisheries Service must consider ***not just the isolated share of responsibility for impacts to the species traceable to the activity that is the subject of the Biological Opinion, but also the effects of that action when added to all other activities and influences that affect the status of that species.***

Thus for both NEPA and CEQA purposes, as well as for ESA incidental take coverage purpose and a Biological Opinion, a cumulative impacts analysis looking at the combined impacts of all other water diversions in addition to or prior to the Project’s proposed water diversions on ESA-listed or CEQA-listed aquatic species within the Project’s area is necessary.

## **Flow-Related Physical Impacts on ESA-listed Salmonids**

### **1. Redd Dewatering**

The RDEIR/SDEIS on page 11-109 notes that:

“The results for winter-run Chinook salmon show few large changes in redd dewatering between the NAA and Alternatives 1, 2, and 3 (Table 11N-13)..... Changes for most months and water year types under all Alternatives 1, 2, and 3 are less than 2%. Overall, the effects of Alternatives 1, 2, and 3 on winter-run redd dewatering are minor.”

While this may be true *on average*, that average value is merely a mathematical construct, not a real event. In Table 11N-13 there is an outlier high number (highlighted in red) for the July-October period in a Below Normal water year, in which the percentage of redds dewatered under those conditions is projected to be 2%. In an extremely weak population baseline, such as that of the endangered winter-run Chinook salmon stocks, that 2% loss could well be deemed significant. Repeated such loss events could be even more so, especially on top of cumulative losses from other sources.

Similar claims of insignificant impacts from redd dewatering for spring-run Chinook and fall-run Chinook could be made. However, in a related table (11N-14) showing percentage of ESA-listed spring-run Chinook redds likely to be dewatered, there are also data outliers in the Sept-Dec. time frame in Above Normal water years for Alt 1B (2.3% reduction), for Alt 3 (4.5% reduction), and during the Oct.-Jan. time period for Above Normal years under Alt 3 (2.2% reduction), and for Critically Dry water years for Alt 1A (4.5% reduction), Alt 1B (3.2% reduction, Alt 2 (3.2% reduction) and finally Alt 3 (3% reduction).

There are also similar redd dewatering problems listed for fall-run Chinook in Table N-15 of between 2% and 4.1% in some time frames and water years for some Alternatives.

These redd dewatering projects outliers are of some concern – please explain what, if any, mitigation measures you will take (e.g., reducing Project intakes in Critically Dry years during peak egg-laying season for salmonids) to mitigate these potential impacts on redds. And keep in mind also, there is no analysis about cumulative other impacts on river conditions that have already taken a high toll on the redds that are still typically present. Without that information on cumulative impacts, it is not possible to say whether up to an additional 5% loss of redds through dewatering – especially in light of the cumulative losses from all other impacts -- is a “significant” impact on the near-extinct population as a whole or not.

## 2. Spawning Habitat Loss

At page 11-111, after earlier describing the WUA (“weighted usable area”) method used in your analysis, you state:

“Almost all spawning by winter-run occurs in the upper two segments (Segment 6 and 5) of the Sacramento River, between Keswick Dam and Cow Creek, with spawning density (redds per RM) especially high in Segment 6 (Table 11K-1)..... Mean winter-run spawning WUA differs by less than 5% for most months and water year types, but mean WUA in Segment 6 under Alternatives 1, 2, and 3 is 5% to 6% lower than WUA under the NAA in May of Critically Dry Water Years (Table 11K-2).”

But then the draft goes on to say:

“In general, Alternatives 1, 2, and 3 are not expected to substantially affect winter-run spawning WUA.”

This latter assurance is, on its face, contradicted by the fact that at least during May, in Critically Dry water years, RDEIR/SDEIS tables show that up to 6.1 % percent of all the *very small amount of still remaining* winter-run Chinook spawning habitat is expected to be lost. *This impact, even by the Project’s own questionable  $\geq 5\%$  significance level definition, is thus a significant impact.*

There are similar spawning area Segment 5 habitat losses projected for river Segment 5 for spring-run Chinook (see Table 11K-6) for Above Normal water years for Alternative 3 of 9.4% spawning area losses.

These relatively higher spawning area losses are of concern – please explain what, if any, mitigation measures Sites Authority will take (e.g., reducing Project intakes in Critically Dry years during peak egg-laying season for salmonids) to mitigate these significant impacts of spawning area losses.

It is also important to note that there should also be an analysis about cumulative other impacts on river conditions that have already taken a high toll on spawning areas that were once typically present. Without that information on cumulative impacts it is not possible to say whether up to an additional 5% loss of spawning habitat through dewatering is a “significant” impact on the population as a whole or not. Even a 5% loss of what may already be only a very small remnant of once abundant habitat could easily be “significant.” And it would most certainly be a “take” as defined under the ESA!

### **3. Rearing Habitat Loss**

At page 11-111, the RDEIR/SDEIS states:

“These results indicate that Alternative 3 would have a moderate effect on rearing habitat for winter-run fry in the Sacramento River during October of Below Normal Water Years and the other alternatives would have no adverse effects.”

This is an over-simplification, at best. As noted in Table 11K-23 for Segment 6 of the upper Sacramento River (one of the two main areas in which the winter-run still spawn), in September there would be a 5.1% winter-run fry rearing area reduction under Alternative 3, and in October under Below Normal conditions there would be a 7.1% loss under Alternative 3 and a 5.1% loss in Critically Dry years. And remember, these losses are cumulative on top of other major winter-run Chinook spawning and rearing habitat losses over many decades, losses which are in large part the trigger for their current ESA-listing as “endangered.”

There are similar problems for loss of spring-run Chinook fry rearing habitat (see Table 11K-30 through 34) in Sacramento River Segments 4 and 5, and for fall-run Chinook as well under certain conditions (see Table 11K-46, looking at Sacramento River Segment 4).

These rearing habitat area losses projected are of some concern – please explain what, if any, mitigation measures you will take (e.g., reducing Project intakes in Critically Dry years during peak fry rearing season for salmonids) to mitigate these potential additional impacts that will lead to yet more fry rearing-area habitat losses.

There should also be an analysis about cumulative impacts on river conditions that have already taken a high toll on rearing habitat areas that were once typically occupied. Without that information on cumulative impacts, it is not possible to say whether up to an additional 5% loss of spawning habitat through dewatering is a “significant” impact on the population as a whole or not.

### **4. Increases in Juvenile Salmonid Strandings**

There is an unfortunate dearth of analysis of salmonid juvenile stranding risk, as noted in Appendix 11-N (Other Flow-Related Upstream Analysis):

**“11N.3.3 Juvenile Stranding.** A juvenile stranding analysis for salmonids was conducted in the Sacramento River only. No information is available from the Feather and American Rivers for relating changes in flow to numbers of juvenile salmonids stranded. Furthermore, daily flow data are needed to reliably estimate juvenile stranding, and only monthly data are available for these rivers.”<sup>1</sup>

One would then have to assume, as a precautionary measure, that juvenile stranding problems in these other rivers would be comparable to typical stranding problems in the Sacramento. You cannot just assume them away from lack of data, as apparently was done. “Absence of evidence is not evidence of absence.”

And it turns out there are also likely to be serious juvenile stranding problems within the Sacramento River:

“The largest increases in juvenile stranding occur for the April cohort at all three locations [upper Sacramento River: Keswick Dam, Clear Creek, and Battle Creek], ranging as high as 30% in Dry Water Years under Alternative 1A, 1B, and 2 at the Keswick Dam location.” [11-112]

But then, remarkably, this very troubling and clearly significant impact is dismissed out of hand with the following justifications:

“The principal period of stranding vulnerability for the winter-run is for cohorts emerging in July through October, when some large reductions and increases in juvenile stranding occur, but large reductions in juvenile stranding are more frequent than large increases. Therefore, Alternatives 1, 2, and 3 are not expected to affect winter-run juvenile stranding (Table 11N-28 through Table 11N-30).” [Page 11-112]

“The results generally show little evidence of major overall effects of Alternatives 1-3. The redd dewatering and juvenile stranding analyses found many increases in potential negative effects balanced by many reductions in such effects.” [Appendix 11N-53]

This is false, and at best, contradictory reasoning. Stranding events and non-stranding events cannot be traded off against each other “on average” because they are not biologically symmetrical. Once an individual juvenile fish is stranded, even once, *it is dead* – it does not matter one bit if in other places at other earlier or later times, it would not been stranded at all or would have benefited in some way. It only takes a single event (not an “averaged sum”) for a stranding to result in death. *Once a fish is dead, it stays dead. It cannot benefit from later more benign events.*<sup>2</sup> *In short, its death cannot be averaged away.*

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<sup>1</sup> RDEIR/SDEIS, pg. 11N-42.

<sup>2</sup> This is comparable to in-river fish mortality events in response to summer daily hot water temperature spikes. Once a spike occurs at fatal spike temperatures, even once, the fish affected by that spike are dead. It does not matter

Removing large numbers of juvenile fish from the river, including by periodic mortality events like strandings, just means fewer fish to benefit from later improving conditions. Dead fish, from whatever the cause, are in fact removed from the population. Juvenile stranding events with mortalities of as high as 30% of the fish present (see Table 11N-28 through Table 11N-30) thus represent significant mortality events that have serious implications – particularly for already extremely weak and now geographically very limited populations like the endangered winter-run Chinook. Mitigation measures to prevent these mortality events should be incorporated into the Project Plan and into its permits.

## 5. Migration Flow – Survival Relationships

At page 11-119, we find the following correct summary of what is now the best available science with regard to the relationship between higher flows of water through the Delta and out-migrating salmon survival rates:

“Diversions from the Sacramento River to Sites Reservoir under Alternatives 1, 2, and 3 have the potential to affect survival of juveniles salmonids, including winter-run Chinook salmon, based on flow-survival relationships. Several recent analyses provided evidence for positive correlations between Sacramento River flows and survival of Chinook salmon [citations omitted].”

Later on that same page, the RDEIR/SDEIS also states:

“The discussion in Section 11P.2 of Appendix 11P, *Riverine Flow-Survival*, illustrates that the Sites Reservoir diversion criteria generally minimizes diversions during the historical periods of fish movement ... and application of the flow-threshold criteria ... suggests that flow-survival effects on juvenile Chinook salmon (including winter-run Chinook salmon) would be greatly limited by the diversion criteria.”

Project proponents also claim:

“As discussed in Chapter 6, the effects of Alternatives 1A, 1B, 2, and 3 on water temperatures at the Sites Reservoir release site in the Sacramento River would be relatively small with the releases generally tending to cause a slight reduction in water temperature (Tables 6-12a through 6-12d). Therefore, temperature-related effects of Alternatives 1A, 1B, 2, and 3 on winter-run Chinook salmon at the Sacramento River release site would be minimal ... For Alternatives 1A, 1B, 2, and 3, water temperatures at this location would either stay the same or be reduced due to Sites Reservoir releases.”  
[11-120]

Hypothetical reductions in Sacramento water temperatures due to Sites Reservoir timed inputs, of course, depends on two things: (a) whether those inputs are applied directly to the

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thereafter what the “average daily temperature” was for that day. The “average daily temperature” is a mathematical construct while the high temperature spike is a real mortality event.



Sacramento River or not – which according to the description of the Project alternatives in the Executive Summary [Table ES-1 on pg. ES-8] could *only be achieved under Alternative 2*, and; (b) the initial temperature of the water originating at the Sites Reservoir at the upper end of the pipeline to the river.

Left to itself the Sites Reservoir is simply going to absorb sunlight, especially during summer months, and heat up, collecting and spreading that solar energy broadly through its increased surface area like any other lake. Unless the reservoir becomes temperature stratified, it will become just like a bathtub of warm water – water that might well be warmer (not cooler) than the Sacramento River at the time of inflow.

The RDEIR/SDEIS should explain in more detail any water temperature reduction measures, if any, that are planned for keeping the water temperatures of water delivered from Sites Reservoir to the Sacramento River as low-temperature as possible. For instance, is the reservoir expected to stratify in temperature, and if so, will there be temperature control devices sufficient to take water *only* from the lower-temperature level of that stratification? What will the average depth of the reservoir be? Will it be covered in some way – such as naturally with the introduction of floating water plants, or with floating solar collectors as some have proposed – in order to reduce initial water temperatures?

What is the initial water temperature (i.e., or water coming from the reservoir) that is assumed and built into Table 11-15? An overly-optimistic assessment of the water temperature effects on the slack-water, completely exposed reservoir from (particularly summertime) solar heating would lead to nonsensical conclusions.

**Inadequate Mitigation Measures FISH-2.1 and FISH-3: Wilkins Slough Flow Protection Criteria:** Problems with this mitigation as the Project’s primary fish impacts mitigation measure is that this measure would be in place, by its own terms [11-131] *only* during March through May of each year. However, salmonid species like the ESA-listed winter-run and spring-run Chinook, and the non-listed but seriously depressed fall-run Chinook, are well known to be present and migrating through the system at other times of the year, during which times (according to your own analysis) these stocks would be more severely impacted. See for instance RDEIR/SDEIS at 11-130 to 11-131 that states:

“Mitigation Measure FISH-2.1 will limit the potential for negative flow-survival effects to winter-run Chinook salmon during their dispersal to rearing habitat and/or migration downstream toward the Delta.”

However, as the RDEIR/SDEIS admits, winter-run Chinook salmon migrate past the diversion points for Sites Reservoir (at the Red Bluff Diversion Dam and at Hamilton City) and past Wilkins Slough well before the month of March, which is when the protections provided by FISH-2.1 would only begin, and they are generally migrating out of the Delta between December and May. See RDEIR/SDEIS at 11-79 to 11-80 (noting that half of the annual migration of juvenile winter-run Chinook salmon have passed the Red Bluff Diversion Dam before late October and 90 percent before January 1; noting that winter-run Chinook salmon are caught in Knights Landing rotary screw traps between mid-September to mid-March, with the bulk of the

run (90 percent) generally passing between early October to mid-March; noting that winter-run Chinook salmon are generally caught in the Chipps Island trawls between December 1 and May); *see id.* at 11-124 (“the main period of juvenile winter-run Chinook salmon occurrence in the Delta (i.e., December–April”). Indeed, most migrating juvenile Chinook salmon, including nearly all juveniles of the winter-run and late-fall run, will not be protected by this bypass flow requirement as most of these fish would have migrated downstream of Knights Landing before March. *See* RDEIR/SDEIS at 11-120 and citations therein.

In short, mitigation measure FISH-2.1 will limit pumping that reduces flows in the Sacramento River below 10,700 cfs only *after* most winter-run Chinook salmon have already migrated downstream to the Delta, and as a result this mitigation measure wholly fails to protect juvenile winter-run Chinook salmon from the harmful effects of the proposed Project and alternatives as they migrate down the Sacramento River. The RDEIR/SDEIS’s conclusion that the proposed Project and alternatives will not cause significant environmental impacts to winter-run Chinook salmon is simply unsupported by its own analysis, and is thus arbitrary and capricious, and the document must be revised to include adequate mitigation measures that apply when winter-run Chinook salmon are actually migrating down the Sacramento River.

Similar timing problems for related flow bypass measures also invalidate mitigation measures proposed to protect spring-run (FISH-3) and fall-run Chinook, as well. Since all these species are present in the river outside the very limited March through May mitigation period, these essentially unmitigated additional impacts on already severely depressed salmonid stocks could not be “insignificant” in any sense of the word.

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**COMMENTS ON SITES REVISED DRAFT ENVIRONMENTAL IMPACT  
REPORT/SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT  
REGARDING THE TRINITY RIVER**

The modeling for Sites RDEIR/SDEIS purports to show that the Project would not harm the Trinity River because it shows no changes in the current pattern of exports, river releases and storage for the Trinity River Division (TRD) of the Central Valley Project (CVP). However, since no operating plan for Sites has been released along with the RDEIR/SDEIS, it is impossible to ascertain if real time operations would impact the Trinity River.

Furthermore, the Trinity River does not have temperature protection incorporated into the Bureau of Reclamation’s (BOR) state water permits. Until the State Water Resources Control Board (SWRCB) updates BOR’s Trinity River water permits, objections to Sites Reservoir are valid because impacts can and will occur.

The Sites Project Authority claims that it has no authority to change TRD operations, which is true. However, it cannot say the same for one of its member agencies that controls the TRD -- the Bureau of Reclamation (BOR). Given that BOR owns, operates, and has full control of the TRD and will likely have a percentage ownership in Sites Reservoir, it’s very clear that construction and operation of Sites could and likely would negatively impact the Trinity River.

For instance, examination of the modeling for the 2017 Sites DEIR/DEIS found that during drier years, BOR would export more Trinity water to the Sacramento River in spring and late winter, while concurrently reducing Trinity exports during critical fall spawning months when Lewiston Reservoir warms substantially. The modeling, if done adequately, should also have shown increased temperatures for spawning salmon in the Trinity River. This so-called “modeling error” has been corrected for the current RDEIR/SDEIS. However, without an operations plan, the modeling is meaningless, but the previous modeling exercise gives a clear example of how Sites could negatively impact the Trinity River through BOR operations.

The issue is: “How can the Sites Project Authority be held responsible for BOR’s actions related to the operation of Sites Reservoir?” There is a way to ensure that the Trinity River is not harmed by BOR’s partial ownership of Sites, and that is through amendment of Reclamation’s Trinity River water permits. The legislative and legal history of the TRD of the CVP is rife with requirements to “do no harm” to the Trinity River and its fishery. The proposed Sites Reservoir clarifies the need for BOR to have its state water permits amended to not harm the Trinity River because under the current regulatory scenario, harm to the Trinity River is inevitable.

### **What Constitutes “Harm” to the Trinity River?**

State Water Resources Control Board Water Right Order 90-5<sup>3</sup> partly identifies what is “harm” to the Trinity River as it relates to the export of Trinity water for temperature control in the Sacramento River:

*“IT IS FURTHER ORDERED that Permits 11966, 11967, 11968, 11969, 11970, 11971, 11973, 12364, and 12365 and License 9957, on Applications 5627, 5628, 15374, 15375, 15376, 16767, 17374, 17376, 17375, and 15424, be amended to add a condition as follows:*

*“Permittee shall not operate its Trinity River Division for water temperature control on the Sacramento River in such a manner as to adversely affect salmonid spawning and egg incubation in the Trinity River. Adverse effects shall be deemed to occur when average daily water temperature exceeds 56°F at the Douglas City Bridge between September 15 and October 1, or at the confluence of the North Fork Trinity River between October 1 and December 31 due to factors which are*

*(a) controllable by permittee and*

*(b) are a result of modification of Trinity River operations for temperature control on the Sacramento River.*

*“If the temperatures in the Trinity River exceed 56°F at the specified locations during the specified periods, Permittee shall immediately file with the Chief of the Division of Water Rights a report containing project operational data sufficient to demonstrate that the*

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<sup>3</sup> See [https://www.waterboards.ca.gov/waterrights/board\\_decisions/adopted\\_orders/orders/1990/wro90-05.pdf](https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1990/wro90-05.pdf)

*exceedance was not due to modifications of Trinity River operations for water temperature control on the Sacramento River. If, within fifteen days, the Chief of the Division of Water Rights does not advise Permittee that it is violating this condition of its water right, Permittee shall be deemed not to have caused the exceedance in order to control temperature on the Sacramento River.*

*“This term is not to be construed as interfering with the U. S. Department of Interior Andrus Decision dated January 14, 1981, relative to Trinity River releases.”*

The Trinity River protections found in WR 90-5 do not provide any protection from other projects or purposes such as diversions to Sites Reservoir, hydropower production or water supply. Water Right Order 90-5 only limits BOR’s export of Trinity River to do no harm to Trinity River salmon because of operations for temperature control on the Sacramento River.

A more comprehensive definition of harm to the Trinity River can be found in the North Coast Regional Water Quality Control Board’s “Water Quality Control Plan for the North Coast Region” (North Coast Basin Plan).<sup>4</sup> While the North Coast Basin Plan Trinity River 56° temperature objective is included in WR Order 90-5, the 60°F July 1- September 15 temperature objective is not. BOR has made it very clear that because the 60°F objective is not included in WR Order 90-5, that BOR is not required to meet it and clearly does not meet it in many years such as 2021. Therefore, Water Right Order 90-5 is not adequately protective of Trinity River salmon. In this case, the 60°F temperature objective is intended to protect holding adult spring Chinook salmon prior to spawning. Trinity River spring Chinook were recently listed as threatened under the California Endangered Species Act.

The lack of full protection for the Trinity River from diversions for various uses other than temperature control on the Sacramento River leaves the Sites Project Authority vulnerable to criticism that the Project will harm the Trinity River and the Lower Klamath River below the Trinity confluence because BOR will have the ability to move Trinity water into Sites. How can this be fully mitigated? The answer lies with the history of Water Right Order 90-5 dating back to 1989 and the need for promises to be kept, not broken.

In 1989, State Water Resources Control Board Water Quality Order 89-18<sup>5</sup> directed that meeting Central Valley Basin Plan temperature objectives for the Sacramento River would be met through the water rights process, not Waste Discharge Requirements. It directed that the water right hearing for Water Right Order 90-5 be initiated to amend BOR’s CVP water rights to include temperature protection for Sacramento River salmon. The County of Trinity participated

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<sup>4</sup> “Water Quality Control Plan for the North Coast Region” Footnote 5, Table 3-1, page 3-8.00: Accessed at [http://www.waterboards.ca.gov/northcoast/water\\_issues/programs/basin\\_plan/083105-bp/04\\_water\\_quality\\_objectives.pdf](http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105-bp/04_water_quality_objectives.pdf)

Daily Average Not to Exceed	Period	River Reach
60°F	July 1- Sept 15	Lewiston to Douglas City Bridge
56°F	Sept 15-Oct 1	Lewiston to Douglas City Bridge
56°F	Oct 1- Dec 31	Lewiston to North Fork Confluence

<sup>5</sup> See [https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/1989/wq1989\\_18.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/1989/wq1989_18.pdf)

in the hearing, concerned that protections for Sacramento salmon might harm the Trinity River. As a result, the SWRCB made the following finding (page 17):

*“The State Board should conduct water right proceedings to consider whether the Bureau's permits should be modified to establish temperature limitations or other conditions to assure adequate water quality for protection of the fishery in the Trinity River.”*

The SWRCB directed that a water right hearing on Trinity River temperatures be held (page 18):

*“IT IS FURTHER ORDERED that the Division of Water Rights shall initiate proceedings for the State Board to consider modifying the Bureau's permits for the Trinity River Unit of the Central Valley Project to set appropriate conditions to maintain water quality in the Trinity River. The State Board may review Trinity River water quality in the same water rights proceedings as it reviews upper Sacramento River water quality, or in subsequent proceedings to the extent that the issues may properly be considered separately.”*

The commitment to protect the Trinity River water quality in Water Quality Order 89-18 was also carried into Water Right Order 90-5 (page 31):

*“We have already announced our intention to conduct a water right proceeding to consider whether the Bureau's Trinity River water rights should be modified to establish temperature limitations and other controls on water quality to protect the fishery in the Trinity River. See Order No. WQ 89-18. The proceedings on the Bureau's Trinity River water rights are expected to be commenced late this year. Our hearing record -for this decision is not adequate to set fishery protections for the Trinity River.”*

Unfortunately, the water right hearing to consider a full range of temperature protection measures for amendment of BOR's water permits has yet to be scheduled **thirty-three years later**. The BOR has expressed opposition to imposing any additional terms and conditions on its Trinity River water rights, calling it “unnecessary and ill-advised.”

BOR's objection to conforming its Trinity River water permits to the North Coast Basin Plan water quality objectives stands as a roadblock in assuring that Sites Reservoir will not harm the Trinity River's fishery resources. If BOR opposes updating its Trinity River water permits, objections to Sites are valid and will be the basis of water right protests.

A mitigation measure must therefore be added to the approvals for the Record of Decision, Notice of Determination, water rights and operating plan for the proposed Sites Reservoir as follows:

*“Sites Reservoir operations by the Sites Project Authority and its members do not cause harm to the Trinity River, as defined by violation the Trinity River Temperature Objectives contained in the ‘Water Quality Control Plan for the North Coast Region’<sup>6</sup>. Construction*

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<sup>6</sup> Ibid

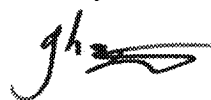
PCFFA-IFR Supplemental Comments  
Sites Reservoir Project  
27 January 2022

*permits shall not be issued, and construction shall not commence until the State Water Resources Control Board amends the Bureau of Reclamation's Trinity River Water Permits to implement North Coast Basin Plan temperature objectives for the Trinity River."*

\*\*\*\*\*

This concludes the Supplemental Comments. Thanks for the opportunity to comment, and please place these comments in the Administrative Record.

Sincerely,

A handwritten signature in black ink, appearing to read 'gh' followed by a stylized flourish.

Glen H. Spain  
NW Regional Director  
PCFFA/IFR

PCFFA-IFR Joint Sites Comments (01-28-22)

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/27/2022 1:45:11 PM  
**To:** Glen Spain [fish1ifr@aol.com]; vking@usbr.gov; EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** RE: Sites Project PCFFA/IFR Supplemental Comments

Thanks Glen. Email received and I was able to open the file.

We appreciate your comments.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Glen Spain <fish1ifr@aol.com>  
**Sent:** Thursday, January 27, 2022 12:44 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; vking@usbr.gov; EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Subject:** Sites Project PCFFA/IFR Supplemental Comments

Ms. Alicia Forsythe  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

27 January, 2022

Ms. Vanessa King  
Bureau of Reclamation  
2800 Cottage Way, Room W-2830  
Sacramento, CA 95825

*Submitted electronically to:* [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org), [vking@usbr.gov](mailto:vking@usbr.gov), [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

Re: Supplemental Comments on the RDEIR/SDEIS for the Sites Reservoir Project

Dear Ms. Forsythe and Ms. King:

These are PCFFA/IFR Supplemental Comments, to add to comments from NRDC, *et al.* that we have also joined in submitting and will be submitted tomorrow. Please add these to the Administrative Record in this proceeding. If there is any problem downloading this document, please contact me immediately. Thanks for the opportunity to comment.

=====  
Glen H. Spain, J.D., NW Regional Director

Pacific Coast Federation of Fishermen's Associations (PCFFA)  
and the Institute for Fisheries Resources (IFR)  
PO Box 11170, Eugene OR 97440-3370  
Phone: 541-689-2000 Email: [fish1ifr@aol.com](mailto:fish1ifr@aol.com)

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**From:** Ann Newton [anewton@katzandassociates.com]  
**Sent:** 1/27/2022 2:03:18 PM  
**To:** Kevin Spesert [kspesert@sitesproject.org]  
**CC:** Sara M. Katz [skatz@katzandassociates.com]  
**Subject:** Updated Sites Messaging Doc  
**Attachments:** DRAFT\_Sites Messaging\_ Updated\_27Jan2022.docx

Kevin,

Attached please find a restructured and edited messaging document. There were a few items that Jerry had requested that I was able to incorporate, and several others that I'll need more information on in order to appropriately message. I'm bulleting them below – can you provide me some context on these or should I reach out directly to Ali?

- Enhanced diversion restrictions meets the ITP standard – not just mitigated, but zero impact.
- State Board method proves river can fill Sites
- Support piloting Sites environmental water manager and dedicate irrevocable environment capacity
- Local tribal cooperation exists (we need to ask these groups to jointly message with us on tribal aspects)
- Quick and dirty synopsis on EIR review comments – no redirected impacts.

Looking forward to your feedback.

Ann



**Ann Newton**

Director, Los Angeles

☎ 310.774.7639

San Diego · Los Angeles · San Francisco

# SITES RESERVOIR MESSAGE PLATFORM

## January 2022 Update

### TOPIC: WATER FOR DRY YEARS

Sites Reservoir is a unique multi-benefit water storage project that provides a resilient and reliable supply of water for California's environment, communities, and farms during dry periods.

- Sites Reservoir captures and stores water from the Sacramento River during **high flows**—after all other **water rights and regulatory requirements are met**— and is made available to California's environment, communities, and farms when it's most needed – especially during times of drought.
- If Sites Reservoir had been in place prior to 2021, **California would have had an additional 1 million acre-feet of water available** to the environment, communities and farms during this drought.
- Sites Reservoir provides dedicated water specifically for the environment – creating a **flexible and reliable water supply**.

Sites Reservoir is a 21st Century approach to water storage that prepares California for climate change, designed to work best under the most challenging climate change scenarios.

- California's current water management system was simply not designed to accommodate our future climate realities– **but Sites Reservoir is**. Modeling shows that **Sites performs better under the most challenging climate change conditions**.
- Sites Reservoir functions as an **“insurance policy”** for future California droughts. Current climate projections indicate the majority of our future precipitation will come in the form of rain and not snow. **Sites Reservoir is specifically designed** to capture this rain and store it for use during dry periods.
- When constructed, Sites Reservoir will be **integrated** with the operations of both the State Water Project (SWP) and Central Valley Project (CVP), which will provide greater flexibility, reliability, and resiliency of our current statewide water management system.
- Sites Reservoir is just part of the solution – we can, are and must utilize all of the tools in our toolbox— **water recycling, conservation, desalination, groundwater replenishment and more water storage**.

## TOPIC: BROAD PARTICIPATION & BENEFITS

**Public water agencies, irrigation districts, the federal government, and the State of California have come together to advance Sites Reservoir.**

- The Sites Project Authority – which is leading the planning, construction and future operations of Sites Reservoir—was **formed under California law as a Joint Powers Authority** in 2010, and functions as a **public agency** made up of several public water agencies, public irrigation districts, counties, and cities across the Sacramento Valley.
- Sites Reservoir is funded **100% by local, state, and federal public dollars**.
- Participation in Sites Reservoir is **broad and diverse**— including the Bureau of Reclamation, the State of California, public irrigation districts in the Sacramento and San Joaquin Valleys, as well as urban areas in Southern California and the Bay Area.
- These **participants represent millions of people, thousands of acres of food-producing farmland, and the environmental resource agencies** that have stewardship over rivers, fish, and habitat within the watershed.

**The benefits Sites Reservoir delivers are as diverse as our participants.**

- Sites Reservoir will provide significant **regional flood protection benefits** for the Sacramento Valley by storing flood flows that would normally impact the communities of Maxwell and Williams - protecting homes, businesses, and farms.
- Sites Reservoir will benefit the local and regional economy by **creating hundreds of construction-related jobs** during each year of the construction period, and long-term jobs related to operations and recreation.
- Sites Reservoir will provide additional recreational opportunities and contribute to the overall regional economy of the Sacramento Valley.
- Sites Reservoir is a **beneficiary pays** project, which means that the benefits of the project go to those paying. Each participant—including the State of California through its investment in Sites Reservoir under Proposition 1—has **full control over their portion of the storage space** and their proportionate share of the water diverted into Sites Reservoir.

## TOPIC: ENVIRONMENTAL BENEFITS

### Sites Reservoir is designed to be far more environmentally friendly than traditional dams.

- It is an off-stream facility that **does not dam a major river system** and would not block fish migration or spawning.
- Intakes being used for diverting water into Sites Reservoir include **state-of-the-art fish screens** that are proven to be highly effective at protecting fish.
- Sites Reservoir **does not threaten salmon** or other fish species in the Sacramento River. Sites Reservoir diversions would be **conducted under highly protective operating and permit conditions** that establish when water can be diverted.
- Numerous, substantial changes have been made to the Sites Reservoir proposal over the past several years to **ensure the project prioritizes environmental benefits and health including our State fisheries, while preserving river water supplies.**

### Sites Reservoir offers many environmental benefits to support healthy fisheries and waterways.

- The State of California – through its investment in Sites Reservoir under Proposition 1 – is creating an **environmental water asset for California** that will provide water and dedicated storage for current and future environmental needs.
- Federal participation through the Bureau of Reclamation doubles the environmental benefit with more water for salmon.
- Sites Reservoir brings a **net benefit to Trinity River** by preserving more water in Shasta. Legal protections ensure this benefit exists.
- The State’s **environmental water asset will be managed by state resources agency managers** who will decide how and when this water would be used—creating an **environmental water management tool for the state that does not currently exist.**
- A significant portion of Sites Reservoir’s annual water supplies will be **dedicated** to environmental uses to help improve conditions for **Delta smelt**; help preserve **cold-water pool** in Shasta Lake later into the summer months to support **salmon** development, spawning, and rearing; and improve **Pacific Flyway habitat** for migratory birds and other native species.
- As currently proposed, Sites Reservoir includes **more cold water for salmon in the driest years** when it is needed most and provides an overall net benefit to Sacramento River salmon, Delta smelt, and the Sacramento-San Joaquin Delta estuary.

## TOPIC: OPERATIONS

### Integrating Sites Reservoir into the state's existing water management system will help to restore flexibility, reliability and resiliency to our statewide water supply

- Sites Reservoir is uniquely located in relation to other major components of the state and federal water projects like Shasta Lake, Lake Oroville, and Folsom Lake. Sites is **complementary** to these existing crucial elements of statewide water management and could act to extend the functions they serve by creating flexibility to adapt to changing river and Delta management conditions.
- Sites Reservoir would **not compete for the water resources** stored in these state and federal facilities but would increase the total amount of managed water in storage.
- **Participating agencies own their storage accounts in the Sites Reservoir.** This ownership includes storage space and a share of the project's diversions from the Sacramento River.
- Sites Reservoir could **contribute** to the increased fresh-water flow into the Delta during drier periods to assist with salinity management of this critical estuary.
- No other storage project currently under consideration in California can positively influence the **operational efficiencies of our existing statewide water system** like Sites Reservoir.

## TOPIC: KEY ADVANCEMENTS

### Sites Reservoir met several major milestones in 2021.

- Sites Reservoir met **several key milestones in 2021** that we are building on this year.
  - California Water Commission issued its feasibility determination, paving the way for continued State investment and project eligibility for additional funding under Proposition 1.
  - Sites Reservoir received additional funding through Proposition 1 and federal investments.
  - Sites Project Authority and the Bureau of Reclamation released the draft Environmental Impact Report/Draft Environmental Impact Statement for public comment.
- The achievements met in 2021 will take this project from the planning stage to final design and construction.

### We are on track to deliver this vital project for California within this decade.

- Based on the substantial progress made to date, we are on track to begin construction in 2024.
- The milestones we are building towards in 2022 will bring us that much closer to the start of construction.
  - Sites Project Authority will be issuing the final Environmental Impact Report in fall of 2022.
  - Key regulatory and permitting efforts are underway as we prepare to submit the Sites Reservoir water rights application and other key permits to the State of California.

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**From:** Frank Egger [fegger@pacbell.net]  
**Sent:** 1/27/2022 2:39:51 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Comments: Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS)

January 27, 2022

To: [Comments@sitesproject.org](mailto:Comments@sitesproject.org) for the Sites Project Authority and U.S. Bureau of Reclamation

Re: Sites Reservoir proposal, Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS)

From: North Coast Rivers Alliance

Contact Info: Frank Egger, president, North Coast Rivers Alliance, 13 Meadow Way, Fairfax, CA 94930 [fegger@pacbell.net](mailto:fegger@pacbell.net), 415.456.6356

The insufficiency of the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement is startling. The RDEIR/SDEIS relies on "out of date" Data on Delta Smelt, does not recognize Conflicts of Interest, is silent on conflicts with State Law (raising of Shasta Dam), ignores the fact that historic snow levels are dropping, includes no information of the current long term California Drought, is silent on climate change, does not mention the fact that California has been selling paper water on an overdrafted water resource system for decades, states Sites would be filled with surplus/excess Sacramento River water when there is no excess or surplus water in the River, offers no solutions to preserve, protect and restore Central Valley salmonid runs currently teetering on extinction, includes no recommendations for fish passage, either conventional or volitional, on dams that have blocked spawning & rearing rivers and streams for listed salmonid species like Shasta, Trinity, Oroville and New Bullards Bar, allows Sites to encroach on habitat for federally protected

Golden Eagles, places the Sacramento River and Delta water systems in extended crisis mode and will drive their Coho & Chinook Salmon, steelhead, Sturgeon and Delta Smelt fisheries into extinction and then the RDEIR/SDEIS completely ignores all Tribal rights.

Sites threatens the wild and scenic Eel and Black Butte Rivers:

According to California water supply history as reported by Friends of the Eel River: "Three months after California voters approved the State Water Project, in 1961, Department of Water Resources planners wrote a blueprint for the state's water future called State Water Bulletin 76. The bulletin envisioned capturing the middle fork Eel River's water and shunting it through more than 30 miles of ditches and tunnels to the proposed Paskenta-Newville Reservoir in Glenn County. Construction of the latter reservoir was a crucial engineering component of the plan to divert the Eel into the Sacramento, then onto the California Aqueduct."

The location of the proposed Sites Reservoir and lack of water to fill it will put pressure on reviving the Dam on the Eel River at Dos Rios that will flood Round Valley and Tribal grounds and require the construction of the tunnel originally proposed to move water from two wild and scenic rivers, the Eel and Black Butte, to now Sites which is only 17 miles southeast of the previously proposed Paskenta-Newville Project that was to feed the Sacramento River and then on to the California State Water Project. It is clear that Sites Reservoir is the reincarnation of the Paskenta-Newville Reservoir Project

From UC Davis: "Despite the rain and snow that closed out 2021, California could be entering a third drought year as weeks of dry weather open the new year. The State has experienced drought in 15 of the last 20 years, according to UC Davis. Experts say California is in the grip of a "megadrought." "It looks like, with a warming climate and climate change, it's going to become more like this," said Jay Lund, professor of civil and environmental engineering at UC Davis and director of the Center for Watershed



Sciences. ..." According to a study from the University of California, Davis, "appropriative water rights filed for consumptive uses are approximately five times greater than estimated surface water withdrawals." What this restrained academic language reveals is a management crisis: no matter how much it rains and snows in California, we will always have a chronic water shortage because of over-allocation.

Why is this happening? As the [UC Davis study](#) found, the state has promised five times more water than could be delivered. Accelerating climate change only compounds the problem: Virtually all reputable computer models confirm California will receive less snow in coming decades, meaning our water deficit will only grow.

Sites Reservoir, if ever constructed, will reduce flows in the Sacramento River and Delta, drown nearly 14,000 acres of existing oak woodlands, grasslands, wetlands, and agricultural land in the western Sacramento Valley. Impacts associated with the reservoir footprint would harm the federally protected golden eagle, a host of other sensitive wildlife species, several rare plants and significant historical and cultural Tribal resources.

One example of out of date Data and a Conflict of Interest: According to the RDEIR/SDEIS, Attachment 6A-2 Excerpts from "Water Supply Impact Analysis of December 2008 Delta Smelt Biological Opinion," by Paul Hutton, Metropolitan Water District of Southern California, February 2009". Using 13+ year old Data for the Delta Smelt Biological Opinion and having it written by an agency, the MET, that will benefit from the Sites says it all.

Next the RDEIR/SDEIS makes the case for raising Shasta Dam 18 & 1/2 feet even though it is in direct conflict with California State Law, and, water temperature-related impacts are now year round, not just July through November:

"Ecosystem Enhancement Storage Account (EESA)  
Actions/Operation EESA-1: Shasta Coldwater Pool (All alternatives)  
Improve the reliability of cold-water pool storage in Shasta Lake to increase operational flexibility to provide suitable water temperatures in the Sacramento River. This action would operationally translate into the increase of Shasta Lake May storage levels, and improved retention of cold-water pool storage, with particular emphasis on Below Normal, Dry, and Critical water year types. DP-1 BN, D, C + ++ ++ ++ ++ EESA-2: Sacramento River Flows for Temperature Control (All alternatives) Provide releases from Shasta Dam of appropriate water temperatures, and subsequently from Keswick Dam, to improve water temperatures year-round at levels suitable for all species and life stages of anadromous salmonids in the Sacramento River between Keswick Dam and Red Bluff Pumping Plant, with particular emphasis on the months of highest potential water temperature-related impacts (i.e., July through November) during Below Normal, Dry, and Critical water year types".

Then the RDEIR/SDEIS continues to make the out of date and incorrect claims regarding excess water in the Sacramento River, there is none. "The proposed Sites Reservoir would be filled through the diversion of excess Sacramento River water that originates from unregulated tributaries to the Sacramento River downstream from Keswick Dam. These unregulated tributaries contribute over 3 MAF of flow to the Sacramento River on an average annual basis. Therefore, less than 1 percent of diversions to Sites Reservoir are assumed to be provided by flood releases or spills that flow through Lake Shasta. Sacramento River water would be diverted at the existing Hamilton City and Red Bluff diversion locations, as well as via a new Delevan intake and pipeline for Alternative A. Excess flows are defined as river flows, in addition to those required to meet the following: • Senior downstream water

rights, existing CVP and SWP and other water rights diversions including SWP Article 21 (interruptible supply), and other more senior excess flow priorities (diversions associated with Freeport Regional Water Project and existing Los Vaqueros Reservoir) • Existing regulatory requirements including State Water Resources Control Board D-1641, CVPIA 3406(b)(2), the 2008 USFWS BO, and the 2009 NMFS BO and other instream flow requirements • Flow conditions needed to maintain and protect anadromous fish survival and Delta water quality Sites Reservoir Diversion Bypass Requirements Excess Sacramento River flow diversions to Sites Reservoir would only take place when flow at critical locations along the river is higher than the bypass flow requirements. Several existing and additional proposed bypass flow criteria were assumed at specified locations, as part of the Project. These flow criteria are designed to make certain only excess water would be diverted into Sites Reservoir to maintain and protect existing downstream water uses. Excess Sacramento River flow diversions to Sites Reservoir would only take place when flow monitoring indicates that bypass flows are present in the river due to storm event flows. Several existing and additional proposed bypass flow criteria were assumed at specified locations."

The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites:

**ES.5.1 Identified Significant and Unavoidable Impacts** As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts.

**ES.5.1.1 Terrestrial Biological Resources (Golden Eagle)**  
Construction and filling of the proposed Sites Reservoir Inundation Area, as well as construction of the proposed Recreation Areas, would result in the permanent loss of foraging and nesting habitat for the golden eagle. Although implementation of compensatory

mitigation including land preservation and/or acquisition is proposed, these measures would not reduce this loss of habitat to less-than-significant levels.

ES.5.1.2 Paleontological Resources Construction of the proposed Project facilities could affect paleontological resources. Mitigation measures would reduce the impacts, but not to a less-than-significant level if such resources are encountered during construction.

ES.5.1.3 Cultural Resources (Historical and Tribal Resources, Human Remains) Construction of the proposed Project facilities would affect built historical and tribal resources, as well as human remains associated with a designated cemetery and adjacent areas. If these resources and/or areas are determined to be eligible for listing in the California Register of Historical Resources or National Register of Historic Places, mitigation measures would not reduce the impact to less-than-significant levels.

ES.5.1.4 Land Use (Community of Sites and Existing Land Uses) Construction and filling of the proposed Sites Reservoir Inundation Area would result in the physical division and loss of the community of Sites, resulting in a significant and unavoidable impact. Construction of the proposed Project facilities would result in conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use, resulting in significant and unavoidable impacts. Implementation of mitigation measures would not reduce these impacts to less-than significant levels.

ES.5.1.5 Air Quality (PM10, ROG, and NOx) Construction activities associated with all proposed Primary Study Area Project facilities, as well as activities (such as use of roads, recreation, electricity generation and consumption, and sediment dredging) associated with the long-term operation and maintenance of the Project, would

result in significant and unavoidable emissions of particulate matter less than 10 microns in diameter (PM10), reactive organic gas (ROG), and nitrogen oxide (NOx). Executive Summary SITES RESERVOIR PROJECT DRAFT EIR/EIS ES-20

ES.5.1.6 Climate Change and Greenhouse Gas Emissions The greenhouse gas (GHG) emissions estimated for construction, operation, and maintenance of the Project when compared to applicable county standards would contribute to a cumulatively considerable effect that would be significant and unavoidable.

ES.5.2 is beyond common sense. ES.5.2 Growth-inducing Impacts: Implementation of the Project would improve water supply reliability for agricultural, urban, and environmental uses; provide more options for water management; increase recreational opportunities; and increase temporary and permanent employment opportunities. Although it is not anticipated that the water made available from the Project would result in a direct increase in population or employment, the potential exists for the quantity of water made available by the Project to result in secondary effects of growth consistent with local general plans and regional growth projections in an agency's respective service area.

ES.5.3 Cumulative Impacts Projects considered in the cumulative impacts analysis included other relevant multi-region projects and actions; water supply, water quality, and hydropower projects and actions in the vicinity of the proposed Project facilities and/or potentially affected by CVP and SWP operations; and ecosystem improvement projects and actions in the vicinity of the proposed Project facilities and/or potentially affected by CVP and SWP operations (refer to Chapter 35 Cumulative Impacts for the names and descriptions of each of project considered).

Then the RDEIR/SDEIS makes an unbelievable claim:

"Implementation of the Project would not result in the cumulatively considerable incremental contribution to an overall significant cumulative adverse effect."

As a result of the insufficient RDEIR/SDEIS for Sites Reservoir, the Sites Project Authority and Bureau of Reclamation have two choices, 1. to order the withdrawal of the Sites RDEIR/SDEIS because it fails to fully address the harmful impacts on the Sacramento River and the Delta and order a new revision to better address critical issues and re-release for additional public review and comments, or 2., **to cut their financial losses and outright reject and abandon the Sites Reservoir Project. The second option is the logical solution.**

Thank you, Frank Egger for the North Coast Rivers Alliance.

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/27/2022 2:47:55 PM  
**To:** Rob Kunde [rkunde@wrmwsd.com]; Angelica Martin [amartin@tejonranch.com]  
**CC:** Angela Bezzone [bezzone@mbkengineers.com]  
**Subject:** RE: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

Hi Rob and Angelica – My apologies for the delay in getting back to you. I have been out sick on and off this past week.

A call would be great. I think we can incorporate in a Pastoria Creek Point of Rediversion without much effort. But let's chat.

Below are some dates/times that work for me. Let me know what works best for you and I can get a invite out.

2/1 – anytime other than 3 to 3:30 PM  
2/2 – anytime  
2/3 – 9 to 10 AM; 11 am to 1 PM  
2/4 – any time after noon

Ali

(Angela, let me know what works for you also.)

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Kunde <rkunde@wrmwsd.com>  
**Sent:** Monday, January 17, 2022 2:07 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** Angela Bezzone <bezzone@mbkengineers.com>; Angelica Martin <amartin@tejonranch.com>  
**Subject:** Re: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

Ali and Angela:

I spoke to Angelica Martin today:

1. They will not need any Points of Rediversion for their AVEK/Sites deliveries.
2. They are interested in including a Pastoria Creek Point of Rediversion within Wheeler Ridge, but need to understand what the institutional issues would be related to that. For example, would any EIR work be required, by Sites, the District or Tejon Ranch, to include it in the Water Rights Application?

Angelica and I request a followup call to discuss item 2. above in more detail. I am not available this week but am available the week of January 24.

**Robert J. Kunde, P.E.**

Retired Annuitant  
Wheeler Ridge-Maricopa Water Storage District

cell: 661-345-3719 email: [rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)

---

**From:** Rob Kunde <[rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)>  
**Sent:** Thursday, January 6, 2022 12:06 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** Angela Bezzone <[bezzone@mbkengineers.com](mailto:bezzone@mbkengineers.com)>; Angelica Martin <[amartin@tejonranch.com](mailto:amartin@tejonranch.com)>  
**Subject:** Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

Ali and Angela:

I left a voice message with Angelica Martin of Tejon Ranch (661-381-3492) regarding the potential for use of Pastoria Creek for future conveyance of Sites water. Angelica is Vice President of Water Resources for Tejon. She would also be the contact person to discuss whether Tejon needs any Points of Rediversion within the Antelope Valley East Kern Water Agency. It is my understanding that Tejon Ranch is the only Sites Investor in AVEK. Angelica's email address is included in the cc: above.

Question: Do the Points of Rediversion need to be identified with specific Reservoir Project Committee participants in the Water Rights Application? If, we may need to "tag" some of the Kern River PORD with AVEK as well. Further discussion with Ms Martin is needed.

Angelica: Should Tejon ever want to use the Kern Water Bank or Pioneer Projects to store Sites water, I believe Nick Torres and I have identified the necessary Points of Rediversion to allow your Sites/AVEK water to be so stored.

**Robert J. Kunde, P.E.**

Retired Annuitant  
Wheeler Ridge-Maricopa Water Storage District  
cell: 661-345-3719 email: [rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)

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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Tuesday, November 2, 2021 4:35 PM  
**To:** Rob Kunde <[rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)>; Jonathan Parker <[jparker@kwb.org](mailto:jparker@kwb.org)>; ntorres@kwb.org <[ntorres@kwb.org](mailto:ntorres@kwb.org)>; ttaylor@rrbwsd.com <[ttaylor@rrbwsd.com](mailto:ttaylor@rrbwsd.com)>  
**Cc:** Angela Bezzone <[bezzone@mbkengineers.com](mailto:bezzone@mbkengineers.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>  
**Subject:** RE: Sites - Contact for Kern Water Bank and Points of Rediversion for WRMWSD water from the Sites Project

Thanks Rob. This is great information. I have copied Angela Bezzone from MBK on this email. Angela is actually going to help me on this and will be contacting Nick and Trent directly to chat.

Angela, see below.

We look forward to talking with folks and making sure we get all the necessary points of rediversion in our Sites water right application.

Ali



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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Kunde <[rkunde@wrmsd.com](mailto:rkunde@wrmsd.com)>  
**Sent:** Tuesday, November 2, 2021 11:59 AM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** Jonathan Parker <[jparker@kwb.org](mailto:jparker@kwb.org)>; [ntorres@kwb.org](mailto:ntorres@kwb.org); [ttaylor@rrbwsd.com](mailto:ttaylor@rrbwsd.com)  
**Subject:** Re: Sites - Contact for Kern Water Bank and Points of Rediversion for WRMWSD water from the Sites Project

Ali:

Please call Nick Torres 661-398-4900. He is the Facilities Manager and does the water scheduling for the Kern Water Bank. Jon Parker is the General Manager. I have copied both on this email.

Wheeler Ridge may bank Sites supplies by:

1. diversion from the California Aqueduct into the Kern Water Bank Canal (Aqueduct milepost 238.19)
  2. diversion from the California Aqueduct into the Cross Valley Canal - CVC - (Aqueduct milepost 238.04)
    - a. from the CVC, water can be delivered directly to the Kern Water Bank, or
    - b. from the CVC, water can be delivered into the Kern River (a semi-natural watercourse), and then diverted from the Kern River onto the Kern Water Bank through Basin 4, Basin 9, or the Kern Water Bank Canal diversion upstream of 2nd Point; have Nick confirm/add to this information
  3. diversion from the CVC directly into the Pioneer Project (another banking project), or into the Kern River for diversion onto the Pioneer Project. Nick will have more details on this type of delivery.
- You should also talk to Trent Taylor of Rosedale Rio Bravo WSD 661-589-6045. Rosedale can also take Sites water into the Kern River for re-diversion to its banking facilities. I have copied him on this email as well.

**Robert J. Kunde, P.E.**

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

cell: 661-345-3719 email: [rkunde@wrmsd.com](mailto:rkunde@wrmsd.com)

**From:** Sites Project [info@sitesproject.org]  
**Sent:** 1/27/2022 4:35:27 PM  
**To:** Sites Project [info@sitesproject.org]  
**BCC:** mhugo@katzandassociates.com; enewsoffice@agnetmedia.com; kalmanzan@kazu.org; kclunews@aol.com; mike@kpri.com; jd@kusp.org; jjohnson@montereyherald.com; dsneed@thetribunenews.com; sfinucane@thetribunenews.com; dkatich@newspress.com; therdt@vcstar.com; jlawitz@bakersfield.com; rprice@bakersfield.com; jcox@bakersfield.com; johnwhitaker@midvalleypub.com; jlemucchi@americangeneralmedia.com; reikins@portvillerecorder.com; jkieta@fresnobee.com; tweber@fresnobee.com; kkennedy@HanfordSentinel.com; jkaczmarek@HanfordSentinel.com; snidever@hanfordsentinel.com; dhill@mercedsun-star.com; bclark@modbee.com; gstapley@modbee.com; vgibbons@visaliatimesdelta.com; sjlyons@gannett.com; jmward@visaliatimesdelta.com; jmoore@kvpr.org; eromero@kvpr.org; susan@colusacountynews.com; kabcpress@gmail.com; info@kcaaradio.com; avishay.artsy@kcrw.com; kfinewsdirector@kfi640.com; charlie@knewsradio.com; knxnews@cbsradio.com; lmantle@kpcc.org; enjoyce@scpr.org; pd@kpfk.org; Gene@rrrbroadcasting.com; info@kvcr.org; gabriel.lerner@impremedia.com; hfine@labusinessjournal.com; harrison.sheppard@dailynews.com; sscauzillo@scng.com; leosmith@scng.com; kmodesti@scng.com; mariel.garza@dailynews.com; mariel.garza@langnews.com; larry.wilson@sgvn.com; bettina.boxall@latimes.com; susanne.rust@latimes.com; louis.sahagun@latimes.com; allison.wisk@latimes.com; christine.mai-duc@latimes.com; javier.panzar@latimes.com; phil.willon@latimes.com; george.skelton@latimes.com; nicholas.goldberg@latimes.com; robert.greene@latimes.com; sue.horton@latimes.com; patt.morrison@latimes.com; melody.gutierrez@latimes.com; ddanelski@scng.com; jhorseman@scng.com; jsteinberg@scng.com; sbaer@scng.com; lila@signalscv.com; jason@signalscv.com; msprague@scng.com; julie.makinen@desertsun.com; JWilson@palmspri.gannett.com; SMetz@gannett.com; erin.greer@penton.com; gwozniacka@ap.org; jdearen@ap.org; journal@awwa.org; kpixnewsmanagers@cbs.com; readers@forbes.com; joe.rosato@nbc.com; jim.christie@thomsonreuters.com; tomnutall@economist.com; letters@time.com; peisler@usatoday.com; ccubbiso@usatoday.com; allysia.finley@wsj.com; jim.carlton@wsj.com; jim.carlton@wsj.com; sspicer@wef.org; jamesl@pennwell.com; info@aztecanews.com; aswayne@danapointtimes.com; john.canalis@latimes.com; jamie.rowe@latimes.com; aswayne@danapointtimes.com; corozco@ocregister.com; john.canalis@latimes.com; rita@lbindy.com; andrea@lbindy.com; editor@lbindy.com; sullivan@ocbj.com; hamanaka@ocbj.com; mramirez@ocregister.com; lbucio@ocregister.com; mwisckol@scng.com; aswayne@danapointtimes.com; dennis@sunnews.org; amanda.gomez@kero.com; agalert@cfbf.com; chuck@thebusinessjournal.com; morningreport@capitolmr.com; wsander@capitalpress.com; amy.quinton@csus.edu; john.howard@capitolweekly.net; mwolcott@chicoer.com; dreidel@chicoer.com; dbutler@bayareanewsgroup.com; tbarnidge@bayareanewsgroup.com; pburgarino@bayareanewsgroup.com; eclendaniel@mercurynews.com; dhatfield@bayareanewsgroup.com; sonate@davisenterprise.net; ldubois@davisenterprise.net; aternus@davisenterprise.net; tperez@davisenterprise.net; beberling@dailyrepublic.net; donc@goldcountrymedia.com; smiller@appealdemocrat.com; vcatlin@appealdemocrat.com; jabbott@appealdemocrat.com; kfbknews@clearchannel.com; mathers84@yahoo.com; kchonews@csuchico.edu; lsharp@winecountrybroadcasting.com; mary@kzyx.org; dwyatt@mantecabulletin.com; jcampbell@mantecabulletin.com; smiller@appealdemocrat.com; acreasey@appealdemocrat.com; thansen@tcnpress.com; mwolcott@chicoer.com; silas.lyons@redding.com; damon.arthur@redding.com; jenny.espino@redding.com; jcasini@dailynewsgroup.com; woremus@dailynewsgroup.com; rveditor@citlink.net; glin83@yahoo.com; pteditor@goldcountrymedia.com; banderson@sacbee.com; lgustus@sacbee.com; sacramento@bizjournals.com; bvandermeer@bizjournals.com; editorial@sacobserver.com; jcriesi@recordnet.com; gbrookshire@recordnet.com; abreitler@recordnet.com; rmiller@thereporter.com; knolan@thereporter.com; thansen@tcnpress.com; jsmith@dailydemocrat.com; hkemp@dailydemocrat.com; asianjournal@aol.com; carlos@thestarnews.com; tcagala@coastnewsgroup.com; editor@eaglenewsca.com; editor@eccalifornian.com; cliffalbert@clearchannel.com; mkeshavan@sdbj.com; sadamek@sdbj.com; davidr@sdcitybeat.com; joe.guerin@sddt.com; george.chamberlin@sddt.com; morgan@sdccn.com; jeff.light@utsandiego.com; matthew.hall@sduniontribune.com; diana.mccabe@sduniontribune.com; charles.clark@sduniontribune.com; chris.nichols@utsandiego.com; joshua.smith@sduniontribune.com; deborah.brennan@sduniontribune.com; scott.lewis@voiceofsandiego.org; alexa@alianzanews.com; gerardof@alianzanews.com; dbryant@community-newspapers.com; jeanne@timesmediainc.com; news@campbellexpress.com; bbabcock@community-newspapers.com; cvongsarath@community-newspapers.com; jeanne@timesmediainc.com; mderry@gilroydispatch.com; bruceb@latc.com; dsparrer@community-newspapers.com; rdevincenzi@themilpitaspost.com; editor@morganhilltimes.com; eventsandnews@dailynewsgroup.com;

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dbryant@community-newspapers.com; nchase@bayareanewsgroup.com; eclendaniel@bayareanewsgroup.com; progers@bayareanewsgroup.com; David\_Houston@dailyjournal.com; info@santaclaraweekly.com; dsparrer@community-newspapers.com; slynch@bizjournals.com; mmilo@bizjournals.com; cvongsarath@community-newspapers.com; dbryant@community-newspapers.com; jeanne@timesmediainc.com; sharmon@bayareanewsgroup.com; mschapiro@cironline.org; rsalladay@cironline.org; mkatches@cironline.org; baycitynews@pacbell.net; deanna\_wulff@hotmail.com; dborenstein@bayareanewsgroup.com; kalw@kalw.org; news@kalx.berkeley.edu; producers@kgoradio.com; programming@kkdv.com; news@kliv.com; lsommer@kqed.org; tlauber@KQED.org; fm@kqed.org; KQEDNewsroom@kqed.org; mprado@marinij.com; rsterling@marinij.com; whouston@marinij.com; editor@sfbayview.com; sanfrancisco@bizjournals.com; lkazakoff@sfchronicle.com; kalexander@sfchronicle.com; jdiaz@sfchronicle.com; ACooper@sfchronicle.com; editor@sfrichmondreview.com; mhowerton@sfexaminer.com; mdenike@sfexaminer.com; pfimrite@sfchronicle.com; editor@scng.com; amouchard@scng.com; tsciacqua@scng.com; salrodriguez@scng.com; sgowen@scng.com; Susan@SusanShelley.com; sabrina@agnetwest.com; patrick@agnetwest.com; gwozniacki@ap.org; Tdelias@aol.com; julie@calmatters.org; ben@calmatters.org; dave@calmatters.org; laurel@calmatters.org; dan@calmatters.org; scott\_blair@mcgraw-hill.com; dkhan@eenews.net; maven@mavensnotebook.com; editor@westerncity.com; mealbert@csuchico.edu; mlee@sdca.org; Jerry Brown [jbrown@sitesproject.org]; srossetto@KatzandAssociates.com; SKatz@KatzandAssociates.com; Kevin Spesert [kspesert@sitesproject.org]; sconway@KatzandAssociates.com; info@agalert.com; thansen@dailyrepublic.net; Marcia Kivett [MKivett@sitesproject.org]

**Subject:** For Immediate Release - JP Robinette Joins Sites Project Authority as Engineering and Construction Manager

**Attachments:** Sites News Release - EDC Mgr\_FINAL.docx; JPRobinette\_Headshot.jpeg

Good afternoon,

The Sites Project Authority Board of Directors selected **JP Robinette** as the **Engineering and Construction Manager** for the Sites Reservoir Project. Please see the attached news release and headshot for your use, and reach out with any questions.



**For Immediate Release:**

**January 27, 2022**

**Contact:**

**Sara M Katz**

619-813-9551

**JP Robinette Joins Sites Project Authority as Engineering and Construction Manager**

*Robinette's Addition Adds Momentum to the Advancement of the Sites Reservoir*

**Maxwell, Calif.** – The Sites Project Authority Board of Directors is pleased to announce the selection of JP Robinette as the Engineering and Construction Manager for the Sites Reservoir Project. This is a new position in the project organization and one that will have growing responsibilities as the engineering for the roads and bridges, dams, and conveyance facilities associated with the project ramps up in the coming years. Mr. Robinette will assume this role in March.

JP Robinette is familiar to the Sites Project having worked as the Project Controls Project Manager for the past three years where he has held responsibilities for project operations functions, developed, and implemented financial and cost controls, prepared and revised project schedules, and led the development of the plan of finance for the project. In this new role, Mr. Robinette transitions to an owner's role as an Authority Agent – Engineering and Construction Manager, which functionally reports to the Executive Director but contracts directly with the Sites Project Authority Board of Directors and operates as an independent contractor covering project departmental-level responsibility. Mr. Robinette will be a member of the Senior Management Team for the Project and provide strategic and tactical leadership over the engineering and financing aspects of the Project.

In addition to his experience on the Project, Mr. Robinette served as a director with managerial and leadership responsibilities at Brown and Caldwell where has worked for the past five years as a senior project manager and principal in charge over several large public sector projects and programs.

“As a known and highly respected contributor to the project for several years, the Authority Board is confident this is the right choice for the project and with JP's background and familiarity with the local community, we are further assured that the project engineering implementation will be mindful of local needs while achieving project performance goals,” said Fritz Durst, chairman of the Sites Project Authority.

The Project recently achieved the required level of feasibility as determined by the California Water Commission. Achieving this milestone means the project continues eligibility for \$836 million of Prop 1 State funds. The project also recently reissued the revised draft environmental impact report, and under Reclamation's leadership the supplemental draft environmental impact statement was issued for public review. In the coming year, the project is expected to progress with field studies and engineering evaluations to advance the design to a 30% design level by mid-2023, achieve key inter-agency agreements, and develop the final plan of finance.

“I'm excited to work more closely with the Authority to make this generational project a reality. Building Sites will require pairing a deep understanding of the engineering and business principles of project management with the ability to engage and listen to the people who know and work the land. I am thrilled to be a part of the team responsible for developing this infrastructure and building an organization to manage this asset for generations to come,” said incoming Engineering and Construction Manager JP Robinette.

Located 10 miles west of the town of Maxwell in rural Glenn and Colusa counties, the Sites Reservoir would be an off-stream storage facility that captures and stores stormwater flows in the Sacramento River—after all other water rights and regulatory requirements are met—for release in dry and critical years for environmental use and for California communities, farms and businesses when it is so desperately needed.

Now more than ever, California needs to address its statewide water management challenges by implementing innovative solutions that address the need for a sustainable and affordable water supply. Sites Reservoir will provide a new water supply for both people and the environment, and significantly improve the state's water management system in drier periods and restore much needed flexibility and reliability in the system.

*Sites is an off-river reservoir proposed north of the Sacramento-San Joaquin Delta, where it would provide unique water supply and environmental benefits during dry and critical water years, and especially during extended drought periods. Additional information can be found at: <https://www.sitesproject.org>. Follow the Sites Project on social media @SitesProject.*

###

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**From:** Richard Spotts [raspotts2@gmail.com]  
**Sent:** 1/27/2022 6:01:14 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** wade.crowfoot@resources.ca.gov  
**Subject:** My EIR-EIS comments: Please oppose the Sites Reservoir

January 27, 2022

Dear Public Officials:

I urge you to oppose and deny the application for the proposed Sites Reservoir. I understand that the public comment period on the related environmental analysis ends tomorrow. Please include this email in the administrative record for that analysis. And please respond to my comments in the final EIR-EIS.

The climate and extinction crises are real, connected, and getting worse. Dramatic reforms are urgently required. Status quo management methods are no longer appropriate or sustainable.

In this context, the connected Sacramento River and Delta ecosystems are in ecological decline, under serious environmental stress, with dwindling salmon fisheries, and greater jeopardy to dependent species that are listed or proposed for listing under the federal and state endangered species laws. Indeed, the Delta smelt is on the verge of extinction. There are already many on and off-river reservoirs lining the Central Valley. Due to the mega drought, many of them are very low, and they all lose enormous amounts of water each year from evaporation. It would be foolish to divert precious Sacramento River water and diminish necessary Delta flushing flows to build yet another off-river reservoir that would likely be very low most years and suffer evaporation losses.

Changing the status quo must mean doing better at replicating natural processes as much as possible. In this case, it would save public money, water, and the energy to divert and pump water to the new reservoir by simply acquiring farmland along rural portions of the Sacramento River and perhaps some tributaries, lowering levees, and allowing the rare high flood flows to expand out of the river channel as they previously did for many thousands of years. This would restore critical habitats for migratory waterfowl and many ESA listed or proposed species, allow natural flows to generally move southward for fisheries passage, and replenish depleted groundwater aquifers. It would be working with rather than against nature. And it would create added wildlife habitats instead of destroying thousands of acres of existing habitats. Big ag interests love to spend exorbitant public money on massive water storage projects that largely benefit their private profits. They get the gold and the general public, wildlife, and the environment get the shaft.

When are we going to learn from history and stop repeating the same mistakes over and over again? When are we going to realize that we waste enormous amounts of water and that we could save and reuse most of it through more aggressive and effective water conservation and reclamation programs?

The proposed Sites Reservoir is a relic of the foolish past way of thinking that we could somehow create water by building more dams and reservoirs. You can't drink water rights on paper or concrete. Nature provides our water, and less of it because of the climate change that we created through arrogant burning of fossil fuels. We need to change course, learn from nature, and strive to become a truly sustainable civilization.

Please oppose this project and don't destroy thousands of productive biodiverse acres for this boondoggle.

Thank you very much for your consideration.

Sincerely,

Richard Spotts  
255 North 2790 East  
Saint George Utah 84790  
[raspotts2@gmail.com](mailto:raspotts2@gmail.com)

P.S. Although I am now retired and living in Utah, I was born and spent much of my life in California. I have relatives in California and I am a frequent visitor.

cc: Interested parties



*To advance the economic, social and environmental sustainability of Northern California  
by enhancing and preserving the water rights, supplies and water quality.*

January 27, 2022

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

Bureau of Reclamation  
2800 Cottage Way, W-2830  
Sacramento, CA 95825

[EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

The Northern California Water Association (NCWA) offers the following comments on Sites Reservoir and the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.

We appreciate you seeking comments on the potential impacts to the project, which are important to address for the benefit of the region and to make the project more effective. Our comments, rather than discussing potential *impacts*, encourages a look at Sites Reservoir through a lens where the significant environmental *benefits* are fully seen and acknowledged. Through this lens, Sites Reservoir offers a new and modern approach for the environment by developing a water asset that can be used in a flexible manner for the benefit of fish and wildlife in the Sacramento Valley and the Delta. For this reason, there is strong support from every part of the Sacramento River Basin.

As Sacramento River Basin water resources managers look to serve multiple benefits in the future, including fish and wildlife, farms, cities and rural communities, the importance and need for Sites Reservoir becomes clear. Sites Reservoir is an innovative 21st century water project: an off-stream regulating reservoir that can store water for the future by capturing it during high runoff periods, and then releasing water for various beneficial uses at a later time. With its location upstream of the Delta and near the Sacramento River, water in Sites Reservoir would serve multiple benefits in the Sacramento River Basin, as well as the Delta and the rest of the state. Recent dry years have shown the value that similar off-stream reservoirs, such as Diamond Valley and Los Vaqueros, provide California communities and regional water management.

Sites Reservoir would be a dramatic enhancement to California's water system and the first storage project in California with a dedicated supply for the environment. This facility would provide multiple benefits to improve aquatic habitat conditions and withstand dry year conditions. This reservoir would be operated to accommodate and address the uncertainties created by a changing climate and improve environmental and water supply system resilience. Sites Reservoir can provide



a freshwater ecosystem water budget that would help provide flexibility and make water available during drier years--which would help ensure water availability for the ecosystem. Most importantly, Sites Reservoir would significantly improve the state's water management system in drier periods and restore much needed flexibility and reliability that have been lost in the system.

Recent climate studies have shown that California's winter runoff is likely to remain similar in volume but come in fewer months of the year, concentrating runoff and increasing flood risks. Adapting to this challenge requires infrastructure that can store surplus water when it is available and deploy it for the ecosystem and human uses when water is not available. Sites Reservoir is one of the best opportunities to re-imagine our water system in the 21st century, prepare for future climate variability, and add value to our current water system by providing high-quality water to enhance the environment, natural infrastructure, public safety, the economy, and quality of life for Californians.

Sincerely yours,

A handwritten signature in black ink, appearing to read "David J. Guy". The signature is fluid and cursive, with a large initial "D" and "G".

David J. Guy  
President

---

**From:** Rachel Zwillinger [RZWILLINGER@defenders.org]  
**Sent:** 1/28/2022 8:33:03 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Comments on Sites RDEIR/SDEIS

Hi Ali. Many thanks for the quick confirmation. We are also looking forward to continuing to work with you as the project progresses.

I hope you have an excellent weekend!

Rachel

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Friday, January 28, 2022 8:31 AM  
**To:** Rachel Zwillinger <RZWILLINGER@defenders.org>; EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Cc:** vking@usbr.gov; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Comments on Sites RDEIR/SDEIS

Thank you Rachel. I received the comments and three exhibits and am able to open all of the files.

We appreciate the groups comments and the time and effort that went into preparing these. We look forward to continuing to work with you as we prepare the Final EIR/EIS.

I hope you are doing well and have a fantastic weekend.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
aforsythe@sitesproject.org | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rachel Zwillinger <RZWILLINGER@defenders.org>  
**Sent:** Friday, January 28, 2022 8:21 AM  
**To:** EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Cc:** Alicia Forsythe <aforsythe@sitesproject.org>; vking@usbr.gov  
**Subject:** Comments on Sites RDEIR/SDEIS

Good morning. Attached, please find comments on the November 2021 Sites Reservoir Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement and three exhibits. The comments are submitted on behalf of the Natural Resources Defense Council, Defenders of Wildlife, San Francisco Baykeeper, The Bay Institute, Planning and Conservation League, Restore the Delta, Northern California Council of Fly Fishers International, California Sportfishing Protection Alliance, Friends of the River, Golden West Women Flyfishers, Institute for Fisheries Resources, Pacific Coast Federation of Fishermen's Associations, Sierra Club California, Save California Salmon, and Golden State Salmon Association.

I would appreciate confirmation that you have received the comments and exhibits.

Many thanks,  
Rachel



**Rachel Zwillinger**

*Water Policy Advisor*

**DEFENDERS OF WILDLIFE**

980 9th Street, Suite 1730, Sacramento, CA 95814

TEL: 415-686-2233

[Facebook](#) | [Twitter](#) | [Instagram](#) | [Medium](#)

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**From:** King, Vanessa M [vking@usbr.gov]  
**Sent:** 1/28/2022 9:09:16 AM  
**To:** Rachel Zwillinger [RZWILLINGER@defenders.org]; EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** Re: [EXTERNAL] Comments on Sites RDEIR/SDEIS

Thanks Rachel; Reclamation has received your comments and the exhibits as well.

Vanessa

Vanessa King  
Hydrologist and Interim Project Manager for Sites Reservoir Project  
Bureau of Reclamation, Interior Region 10 · California-Great Basin, Division of Planning  
Office: 916-978-5077

---

**From:** Rachel Zwillinger <RZWILLINGER@defenders.org>  
**Sent:** Friday, January 28, 2022 8:21 AM  
**To:** EIR-EIS-Comments@SitesProject.org <EIR-EIS-Comments@SitesProject.org>  
**Cc:** aforsythe@sitesproject.org <aforsythe@sitesproject.org>; King, Vanessa M <vking@usbr.gov>  
**Subject:** [EXTERNAL] Comments on Sites RDEIR/SDEIS

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Good morning. Attached, please find comments on the November 2021 Sites Reservoir Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement and three exhibits. The comments are submitted on behalf of the Natural Resources Defense Council, Defenders of Wildlife, San Francisco Baykeeper, The Bay Institute, Planning and Conservation League, Restore the Delta, Northern California Council of Fly Fishers International, California Sportfishing Protection Alliance, Friends of the River, Golden West Women Flyfishers, Institute for Fisheries Resources, Pacific Coast Federation of Fishermen's Associations, Sierra Club California, Save California Salmon, and Golden State Salmon Association.

I would appreciate confirmation that you have received the comments and exhibits.

Many thanks,  
Rachel



**Rachel Zwillinger**

*Water Policy Advisor*

**DEFENDERS OF WILDLIFE**

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Facebook | Twitter | Instagram | Medium

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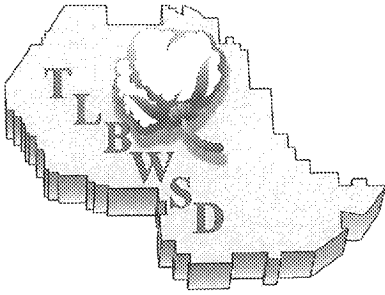
**From:** Jacob Westra [jwestra@tlbwsd.com]  
**Sent:** 1/28/2022 10:19:41 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Chantal Ouellet [ChantalO@tlbwsd.com]  
**Subject:** TLBWSO Comments on Revised Draft EIR and SDEIS for Sites Reservoir  
**Attachments:** 2022 0128 TLBWSO Comments on Sites RDEIR SDEIS.pdf

Thank you for the opportunity to comment on the revised draft Environmental Impact Report and Supplemental Draft Environmental Impact statement for Sites Reservoir. Please see attached letter.

Regards

Jacob Westra

Tulare Lake Basin Water Storage District.



# TULARE LAKE BASIN WATER STORAGE DISTRICT

ESTABLISHED SEPTEMBER 1926

1001 CHASE AVENUE, CORCORAN, CALIFORNIA 93212  
PHONE (559) 992-4127 • FAX (559) 992-3891

January 28, 2022

*Delivered via email: [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)*

Sites Project Authority  
P.O. Box 517, Maxwell, CA 95955

U.S. Bureau of Reclamation  
2800 Cottage Way, W-2830, Sacramento, CA 95825

Subject: TLBWSD Comments on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement for the Sites Reservoir Project

Dear Ms. Forsythe:

The Tulare Lake Basin Water Storage District (TLBWSD) appreciates this opportunity to comment on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement ("RDEIR/SDEIS") for the proposal to construct and operate a new offstream water storage reservoir and associated facilities ("Sites Project"). The Sites Project proposes to capture excess water from the Sacramento River and local creeks and store it in the new 1.5 MAF Sites Reservoir for later use.

TLBWSD holds a contract with the California Department of Water Resources (DWR) for the delivery of State Water Project (SWP) water. Some of the water from Sites reservoir will be delivered through the State Water Project Facilities to some of the Sites Participants. While TLBWSD is supportive of such projects, it is essential that the SWP water supply reliability and the long-term investments by TLBWSD are protected and are not negatively impacted.

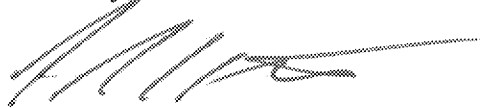
As noted in the RDEIR/SDEIS, the Sites Project proposes to divert excess flows from the Sacramento River. The unregulated flows downstream of the rim reservoirs constitute a significant portion of the SWP water supplies in addition to the water supply stored in

Lake Oroville. The RDEIR/SDEIS notes that proposed diversions for Sites Project would not impact SWP's ability to capture unregulated or excess flows. This commitment should be formalized in the Sites Project operations agreements with DWR and should include criteria that would protect the SWP water supplies and its ability to meet regulatory and contractual obligations. The operations agreements should also spell out how the Sites Reservoir operations would be accounted for and tracked to ensure ongoing SWP and CVP operations are not impacted.

The RDEIR/SDEIS also notes that the proposed operations of the Sites Project would rely on the SWP facilities including Lake Oroville to provide the water supply benefits to the Sites Project Storage Partners. The Sites Project operations agreements with DWR should ensure that the use of SWP facilities to provide benefits to Sites Project Authority or Storage Partners do not adversely impact SWP water supply or increase costs to TLBWSD. Similarly, the agreements should ensure that the SWP is not backstopping the Delta outflow benefits proposed to be provided by the Sites Project.

In closing, the TLBWSD believes development of additional storage is a critically important part of the water supply portfolio for California. In addition to the new storage, the proposed location of Sites Project also offers many opportunities for innovative and flexible water management needed in California. The TLBWSD looks forward to working with you and DWR to ensure that Sites Project is designed to avoid any adverse impacts to TLBWSD SWP water supplies. If you have any questions or would like to discuss, please do not hesitate to contact me at (559) 992.4127.

Sincerely,



Jacob J. Westra  
General Manager



---

**From:** JoAnne Lee [jojoel.ciea@gmail.com]  
**Sent:** 1/28/2022 10:32:46 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]; vking@usbr.gov; EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** sherri Norris [sherri@cieaweb.org]; Joel Sedano [joels.ciea@gmail.com]  
**Subject:** Comment Letter Sites Project Authority and Bureau of Reclamation  
**Attachments:** Comment Letter Sites Project Authority and Bureau of Reclamation.pdf

Hello,

Please find the attached comment RE: Comments to Sites Project Authority and Bureau of Reclamation's Revised Draft of Environmental Impact Report and Environmental Impact Statement of North of Delta Offstream Storage (NODOS) / Sites Reservoir Project letter from the California Indian Environmental Alliance.

Thank you,

--

JoAnne "Jo-Joe" Lee, MSW Candidate  
California Indian Environmental Alliance (CIEA)  
Mailing: PO Box 2128, Berkeley, CA 94702  
Office Location: 6323 Fairmount Avenue, Suite #B, El Cerrito, CA 94530  
Office: 510-848-2043 ▲ Cell: 510-848-2043 ▲ www.cieaweb.org



Ms. Alicia Forsythe  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

Ms. Vanessa King  
Bureau of Reclamation  
2800 Cottage Way, Room W-2830  
Sacramento, CA 95825

January 20, 2022

Submitted electronically to: [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org), [vking@usbr.gov](mailto:vking@usbr.gov), [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

**RE: Comments to Sites Project Authority and Bureau of Reclamation's Revised Draft of Environmental Impact Report and Environmental Impact Statement of North of Delta Offstream Storage (NODOS) / Sites Reservoir Project**

CIEA is writing to express our opposition to the continuation of the North of Delta Off-stream Storage Sites Reservoir Project. After reviewing the EIR/EIS, CIEA noticed a lack of meaningful consultation with Tribal Peoples within and adjacent the footprint area of the proposed project. We also noticed environmental issues that would affect Tribal People and Californians at large. CIEA asks that you withdraw the proposal and consider consulting meaningfully with Tribes.

This project will negatively impact the environment and does not honor Tribal Trust Responsibilities that the federal government has with Tribal Nations established through Treaties and agreements. Tribal Consultation in accordance with California State Assembly Bill 52 (AB-52) is missing from this process and therefore it would not be in good faith to move forward with the proposal. AB52 requires the state to invite and engage in consultation in a meaningful way with Tribes regarding Tribal cultural resources. We understand that Tribes had been invited to engage in consultation but consultation was limited to a few Tribes and there are over 20+ Tribes within and adjacent to the footprint area of the proposed project that had not been asked to offer insight and feedback on the project. Furthermore, it should not be the burden of Tribes to seek meaningful consultation by request when this is something that is required of the state to provide to Tribes.

As a result of all the above stated, we ask that the proposal be withdrawn because of non-compliance with AB-52 by the state or at least halted until meaningful consultation takes place with Tribal Nations and members in accordance with AB-52. Not all affected Tribes were outreached to appropriately. Please reach out to all Tribes who utilized the area, all of those whose source water will be utilized to fill the reservoir, and those in the receiving waters though to the Pacific Ocean.

The proposal would also tip the scales on cost-benefit analysis, giving much more weight to costs to extractive and harmful industries, while ignoring the benefits to species, especially those on the verge of extinction. We know that when we save nature, we save ecosystem services, we protect our environment, our health, and our future generations. Not only are the benefits of withdrawing this proposal better for all than for the few, the state will save money in the long run on correcting environmental impacts that will occur as a result of this proposal. We do not agree with this change and we urge you to withdraw this proposal.

We would also like to mention that aquifers naturally filter and clean. This is a key aspect of proper land management that Tribal Peoples seek to maintain collaborations with state agencies CIEA would like to note that dam water is not clean and is contaminated. The amount of mercury and PCBs found in dam water is unacceptable. We ask you to stop funding projects before EIR and EIS reports are done because of the harmful impacts and Tribes and Tribal entities having not assessed the situation and further environmental impacts. While the San Francisco Bay Area has recently confirmed they have maintained water savings, that is not the case for the agricultural, manufacturing and communities that will be the beneficiaries of this project. Instead of trying to provide more water in these areas, we should be looking to alternatives that conserve and prevent water waste.

We recommend that the Sites Project Authority and Bureau of Reclamation apply the new Tribal beneficial use definitions and water quality criteria that was adopted in California on May 2, 2017 by the State Water Resources Control Board to the water bodies impacted by this project. CIEA has supported Tribal engagement in Northern California for Tribal efforts to regionally designate traditionally used water bodies under the “new” statewide beneficial use definitions, “Tribal Subsistence Fishing” and “Tribal Cultural Uses including critical habitats for endangered species. These new definitions are now legally defensible under the Clean Water Act (CWA) and this issue areas should be part of the needed meaningful Tribal consultation.

We must remember that this is Native Land and Native people are humans and as the first Peoples of this land we seek to support the cultural continuance of Tribes to continue practicing their place-based cultures. Attached to this is the need to access to their homelands without state barriers, and to steward their lands which includes the need to protect the use of water to support regional landscapes, traditional foods and cultural uses. The proposed project and the EIR/EIS in their current state does not support Tribal traditional uses.

We encourage state and federal agencies to support Native American rights to cultural subsistence as stated by the U.N. Declaration on the Rights of Indigenous Peoples, and in California to support the intent of Governor Newsom’s apology as stated in N-15-19 and the

resulting the Truth and Healing Council to work with California Tribes to support healing, collaboration and co-management with Tribes. The best way to support Tribes in healing is to support the cultural continuance of Tribes, provide access to cultural and subsistence resources and to protect culturally sensitive areas. What is the purpose of these proclamations/policies/entities, if you're going to continue to perpetrate the mistreatment and dispossession of the Tribal People? Please uphold and protect not only the cultural practices and the continuance of California Native Peoples.

Please join us in recommending the project and all actions involving the proposed project be halted until all Tribes, within and outside the footprint area, are meaningfully consulted. False statements made within the reports should be reinvestigated and corrected. Therefore, the Sites Authority and Bureau of Reclamation need to conduct proper EIR and EIS with Tribal involvement and Tribal consultation with all Tribes needs to be completed before this project continues.

Thank you,



Sherri Norris

Executive Director

California Indian Environmental Alliance

[sherri@cieaweb.org](mailto:sherri@cieaweb.org) / [www.cieaweb.org](http://www.cieaweb.org)

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 10:47:32 AM  
**To:** Ben King [bking@pacgoldag.com]  
**Subject:** RE: Sites Reservoir Project Revised Draft Environmental Impact Report Comments - Cite Addendum

Thanks Ben. And you too! It looks like the weather will be beautiful – we just need more rain!

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Ben King <bking@pacgoldag.com>  
**Sent:** Friday, January 28, 2022 10:32 AM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Cc:** King, Vanessa M <vking@usbr.gov>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites Reservoir Project Revised Draft Environmental Impact Report Comments - Cite Addendum

Thank you for the reply Ali.

Have a great weekend.

Best Regards,

Ben

---

**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Friday, January 28, 2022 10:30 AM  
**To:** Ben King <bking@pacgoldag.com>; EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Cc:** King, Vanessa M <vking@usbr.gov>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites Reservoir Project Revised Draft Environmental Impact Report Comments - Cite Addendum

Thank you Ben. We received your comments and look forward to continuing to work with you as we prepare the Final EIR/EIS.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Ben King <[bking@pacgoldag.com](mailto:bking@pacgoldag.com)>  
**Sent:** Friday, January 28, 2022 9:57 AM  
**To:** EIR-EIS-Comments <[eir-eis-comments@sitesproject.org](mailto:eir-eis-comments@sitesproject.org)>  
**Cc:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; Ben King <[bking@pacgoldag.com](mailto:bking@pacgoldag.com)>  
**Subject:** RE: Sites Reservoir Project Revised Draft Environmental Impact Report Comments - Cite Addendum

Dear Bureau of Reclamation,

Please find a working link for the 2<sup>nd</sup> Cited Paper in my comments for 8(a) below. The article cited is "**Multi-Stage Origin of the Coast Range Ophiolite, California: Implications for the Life Cycle of Supra-Subduction Zone Ophiolites**" by John W. Shervais et. al as published in the International Geology Review Vol. 46, 2004 , p. 289-315.

Here is a working link <https://pubs.er.usgs.gov/publication/70026861>

Thank you again for the opportunity to comment.

Sincerely

Ben King

---

**From:** Ben King <[bking@pacgoldag.com](mailto:bking@pacgoldag.com)>  
**Sent:** Friday, January 28, 2022 9:34 AM  
**To:** [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)  
**Cc:** [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org); Ben King <[bking@pacgoldag.com](mailto:bking@pacgoldag.com)>  
**Subject:** Sites Reservoir Project Revised Draft Environmental Impact Report Comments

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**Subject:** Sites Reservoir Project Revised Draft Environmental Impact Report

U.S. Bureau of Reclamation  
2800 Cottage Way,  
Sacramento, California 95825

Re: Comments of Revised Draft Environmental Impact Report

I am submitting my comments on the Draft Environmental Report for the Sites Reservoir Project ("ER") on behalf of my family and with the objective of raising long term issues of concern for the people, environment and economy of Colusa and Glenn Counties. My family has been farming since 1860 in Colusa County and own property with historical ownership dating back to 1860 on the Colusa Basin Drain north of the town of College City. I want to make it clear that I support the Sites Project because its water storage is needed for the State of California but my concern is that important issues could be overlooked that could have serious long term environmental consequences since many local stakeholders have not been involved in the consideration of this historical project for Colusa and Glenn Counties. As you know, the Covid 19 pandemic has suppressed many social interactions including the public engagement for the Sites Reservoir project. Additionally many local stakeholders have what can best described as expectation fatigue whereby there is much skepticism that the Project will ever be completed and therefore many potential stakeholder comments have been likely suppressed due to the lack of confidence that the project will be completed. It takes a significant amount of time to comment and engage with a project of this magnitude and many have engaged and commented only to see the project not to move forward. This is a very important project for the State and the most important project in history for Colusa and Glenn Counties and that is why I have taken the time to comment. Again – I hope the project is completed but I also hope that it is done the right way with win/win outcomes for both the State and the long term vitality and prosperity for Colusa and Glenn Counties and its residents.

Please see my comments below:

1. The Recent Racial Equity, Diversity, Inclusion, Access and Anti-Racism Resolution (“DEI”) ( SWRCB Resolution No. 2021-0050) of the SWRCB should be considered and incorporated into the ER and well as the DWR’s adoption of the State of California objectives in the Human Right to Water (“HRW”) which was recently incorporated in the DWR Handbook.

a. The DEI and HTW objectives of the SWRCB and HTW of the DWR are particularly important to the stakeholders of Colusa and Glenn Counties due to the recent trends in the availability of fresh drinking water and in deteriorating water quality.

- Tehama, Glenn and Colusa residents reported over 200 dry domestic wells in 2021 ( See <https://calmatters.org/environment/2021/08/california-groundwater-dry/> ), the Cities of Orland and Willows faced water supply challenges and the City of Williams reported that one of its public supply wells ran dry in 2021 ( A City of Williams Member on the Colusa Groundwater Authority reported that one of its public supply wells ran dry in an August 2021 Meeting [https://colusagroundwater.org/mdocs-posts/2021\\_08\\_24-cga-board-meeting-minutes\\_final/](https://colusagroundwater.org/mdocs-posts/2021_08_24-cga-board-meeting-minutes_final/) )

- The public supply systems for Maxwell currently have high TDS levels and face potential increases in TDS levels from the upward movement of groundwater with high TDS levels due to the common occurrence of upconing groundwater in the Colusa Subbasin. One of the wells for the Williams public supply system recently reported a TDS level of 790 and the public supply wells for both Maxwell and Williams which lie at the foot of the proposed reservoir have recorded TDS observations from 500 to 800 in recent years. The public supply system for the residents of Grimes has arsenic contamination levels of approximately 25 Ug/L. These water quality challenges are most likely due to the upconing of high TDS connate water from deeper levels in the aquifer in combination of aggravated redox chemical reactions as increased groundwater pumping and deeper wells bring previously anerobic groundwater into contact with oxygen causing the desorption of naturally occurring contaminants like arsenic and/or just drawing saltier water into the supply system aquifer.

b. The DEI and HTW policies and objectives are also important from the perspective of Equity in general. Federal and State taxpayers will be allocating billions of dollars to bring fresh water to urban areas south of the areas of origin in the Sacramento Valley where public funds have been spent to provide conjunctive supply systems. The public supply systems in Tehama, Colusa and Glenn Counties are exclusively dependent on groundwater and currently faced both supply and water quality resiliency challenges that will be benefited by the water storage and supply from the Sites project. It is conceivable and probable that while there may not be enough clean drinking water for the City of Williams in the next 50 years that cities in Southern California will have access to clean drinking water stored less than 10 miles to the north west of Williams by virtue of the publicly subsidized water storage and water conveyance infrastructure of the Sites Reservoir. This seems fundamentally unfair and will result in a disproportionate impact on the primarily minority residents of affected Cities like the City of Williams. Now is the time to guarantee the HTW and DEI protections by using the Sites infrastructure for a water filtration system that can provide the public supply systems in Tehama, Glenn, Colusa and Northern Yolo County with conjunctive access to the surface water from the Sacramento River via a filtration system and pipelines that could be installed next to the Tehama Colusa Canal or the HWY 99 roadway that connects all of these communities. This could be incorporated with broadband infrastructure projects and electrical transmission line upgrades to optimize the resources spent on excavation and infrastructure.

c. DEI policies and objectives should also address the distribution of economic opportunity from the construction of the project but also public ease of travel and access to current and future recreational facilities surrounding the Sites project. Construction jobs and contractor opportunities should be offered and solicited from local residents and especially minority residents who are people of color. There should be public workshops regarding jobs and contracting opportunities. Public access to the communities surrounding Sites such as Leesville, Lodoga, and Stonyford should be as easy and short as possible to offer ease of access especially for local residents who are likely to have less economic resources to travel longer distances. There also should be ease of access to current and future recreational areas including the Colusa and Glenn County portions of the Berryessa Snow Mountain National Monument.

2. Chapter 3 Comments – Environmental Conditions

a. The operation of the Sites Reservoir is likely to affect future water supply and groundwater quality in the Colusa Subbasin if it promotes more water transfers and related groundwater substitution extractions from the aquifer. The California Water Commission is likely to approve inbasin groundwater trading which also could lead to more groundwater pumping especially in areas where deep wells are needed to achieve desired pumping volumes and where groundwater quality may be sacrificed for water quantity. The unique aspect of concern for the operation of the Sites Reservoir is it provides a physical connection between inbasin surface water transfers and surface water export sales by Settlement Contractors. With the ability to store and deliver water via the Tehama Colusa Canal and the Glenn Colusa Irrigation District facilities surface water sales become fungible whether or not it is from a diverter on the Sacramento River in the Colusa Subbasin or from stored water in Sites that ultimately be delivered via the Tehama Colusa Canal and the Dunningan interconnect via the Colusa Basin Drain into the Sacramento River downstream. There is also economic incentive to engage in water quality arbitrage whereby fresh water is sold from the Sacramento River and salty groundwater is pumped via a groundwater substitution well or otherwise. The control over the conveyance system into Sites which ultimately makes its way back to the Sacramento River via the Dunningan interconnect would allow degraded quality groundwater to be blended in route to inbasin use or exported using the conveyance system to blend. There should also be some consideration how the likely development of inbasin groundwater trading may lead to overpumping and groundwater quality degradation since the Sites Reservoir may be a storage and water market transfer clearinghouse for Sacramento Valley water transfers.

b. The comments on Page 3-3 regarding the relative slow growth of the Colusa and Glenn communities seems to contrary to the State of California's objectives for DEI economically focused economic opportunity and a reasonable affordable housing policy. Just because an area has had slow growth in the past it does not justify condemning an area to be an economic wasteland especially since it is the area of origin for most of the State's water resources and offers the best opportunity to meet the State's affordable housing objectives. For example, the City of Williams has grown significantly in the past decade and faces challenges to its water resiliency because it does not have access to the same Sacramento Surface water that Sites will store. The ER should consider the State's housing and affordable housing and DEI housing and economic policies when making these statements.

c. The ER does not acknowledge the cultural assets that come with the areas 150 year historical heritage or its rich ecological resources that are being increasing used for ecotourism and ecofriendly stakeholders. The area surrounding the proposed site encompassing the historical towns or Leesville, Lodoga and Stonyford which have a rich pioneer heritage and current ranching related activities. Wilbur Springs has become a eco-focused resort and is used as an access point for many who want to enjoy the surrounding natural points of interest. Most importantly there does not appear to be any mention of the increased use of the Mendocino National Forest and/or the northern portion of the Berryessa Snow Mountain National Monument which has recently expanded and could expand more in the future. The access to Leesville, Lodoga and Stonyford is important to provide access for public use of the National Monument and National Forest.

d. The ER does not address the loss of seasonal flooding that comes with historical flows from Stone Corral and Funks Creek. The confluence of these two Creeks occurs in the general wetland area and within part of the Willow Creek – Lurline Wetland Management Area just west of the Delevan Nation Refuge and provides the historical flooding for seasonal wetlands outside the Delevan Refuge and the Colusa Refuge downstream. In addition there is substantial acreage set aside for seasonal wetlands in the western flood zone of the Colusa Basin Drain that provide food biomass for fish and aquatic species when the flood waters makes its way down the Colusa Basin Drain to the Sacramento River and it also provide vernal pool habitat and other benefits to the flora and fauna that are located in the riparian area of the Colusa Basin Drain. The riparian areas are important habitat for both the Delevan and Colusa Refuges but also downstream which was the historical confluence of the Sacramento River and Sycamore Slough. This area now provides a rich habitat for flora and fauna on the natural levee on the westside of the Colusa Basin Drain and the islands located in the channel of the Drain. Seasonally the flooding provides regenerative life to the seasonal flood zone. The ER does not seem to consider how the diversions from Funks Creek and Stony Creek may affect these flows especially in dryer years where flood events may not happen as often over a water year cycle.

### 3. Chapter 7 - Fluvial Geomorphology



a. The description of the Colusa Basin Drain on 7.2.4 should highlight that the Colusa Basin Drain is the source of seasonal surface water supplies from winter floods for the Delevan National Refuge and Colusa National Refuge and the native islands and wetlands south of the Colusa National Refuge. It is wrong to state that the whole area has been modified because the reclamation levee starts south of the Colusa National Refuge and because the area west of the Levee is similar to its natural state before settlement and contains islands with natural habitat in the channel of the Colusa Basin Drain but also on the natural levees and flood zone on the west side of the channel. Please refer to the map of the habitat for the Colusa National Refuge which is representative of the riparian habitat on the west side of the Drain and its islands and the area of seasonal flooding for the wetlands on the west side of the Drain south of the two Refuges

[https://www.fws.gov/uploadedFiles/Region\\_8/NWRS/Zone\\_1/Sacramento\\_Complex/Sacramento/Uploaded\\_Files/Maps\\_and\\_Brochures/Habitats/Colusa%20NWR%20Habitat%20Mgt%20201213.pdf](https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Habitats/Colusa%20NWR%20Habitat%20Mgt%20201213.pdf)

#### 4. Chapter 8- Groundwater Resources

a. This Chapter relies on dated research for groundwater quality in the Colusa Subbasin. It relies on the work from Berkstresser which was done in 1973 which has elevated assumed levels for EC and TDS to determine Base to Fresh Water (“BFW”) Assumptions. The reliance on Berkstresser does not reflect the most recent understanding of BFW and groundwater quality in the Sacramento Valley but more importantly does not provide the necessary information for the State to carry out its policy objectives for HRW and DEI concerns. The public supply system for all the impacted communities rely exclusively on groundwater and future trends in groundwater quality is paramount. Additionally the ER should be updated to discuss the loss of drinking water resources that was experienced during this last drought due to the failure of several hundred domestic wells and at least one public supply well as previously discussed for the City of Williams.

b. The DWR has developed new BFW contour maps which should be relied on for the ER. Fresh groundwater is defined by the DWR as containing less than 1,000 mg/total TDS and approximately 1,550 umhos/cm specific conductance instead of the 3,000 umhos/cm used in Berstresser. According to the DWR the BFW is an uneven boundary that in some places reflects major geologic structures underlying the Sacramento Valley, and in other areas, transgresses underlying geologic structures. In some areas, the BFW boundary is well above the base of post-Eocene marine strata. According to the DWR, this is most likely caused by high artesian pressure and upward vertical gradients in deep aquifers in the Sacramento Valley, which has been documented in DWR monitoring wells, including the most recent multi completion monitoring well north of Arbuckle on Hahn Road. The DWR research suggests that migration of poor quality water into continental sediments that previously contained fresh water has occurred over geologic time. The DWRs findings is the basis for my concern about water quality and its implications for brackish and saline upconing beneath areas of prolonged groundwater pumping in the Colusa Subbasin and Sacramento Valley generally. [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/california\\_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua\\_246.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pdf)

c. The groundwater quality information in Appendix 8 and relied on in Chapter should be reconciled with the USGS Gamma Scientific Investigations <https://pubs.usgs.gov/sir/2011/5002/> regarding the status of groundwater quality in the Colusa Subbasin and also the Bureau of Reclamation’s own data regarding groundwater quality for wells used for Groundwater Substitution should also be used <https://ceqanet.opr.ca.gov/2020029001/2>. Please note that the majority of the water quality samples for wells used for groundwater substitution by Glenn-Colusa Irrigation District are above the Specific Conductance Threshold of 700 umhos/cm pursuant to the Draft Technical Information for 2015 Water Transfers. The wells identified as Reister # 2 and Reister # 3 have continuous observations between 1800 and 2000 umhos/cm as set out in Appendix I of the Environmental Assessment 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers as cited above. Chapter 8 should also reference the Minimum Threshold and Measurable Objective for groundwater quality in Table 5.1 of the Colusa Subbasin Groundwater Sustainability Plan. The Measurable Objective is the same 700 umhos/cm as the Draft Technical Information Paper and the Minimum Threshold is 900 umhos/cm. The Draft Colusa Subbasin GSP can be accessed on <https://colusagroundwater.org/>

d. Section 8.4 makes a point that there was not a need for a Project to mitigate potential water quality degradation impacts “given the rural nature of the study area” . Is this type of logic consistent with the SWRB DEI Resolution or the DWR HTW Commitments. It should not matter if an area is rural or not if there is a Human Right involved. It should

also be noted that local residents are likely to be persons of color so if there are negative impacts the impacted community would be the same community that the DEI Resolution is set out to protect.

e. Section 8.4 also makes a statement that there is no water quality contamination in the study area yet Table 2 sets out that an Arsenic contamination greater than the MCL for Arsenic and the EC for the Sites Reservoir is as high as 2190 umhou/cm which would equate to an approximate TDS level in excess of 1400 ug/L. Water is considered brackish at a TDS level of 1000. See <https://pubs.usgs.gov/circ/1358/> for discussions regarding the degradation of groundwater due to Redox, the desorption of Arsenic that occurs in Redox conditions and the movement of naturally occurring contaminants via faults all of which are conditions affecting water quality in the Colusa Subbasin and the Sacramento Valley in general.

f. Chapter 8 does not discuss groundwater quality degradation due to Redox at all. The USGS Circular 1358 referenced above and a Draft Technical Memorandum dated January 23, 2014 by CH2Mhill "Arsenic in Groundwater, Soil, and Surface Water in Rice-Growing Areas of the Sacramento Valley" by Summer Bundy et. al. discuss the potential for Redox conditions and how Redox conditions can be aggravated by changes in soil oxidation levels that come with overpumping of groundwater or the upconing of anoxic salt water into parts of the aquifer where the anoxic water is exposed to oxygen. Figures 1 and 2 of the CH2Mhill Memorandum are important because it makes it clear that the rice growing areas include the area encompassing Funks and Stone Corral Creeks downstream from the Reservoir and describes the Redox process well in Figure 2. Please note that there has been several studies finding anoxic wells in the Valley below the Reservoir Site – including Table E-5 and Figure E-5 of the USGS Gamma Scientific Investigations referenced in (c) above.

g. Chapter 8 does not address the potential for seepage of water or the seepage of brackish water from the Reservoir site into the Valley floor from faults or other geological features including the potential movement via active subduction zones from current geological structures or future geological deformation as a result of a future earthquake. When constructed the Sites Reservoir will contain 1 to 1.5 million acre feet with a hydraulic head of 500 ft above the Valley Floor. Public supply and domestic wells are likely at least 200 feet below sea level so this hydraulic gradient has a great gravitational force to find its way to push saline groundwater into or aggravate the already existing high artesian pressures and upward vertical gradients in the deep aquifers referenced by the DWR as described in (b) above. It is clear that the Reservoir Site sits upon or is near a subduction zone or near the border of active or potentially active subduction zones. Figure 1 of the Paper "Glauconite schists and ophiolites of the northern California Coast Ranges: Isotopic ages and their tectonic implications" by F.W. Mc Dowell et.al (1984) <https://pubs.geoscienceworld.org/gsa/gsabulletin/article-abstract/95/11/1373/189453/Glauconite-schists-and-ophiolites-of-the-northern?redirectedFrom=fulltext> makes it clear that the subduction zone analysis is complex and that the Reservoir site is close to a boundary of ophiolitic materials and the deposits of the Great Valley Sequence. The area to the west of the Site near Goat Mountain and Stonyford and to the north of the Site near the town of Paskenta is also complex. The risk of this hydraulic head needs to be addressed in Chapter 8 and assessed in context of the SWRB DEI Resolution and the DWR HRTW objectives and responsibilities.

h. The upconing of salt water in the Sacramento Valley is of great concern and there are many data gaps regarding this issue. What is clear is that groundwater extraction is occurring in a fresh water aquifer above a subduction zone and that over pumping degrades the fresh water aquifer either because previously anoxic salt water is exposed to oxygen and the Redox process occurs and/or the natural upward pressure gradient or artesian influences are also accelerating the contamination and Redox process. We need more data and to do that we need more multi-completion observation wells especially on the west side of the Sacramento Valley – groundwater quality needs to be observed at multiple depths and the hydraulic gradient of each observation site needs to be observed and monitoring. The required analysis should be a time series of observations and these observations should be focused on current hydrological conditions and future hydrological conditions that may come with having the hydraulic head of the water storage sitting 500 feet above the Valley floor. There may be no influence but then there could be material influence especially as a result of a movement in a fault or an earthquake event. In order to monitor this potential contamination, the Project should invest in a series of monitoring wells in the Colusa Subbasin and finance this monitoring process working with the local Groundwater Authorities and Irrigated Lands.

i. After assessing all the groundwater quality concerns in conjunction with the State's objectives and responsibilities from the DEI resolution and HRTW, the logic for a Sacramento Valley West Side Filtration System is a compelling mitigation project that could be combined with other public infrastructure projects such as broadband and buried power lines running north and south via the Hwy 99 infrastructure adjacent to I-5. As I have mentioned previously in these comments, policy makers will spend billions of dollars on a project that will primarily urban residents down stream from the Reservoir but may end up leaving the residents and communities at the base of the project without a sustainable supply of fresh water either because there is not supply or because the Reservoir project itself caused degradation of the fresh water supply by seepage or increased hydraulic and artesian pressures forcing salt water into domestic wells and public supply systems like the public supply systems for Maxwell and the City of Williams.

## 5. Chapter 9 Comments - Vegetation and Wetland Resources

a. Section 9.3 appears to ignore the riparian and seasonal wetlands on the Colusa Basin Drain. Since this is the habitat that encompasses thousands of acres of wetland easements and two National Refuges this seems like a very material omission. Section 9.3.1. should include the discussion of the vegetation and wetlands in the Delevan and Colusa Refuges and all the wetland habitat on the Colusa Basin Drain below the two Refuges.

## 6. Chapter 10 Comments – Wildlife Resources

a. In 10.2.2.4 – It is incorrect to group the Colusa Basin Drain habitat with the TC Canal or the GCID Main Canal. The Colusa Basin Drain is historical habitat that dates back before European Settlement that includes two National Refuges downstream, thousands of acres of designated wetlands, extensive riparian natural levee on the west side of the channels and several islands within the channel of the Colusa Basin Drain. It also delivers water for the ecosystem that is unique to seasonal flooded areas both within the Delevan and Colusa National Refuges and all the wetland easement areas south of the Site. The Wildlife Resources representative for the Sacramento Valley National Wildlife complex <https://www.fws.gov/refuge/Sacramento/habitats.html> which includes Delevan and Colusa National Refuges is also representative of the riparian natural levee on the west side of the Colusa Basin Drain, the islands in its channel and the wetland easements on the west side of the Colusa Basin Drain.

b. There should be a discussion in 10.2.3 regarding the habitat for Vernal Pool Fairy Shrimp and Conservancy Fairy Shrimp at the seasonally flooded wetlands east of I-5 near the confluence of Funks Creek and Stone Corral Creek. If the winter flows are restricted too much because the flood waters are diverted to the Reservoir this habitat could be endangered. This habitat includes part of the Willow Creek – Lurline Wetland Management Area [https://www.fws.gov/uploadedFiles/Region\\_8/NWRS/Zone\\_1/Sacramento\\_Complex/Sacramento/Uploaded\\_Files/Maps\\_and\\_Brochures/Location/Willow%20Creek%20Lurline%20WMA%20Location%20Map%202012.pdf](https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Location/Willow%20Creek%20Lurline%20WMA%20Location%20Map%202012.pdf) As you can see from the Map, there is a portion of the Willow Creek – Lurline Management Area that is located where Funks Creek and Stone Corral Creek traverse I-5 and join before running into the Delevan National Wildlife Refuge and the Colusa Basin Drain. This type of habitat exists for the wetland easements and riparian areas of the Colusa Basin Drain.

c. The discussion regarding the impact on Vernal Pool Branchipods should consider the effect of limiting the flood flows from Funks and Stone Corral Creek due to the diversion of these Creeks into the Reservoir. These vernal pools exist on much of the two Refuges and wetland easements on the Colusa Basin Drain.

d. Generally – the discussion regarding all fauna discussed in this Chapter should be done in context to the natural habitat provided by the Colusa Basin Drain. Parts of the Drain like the portions encompassed by the Delevan and Colusa National Refuges have habitat on both sides of the Drain. South of the Colusa Refuge there is a levee on the east side of the Drain but the area between the toe of the levee on the east side all the way to the wetland easements on the west side is abundant habitat for Wildlife Resources. This is particularly the case in the area north of College City where the historical confluence of Sycamore Slough and the Colusa Basin Drain occurs. This was the historical confluence for the Sacramento River and the Colusa Basin Drain waterway before it was modified for Reclamation purposes.

## 7. Chapter 11 Comments – Aquatic Biological Resources

a. The discussion in 11.2.2.2 regarding Nutrients and Foodweb Support should include a discussion regarding the Nigiri Project. <https://www.nigiriproject.com/>. The seasonal flooding on the Colusa Basin Drain is an important part of the Foodweb as illustrated by the findings of the Nigiri Project. To the extent that flood flows from Funks Creek and Stone Corral Creek are diverted the Foodweb highlighted in the Nigiri Project will be diminished especially regarding the seasonal wetlands and inundated riparian corridor along the Colusa Basin Drain.

b. Fish Passage and Entrapment – Page 11-16 Salmon are present in the Colusa Basin Drain and have become entrapped <https://www.fws.gov/fieldnotes/regmap.cfm?arskey=33853>

c. Discussion regarding Funks and Stone Corral Creek Page 11-299. Regarding the area of the confluence of Funks and Stone Corral Creeks on the east side of I-5, as noted in 6(b) above this area includes a portion of the Willow-Creek-Lurline Wetlands Management Area. What is missing from discussion and from this Chapter generally is any discussion regarding the aquatic species that live in the Colusa Basin Drain. As noted in (b) above salmon have been found in the Colusa Basin Drain. Local fisherman have fished for catfish on the Drain for years and Red Swamp Crayfish is abundant. Also missing from this discussion is the contribution to the Foodweb from seasonal flooding on the Colusa Basin Drain. The Colusa Basin Drain is ALIVE and is an important source of food for aquatic life in its channel but also downstream of Knights Landing where the confluence of the Colusa Basin Drain and the Sacramento River. Historically the confluence was via Sycamore Slough before Reclamation so wild life species have depended on the Colusa Basin Drain habitat since the end of the Great Valley Sequence. Since Reclamation the confluence is at Knights Landing but the importance of its habitat has existed for millions of years since the Great Valley Sequence made it the low lying waterway and wetlands for the west side of the Sacramento Valley.

## 8. Chapter 12 Comments – Geology and Soils

a. Section 12.2 is missing a discussion regarding the geologic issues associated with the geologic development of the Sacramento Valley as an archetypal forearc basin <https://pubs.geoscienceworld.org/gsa/geology/article/47/8/757/571454/The-birth-of-a-forearc-The-basal-Great-Valley> The geology at the Reservoir Site has a complex geological structure due to the existence of the subduction zone beneath and around the Site. As mentioned in 4 (g) above the Site is near a border of ophiolitic rocks and the deposits of the Great Valley Sequence – See Figure 1 from McDowell referenced in 4 (g) above. Also reference in McDowell is the unique development of the subduction zone near Goat Mountain to the west of the Site and the area near the town of Paskenta to the north. The Sites Reservoir is located in the Northern or Sacramento Valley Belt of Coast Range Ophiolites <https://pubs-test.er.usgs.gov/publication/70026861> which have been largely influenced by the historical development of the subduction zone caused by the collision of the Pacific and North American plates. This context is necessary to adequately assess future earthquake risk on the structure itself but also assess the risk of groundwater quality contamination caused by seepage and hydraulic head from the stored water in the Reservoir.

b. Table 12-2 and Figure 12-4 The Paskenta and Willows Fault needs to be included in the scope of this Chapter. This is an important fault affecting potential movement of natural occurring contaminants and possible could be impacted by the extra hydraulic gradient from the Sites stored water aggravating the artesian and upconing gradient that already exists in the groundwater aquifer in the Colusa Subbasin – see 4(b) above. The anticline near the recent Hamilton City earthquake should also be included <https://earthquake.usgs.gov/earthquakes/eventpage/nc73545750/executive> since this is the most recent land based earthquake near the Site,.

## 9. Chapter 16 Comments – Recreation Resources

a. Figure 16.1 should include the towns of Leesville, Lodoga and Stonyford since they are important bases for eco-exploration, eco-tourism and cultural heritage appreciation. These towns and the roads between them provide a great source of recreation and historical appreciation of the pioneer history of Colusa County

b. It is hard to believe that Figure 16.1 does not include the National Monument and National Forest adjacent to the Site. The south east part of Mendocino National Forest has several sites which are to the west of Stonyford <https://www.fs.usda.gov/recarea/mendocino/recreation/hiking/recarea/?recid=25250&actid=50>

c. There are several recreational sites accessible from Stonyford to the Berryessa and Snow Mountain National Monument. These are highlighted on the North Map [https://www.blm.gov/sites/blm.gov/files/docs/2021-04/BSMNM\\_Brochure\\_508\\_small.pdf](https://www.blm.gov/sites/blm.gov/files/docs/2021-04/BSMNM_Brochure_508_small.pdf)

d. There should be an extensive discussion of the Berryessa and Snow Mountain National Monument in this Chapter and a discussion on the recent expansion and future expansion possibilities. <https://www.blm.gov/programs/national-conservation-lands/california/berryessa-snow-mountain-national-monument>

10. Chapter 30 Comments – Environmental Justice and Socioeconomics

a. There should be a discussion about the SWRCB DEI Resolution and the DWR HRTW requirements and how these State Agencies policies and requirements should be implemented in the economic opportunity from the construction of the project, recreation access from the process and the necessary protection from groundwater quality degradation from the Project

Thank you for the opportunity to comment and your consideration of my comments. I look forward to the completion of the Project and look forward to continued engagement as the Project progresses.

Sincerely,

Ben King

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 11:10:08 AM  
**To:** Rob Kunde [rkunde@wrmwsd.com]; Angelica Martin [amartin@tejonranch.com]  
**CC:** Angela Bezzone [bezzone@mbkengineers.com]  
**Subject:** RE: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

Thanks all! I just sent an invite for 1:30 PM on 2/2. I look forward to chatting with you all next week.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Kunde <rkunde@wrmwsd.com>  
**Sent:** Thursday, January 27, 2022 4:44 PM  
**To:** Angelica Martin <amartin@tejonranch.com>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** Angela Bezzone <bezzone@mbkengineers.com>  
**Subject:** Re: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

All:

The only time I am not available on Ali's schedule is on 2/1 when I am not available until after 1 pm.

**Robert J. Kunde, P.E.**

Retired Annuitant  
Wheeler Ridge-Maricopa Water Storage District  
cell: 661-345-3719 email: [rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)

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**From:** Angelica Martin <amartin@tejonranch.com>  
**Sent:** Thursday, January 27, 2022 3:07 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; Rob Kunde <rkunde@wrmwsd.com>  
**Cc:** Angela Bezzone <bezzone@mbkengineers.com>  
**Subject:** RE: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

Hi Alicia,

I hope you're feeling better.

See my availability in red font.

2/1 – anytime other than 3 to 3:30 PM – 11 and 1:30

2/2 – anytime - 1:30

2/3 – 9 to 10 AM; 11 am to 1 PM - NO

2/4 – any time after noon – 1:30

Thank you,

Angelica Martin

*Vice President of Water Resources*



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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Sent:** Thursday, January 27, 2022 2:48 PM

**To:** Rob Kunde <[rkunde@wrmsd.com](mailto:rkunde@wrmsd.com)>; Angelica Martin <[amartin@tejonranch.com](mailto:amartin@tejonranch.com)>

**Cc:** Angela Bezzone <[bezzone@mbkengineers.com](mailto:bezzone@mbkengineers.com)>

**Subject:** RE: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

**[EXTERNAL EMAIL]** DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi Rob and Angelica – My apologies for the delay in getting back to you. I have been out sick on and off this past week.

A call would be great. I think we can incorporate in a Pastoria Creek Point of Rediversion without much effort. But let's chat.

Below are some dates/times that work for me. Let me know what works best for you and I can get a invite out.

2/1 – anytime other than 3 to 3:30 PM

2/2 – anytime

2/3 – 9 to 10 AM; 11 am to 1 PM

2/4 – any time after noon

Ali

(Angela, let me know what works for you also.)

---

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Kunde <[rkunde@wrmsd.com](mailto:rkunde@wrmsd.com)>  
**Sent:** Monday, January 17, 2022 2:07 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** Angela Bezzone <[bezzone@mbkengineers.com](mailto:bezzone@mbkengineers.com)>; Angelica Martin <[amartin@tejonranch.com](mailto:amartin@tejonranch.com)>  
**Subject:** Re: Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water

Ali and Angela:

I spoke to Angelica Martin today:

1. They will not need any Points of Rediversion for their AVEK/Sites deliveries.
2. They are interested in including a Pastoria Creek Point of Rediversion within Wheeler Ridge, but need to understand what the institutional issues would be related to that. For example, would any EIR work be required, by Sites, the District or Tejon Ranch, to include it in the Water Rights Application? Angelica and I request a followup call to discuss item 2. above in more detail. I am not available this week but am available the week of January 24.

**Robert J. Kunde, P.E.**

Retired Annuitant  
Wheeler Ridge-Maricopa Water Storage District  
cell: 661-345-3719 email: [rkunde@wrmsd.com](mailto:rkunde@wrmsd.com)

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**From:** Rob Kunde <[rkunde@wrmsd.com](mailto:rkunde@wrmsd.com)>  
**Sent:** Thursday, January 6, 2022 12:06 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Cc:** Angela Bezzone <[bezzone@mbkengineers.com](mailto:bezzone@mbkengineers.com)>; Angelica Martin <[amartin@tejonranch.com](mailto:amartin@tejonranch.com)>  
**Subject:** Sites - Contact for AVEK/Tejon Ranch for Points of Rediversion for Sites Project Water



Ali and Angela:

I left a voice message with Angelica Martin of Tejon Ranch (661-381-3492) regarding the potential for use of Pastoria Creek for future conveyance of Sites water. Angelica is Vice President of Water Resources for Tejon. She would also be the contact person to discuss whether Tejon needs any Points of Rediversion within the Antelope Valley East Kern Water Agency. It is my understanding that Tejon Ranch is the only Sites Investor in AVEK. Angelica's email address is included in the cc: above.

Question: Do the Points of Rediversion need to be identified with specific Reservoir Project Committee participants in the Water Rights Application? If, we may need to "tag" some of the Kern River PORD with AVEK as well. Further discussion with Ms Martin is needed.

Angelica: Should Tejon ever want to use the Kern Water Bank or Pioneer Projects to store Sites water, I believe Nick Torres and I have identified the necessary Points of Rediversion to allow your Sites/AVEK water to be so stored.

**Robert J. Kunde, P.E.**

Retired Annuitant  
Wheeler Ridge-Maricopa Water Storage District  
cell: 661-345-3719 email: [rkunde@wrwmsd.com](mailto:rkunde@wrwmsd.com)

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Sent:** Tuesday, November 2, 2021 4:35 PM

**To:** Rob Kunde <[rkunde@wrwmsd.com](mailto:rkunde@wrwmsd.com)>; Jonathan Parker <[jparker@kwb.org](mailto:jparker@kwb.org)>; ntorres@kwb.org <[ntorres@kwb.org](mailto:ntorres@kwb.org)>; ttaylor@rrbwsd.com <[ttaylor@rrbwsd.com](mailto:ttaylor@rrbwsd.com)>

**Cc:** Angela Bezzone <[bezzone@mbkengineers.com](mailto:bezzone@mbkengineers.com)>; Spranza, John <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>

**Subject:** RE: Sites - Contact for Kern Water Bank and Points of Rediversion for WRWSD water from the Sites Project

Thanks Rob. This is great information. I have copied Angela Bezzone from MBK on this email. Angela is actually going to help me on this and will be contacting Nick and Trent directly to chat.

Angela, see below.

We look forward to talking with folks and making sure we get all the necessary points of rediversion in our Sites water right application.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Kunde <[rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)>

**Sent:** Tuesday, November 2, 2021 11:59 AM

**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Cc:** Jonathan Parker <[jparker@kwb.org](mailto:jparker@kwb.org)>; ntorres@kwb.org; [ttaylor@rrbwsd.com](mailto:ttaylor@rrbwsd.com)

**Subject:** Re: Sites - Contact for Kern Water Bank and Points of Rediversion for WRMWSD water from the Sites Project

Ali:

Please call Nick Torres 661-398-4900. He is the Facilities Manager and does the water scheduling for the Kern Water Bank. Jon Parker is the General Manager. I have copied both on this email.

Wheeler Ridge may bank Sites supplies by:

1. diversion from the California Aqueduct into the Kern Water Bank Canal (Aqueduct milepost 238.19)
  2. diversion from the California Aqueduct into the Cross Valley Canal - CVC - (Aqueduct milepost 238.04)
    - a. from the CVC, water can be delivered directly to the Kern Water Bank, or
    - b. from the CVC, water can be delivered into the Kern River (a semi-natural watercourse), and then diverted from the Kern River onto the Kern Water Bank through Basin 4, Basin 9, or the Kern Water Bank Canal diversion upstream of 2nd Point; have Nick confirm/add to this information
  3. diversion from the CVC directly into the Pioneer Project (another banking project), or into the Kern River for diversion onto the Pioneer Project. Nick will have more details on this type of delivery.
- You should also talk to Trent Taylor of Rosedale Rio Bravo WSD 661-589-6045. Rosedale can also take Sites water into the Kern River for re-diversion to its banking facilities. I have copied him on this email as well.

**Robert J. Kunde, P.E.**

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

cell: 661-345-3719 email: [rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)

---

**From:** Ann Nordyke [boardclerk@countyofcolusa.com]  
**Sent:** 1/28/2022 11:31:02 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Gary Evans [gevans@countyofcolusa.com]  
**Subject:** Supervisor Evans Comments - RDEIS/SDEIS  
**Attachments:** Sites Project EIR-EIS issued 11-2021-Comments Supervisor Evans.pdf

Good day Sites Project Authority,

Attached you will find both general and specific comments on the Revised Draft Environment Impact Report/Statement published on November 12, 2021 by the Sites Reservoir Project Authority, from Colusa County Supervisor, Gary Evans. On behalf of Supervisor Evans, I would like to thank you for the opportunity to formally comment on the RDEIR/SDEIS and should you have any questions please do not hesitate to contact Supervisor Evans at [gevans@countyofcolusa.com](mailto:gevans@countyofcolusa.com)

Ann

Ann Nordyke, CCB  
Chief Deputy Clerk to the Board of Supervisors  
[boardclerk@countyofcolusa.com](mailto:boardclerk@countyofcolusa.com)  
COUNTY OF COLUSA  
547 Market Street, Ste. 102  
Colusa, CA 95932  
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(530)458-0510

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**GARY J. EVANS**  
*COLUSA COUNTY SUPERVISOR, DISTRICT IV*

January 27, 2022

**BOARD OF SUPERVISORS**

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District I, Chair  
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District II  
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District III, Vice-Chair  
Gary J. Evans,  
District IV  
Denise J. Carter,  
District V

[Via Email: EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

RE: RDEIS/SDEIS Issued November 2021

**CLERKS**

Wendy G. Tyler,  
CAO/Clerk to the  
Board of Supervisors  
Ann Nordyke, CCB  
Chief Deputy Clerk  
Patricia Rodriguez,  
Deputy Clerk  
Melissa Kitis,  
Deputy Clerk

Notwithstanding my role on the Sites Project Authority Board, I appreciate the opportunity as a member of the Colusa County Board of Supervisors, to formally comment on the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environment Impact Statement (RDEIR/SDEIS). I hope and anticipate that the Project will be completed in a manner that will limit the adverse impacts to our County while maximizing the water supply and environmental (public) benefits of this major improvement to the California water management system.

The following provides both general and specific comments on the Revised Draft Environment Impact Report/Statement (published on November 12, 2021 by the Sites Reservoir Project Authority). For ease of reference I have utilized the Executive Summary in most instances.

**Executive Summary**

**Page ES-8 – Table ES-1:** Releases into Funks and Stone Corral Creeks, should be based on the Historical ecological functions of each creek, not to create “Healthy Fish” habitat where none previously existed.

**Page ES-10 – Facility Elements:** The 100’ buffer around the Reservoir and Facilities seems to be in some instances quite excessive.

**Page ES-20 – Table ES-2 - Impact VEG-4** “Conflicts with Local Policy”, mitigation measures VEG 1.2, VEG 2.2 and VEG 4.2 call for compensation, however County Policy simply calls to conserve and enhance where feasible and avoid where feasible.

**Page ES-22 – Table ES-2 – Impact WILD-1:** Wildlife Resources mitigation measure WILD 1.8 calls for the transplanting of effected elderberry shrubs, so why is additional compensation for habitat removal necessary?

**Page ES-23 – Table ES-2 - Impact WILD-1:** Why is an assessment for California Red Legged Frog Habitat necessary when the “California Wildlife Habitat Relationships System” lays out the case there is not specific habitat in the project area?

**Page ES-26 – Table ES-2 - Impact FISH-2:** The information/data that evolved into creating an increase in the Wilkins Slough flow criteria needs to be wholly vetted by various peers in the industry before imposing a baseline criteria.

**Page ES-31-32 – Table ES-2 – Impact AG-1:** Prime Farmland/Williamson Contracts Mitigation Measures 1.1 and 2.1, even though Colusa County honors and supports existing contracts, there is no support for new contracts or conservation easements even if existing ones needs to be canceled for furtherance of the project.

**General Comments that should/need to be addressed:**


How many Oaks does it take in a specific area to be considered a “Woodlands”?

I found no mention anywhere in the document referring to Purple Star Thistle, which does exist within the footprint.

Regarding Climate: Temperature ranges within the Sites footprint area and the Valley floor, i.e. Funks Reservoir vary greatly in both summer and winter. Temperatures within the footprint in summer trend higher than indicated in Chapter 9, page 7.

Study area boundaries on the maps in Appendix 9B seem to have some very random alignments, especially in the inundation footprint. Also land cover types don't seem to reflect what does currently exist in numerous locations.

Respectfully submitted,



Gary J. Evans,  
Colusa County Board of Supervisor

---

**From:** Donna Mallen [dmallen190@gmail.com]  
**Sent:** 1/28/2022 11:43:59 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Public comment re: Sites Project

I am very opposed to the disruption of the natural flow of water in the Delta area and the severe impact on the wildlife habitat by the construction of any dam, including the Sites Project, upstream.

A driving force behind this proposed project is the short-sighted idea that our water in California can continue to be sucked out of the Delta and aquifers throughout the state and squandered on high water consumption crops, especially those that are to be marketed out of the country.

As a life-long resident of Southern California, I am being asked to give up public water, and contribute to the extinction of my state's native plants and wildlife, to enable agriculturists' short-term planning that values profit over science and common sense. Climate change will inevitably cause reductions in our water supply.

In San Diego, we are already sacrificing our avocados and other crops we would like to be able to produce, as we formerly did, both as home gardeners and commercial farmers. We are digging up our landscaping and replacing it with more drought tolerant planting (or letting our yards go to weeds and bare dirt). We are saving our rainwater in barrels, taking 1-minute showers and saving the warm-up water in buckets to flush the toilets.

Meanwhile, "corporate agriculture" is unsustainably mono-cropping inappropriate almond orchards and demanding to maintain their hugely disproportionate share of our water. How many more dams and how much more habitat destruction will they be demanding before they recognize that the inevitable reality of climate change is that the depleted watersheds and aquifers and empty dams cannot sustain their profits?

Building a dam is a short-term, stopgap "solution" that should not be allowed.

Donna Mallen

[dmallen190@gmail.com](mailto:dmallen190@gmail.com)

Chula Vista, CA

---

**From:** Mae Ryan Empleo [Legal@semlawyers.com]  
**Sent:** 1/28/2022 12:02:39 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Osha Meserve [Osha@semlawyers.com]  
**Subject:** Comments on the Sites Reservoir Project's Revised Draft Environmental Impact Report & Supplemental Draft Environmental Impact Statement (State Clearinghouse No. 2001112009)  
**Attachments:** 22.01.28 LAND Ltr re Sites Proj.pdf

To Whom It May Concern:

Attached please find the comments submitted on behalf of Local Agencies of the North Delta regarding the Sites Reservoir Project's Revised Draft Environmental Impact Report & Supplemental Draft Environmental Impact Statement (State Clearinghouse No. 2001112009). Should you have questions, please do not hesitate to contact our office. Thank you for your attention to this matter.

Sincerely,

Mae Ryan Empleo  
Legal Assistant  
*Soluri Meserve, A Law Corporation*  
510 8th Street, Sacramento, CA 95814

☎ tel: 916.455.7300 ▪ 📠 fax: 916.244.7300 ▪ ✉ email: [legal@semlawyers.com](mailto:legal@semlawyers.com)

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tel: 916.455.7300 · fax: 916.244.7300  
510 8th Street · Sacramento, CA 95814

January 28, 2022

**SENT VIA EMAIL (EIR-EIS-Comments@SitesProject.org)**

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

**RE: Comments on the Sites Reservoir Project's Revised Draft  
Environmental Impact Report & Supplemental Draft Environmental  
Impact Statement (State Clearinghouse No. 2001112009)**

To Whom It May Concern:

These comments on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement ("DEIR/S") for the Sites Reservoir Project ("Sites") are submitted on behalf of Local Agencies of the North Delta ("LAND").<sup>1</sup> The primary concern of LAND with respect to the Sites project pertains to potential effects on flows entering the Sacramento-San Joaquin Delta via the Sacramento River. Farmers and other beneficial uses in the Delta rely on these freshwater inflows. Any project that may reduce these flows, or change the timing or temperature of these flows, has the potential to interfere with these downstream uses.

The DEIR/S describes bypass flows ranging from 3,250 cubic feet per second ("cfs") to 8,000 cfs at various points where water would be diverted from the Sacramento River to the new reservoir. (DEIR/S, p. 2-31.) Diversion capacity would be 2,100 cfs and 3,000 cfs at the two diversion locations. (DEIR/S, Figures 2-36 and 2-37.) The DEIR/S only presents the simulated reservoir operations and Sacramento flow data as statistical probabilities. The actual simulated daily diversion rates and Sacramento flows at the time of diversion is not disclosed to decision makers and the public. The reader has no way of checking whether diversions are in fact being made during periods of very low river flow and how often. For public review of the project, it is critical to know the values of X2 at the time of each daily diversion.

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<sup>1</sup> LAND is a coalition comprised of reclamation, water and levee maintenance districts covering about 100,000 acres in the northern geographic area of the Delta. Some of these agencies provide both water delivery and drainage services, while others only provide drainage services. These districts also assist in the maintenance of the levees that provide flood protection to homes and farms.



The DEIR/S indicates that a draft of the Reservoir Operations Plan is expected to be completed in late 2021 (DEIR/S, p. 2-42), but it is not clear that has been completed. The lack of a Reservoir Operations Plan hinders the ability of the public to review the potential impacts of the project.

In addition, the modeling for reservoir operations does not use hydrologic data beyond 2003. A longer simulation period (e.g., through 2019), would add a further 16 years, potentially revealing recent changes in historical hydrology due to global climate change. Reservoir operations modeling should also use a daily time step to better reveal flow and water quality impacts. Monthly-averaged flows in the Sacramento River and Delta are not representative of the peak and low flows that can occur within a month.

LAND is also concerned about the cumulative impacts that Sites could have, in conjunction with other projects that propose new diversions on the Sacramento River. One such project is the Delta Conveyance Project or “Delta Tunnel”, which is proposed to have the capacity to divert up to 6,000 cfs. Initial information indicates that the Delta Tunnel is proposing bypass flows of as little as 5,000 cfs. Proposed diversions to Sites, combined with Delta Tunnel diversions, could severely reduce freshwater inflows into the Delta and have significant water quality and other negative impacts on beneficial water uses in the Delta.

Although the Delta Tunnel is mentioned in DEIR/S Chapter 31 as a cumulative project, there is no analysis of the combined effect on Sacramento River flows and water quality of implementing both Sites and the Delta Tunnel. Quantitative example analyses of the two projects operated together should be prepared to inform the public of the possible cumulative impacts of building and operating Sites and the Delta Tunnel. In addition, the Cumulative Impact chapter does not address increases in water transfers that may occur if both the project and the Delta Tunnel were operated. Such transfers would further reduce freshwater flows through the Delta and should be addressed in the DEIR/S as a reasonably foreseeable cumulative project.

Thank you for considering these comments and please feel free to contact me with any questions.

Very truly yours,

**SOLURI MESERVE**

A Law Corporation

By: 

Osha R. Meserve

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 1:10:06 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Subject:** FW: Public Comment on Sites Reservoir

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** MARY KOEPPEN <jmkoeppe@comcast.net>  
**Sent:** Friday, January 28, 2022 12:50 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** mike@ifrfish.org  
**Subject:** Public Comment on Sites Reservoir

I want to add my support to PCFFA's public comment regarding Sites Reservoir.

In addition, Sacramento valley summer and early fall temperatures often exceed 100 degrees. Dumping Sites Reservoir superheated water into the Sacramento River during Sacramento Rall Run Chinook returns or Sacramento Winter Run Chinook out migration assures further restriction of fisheries, more legal expense for all parties, and potential federal interaction if Sacramento Fall and or Spring Run Chinook are listed as threaten or endangered. PCFFA has outlined appropriate mitigation preventing further destruction of a public trust resource.

John Koeppen

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 1:11:51 PM  
**To:** MARY KOEPPEN [jmkoeppe@comcast.net]  
**CC:** mike@ifrfish.org; EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** RE: Public Comment on Sites Reservoir

Thank you John for your comment. We appreciate your input.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** MARY KOEPPEN <jmkoeppe@comcast.net>  
**Sent:** Friday, January 28, 2022 12:50 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** mike@ifrfish.org  
**Subject:** Public Comment on Sites Reservoir

I want to add my support to PCFFA's public comment regarding Sites Reservoir.

In addition, Sacramento valley summer and early fall temperatures often exceed 100 degrees. Dumping Sites Reservoir superheated water into the Sacramento River during Sacramento Rall Run Chinook returns or Sacramento Winter Run Chinook out migration assures further restriction of fisheries, more legal expense for all parties, and potential federal interaction if Sacramento Fall and or Spring Run Chinook are listed as threaten or endangered. PCFFA has outlined appropriate mitigation preventing further destruction of a public trust resource.

John Koeppen

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 1:12:39 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Subject:** FW: COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, SITES RESERVOIR PROJECT, SCH#2001112009, COLUSA, GLENN, TEHAMA, AND YOLO COUNTIES  
**Attachments:** 2001112009\_Sites\_Reservoir\_DEIR0001.pdf

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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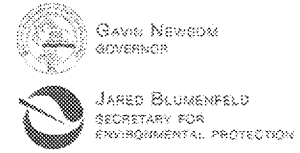
**From:** Minkel, Peter G. @Waterboards <Peter.Minkel2@waterboards.ca.gov>  
**Sent:** Friday, January 28, 2022 12:39 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** Yang, Houa@Waterboards <Houa.Yang@waterboards.ca.gov>; WB-RB5S-chron <RB5S-chron@Waterboards.ca.gov>; State.Clearinghouse@opr.ca.gov  
**Subject:** COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, SITES RESERVOIR PROJECT, SCH#2001112009, COLUSA, GLENN, TEHAMA, AND YOLO COUNTIES

Alicia,

Enclosed are our comments for your Project. Please email if you have any questions.

Pete

Peter Minkel  
401 Water Quality Certification and Dredging Unit  
Central Valley Regional Water Quality Control Board  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670



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## Central Valley Regional Water Quality Control Board

28 January 2022

Alicia Forsythe  
Site Project Authority (SPA)  
P.O. Box 517  
Maxwell, CA 95955  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)

### **COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, SITES RESERVOIR PROJECT, SCH#2001112009, COLUSA, GLENN, TEHAMA, AND YOLO COUNTIES**

Pursuant to the State Clearinghouse's 10 November 2021 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environmental Impact Report* for the Sites Reservoir Project, located in Colusa, Glenn, Tehama, and Yolo Counties.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore, our comments will address concerns surrounding those issues.

#### **I. Regulatory Setting**

##### **Basin Plan**

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of

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DENISE KADARA, ACTING CHAIR | PATRICK PULUPA, EXECUTIVE OFFICER

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11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | [www.waterboards.ca.gov/centralvalley](http://www.waterboards.ca.gov/centralvalley)

Draft\_0014931

Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/basin\\_plans/](http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/)

#### **Antidegradation Considerations**

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:

[https://www.waterboards.ca.gov/centralvalley/water\\_issues/basin\\_plans/sacsjr\\_2018\\_05.pdf](https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_2018_05.pdf)

In part it states:

*Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*

*This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

## **II. Permitting Requirements**

### **Construction Storm Water General Permit**

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml)

### **Phase I and II Municipal Separate Storm Sewer System (MS4) Permits<sup>1</sup>**

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/municipal\\_permits/](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/)

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/phase\\_ii\\_municipal.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml)

### **Industrial Storm Water General Permit**

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/industrial\\_general\\_permits/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml)

### **Clean Water Act Section 404 Permit**

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

### **Clean Water Act Section 401 Permit – Water Quality Certification**

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic

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<sup>1</sup> Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:  
[https://www.waterboards.ca.gov/centralvalley/water\\_issues/water\\_quality\\_certification/](https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/)

#### **Waste Discharge Requirements – Discharges to Waters of the State**

If USACE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:  
[https://www.waterboards.ca.gov/centralvalley/water\\_issues/waste\\_to\\_surface\\_water/](https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/)

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at:

[https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2004/wqo/wqo2004-0004.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf)

#### **Dewatering Permit**

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board’s Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2003/wqo/wqo2003-0003.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf)



For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at:  
[https://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/waivers/r5-2018-0085.pdf](https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf)

**Limited Threat General NPDES Permit**


If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

[https://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/general\\_orders/r5-2016-0076-01.pdf](https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf)

**NPDES Permit**

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: <https://www.waterboards.ca.gov/centralvalley/help/permit/>

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.



Peter G. Minkel  
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research,  
Sacramento

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 1:15:50 PM  
**To:** Jerry Brown [jbrown@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Spranza, John [john.spranza@hdrinc.com]  
**Subject:** FW: California Department of Fish and Wildlife Comment Letter on the Sites Reservoir Project RDEIR/SDEIS  
**Attachments:** CDFW Comment Letter on Sites RDEIR\_SDEIS\_signed.pdf

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>  
**Sent:** Friday, January 28, 2022 12:50 PM  
**To:** EIR-EIS-Comments <eir-eis-comments@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** state.clearinghouse@opr.ca.gov; Dibble, Chad@Wildlife <Chad.Dibble@wildlife.ca.gov>; Thomas, Kevin@Wildlife <Kevin.Thomas@wildlife.ca.gov>; Bartlett, Tina@Wildlife <Tina.Bartlett@wildlife.ca.gov>; Grover, Joshua@Wildlife <Joshua.Grover@wildlife.ca.gov>  
**Subject:** California Department of Fish and Wildlife Comment Letter on the Sites Reservoir Project RDEIR/SDEIS

Dear Ms. Forsythe,

On behalf of Josh Grover, please find attached the California Department of Fish and Wildlife's comments on the Sites Reservoir Project Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.

Best regards,

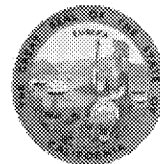
Kristal

**Kristal Davis Fadtke**  
Environmental Program Manager  
Water Branch, Ecosystem Conservation Division  
California Department of Fish and Wildlife  
P.O. Box 944209  
Sacramento, CA 94244-2090  
Office: (916) 376-1987  
Cell: (916) 701-3226



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
Water Branch  
P.O. Box 944209  
Sacramento, CA 94244-2090  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

GAVIN NEWSOM, Governor  
CHARLTON H. BONHAM, Director



January 28, 2022

Alicia Forsythe  
Environmental Planning and Permitting Manager  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)

SITES RESERVOIR PROJECT RECIRCULATED DRAFT ENVIRONMENTAL IMPACT  
REPORT/ SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT  
(RDEIR/SDEIS) SCH# 2001112009

Dear Ms. Forsythe:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Availability of a Recirculated Draft EIR/ Supplemental Draft EIS (RDEIR/SDEIS) from the Sites Project Authority (Authority) for the Sites Project (Proposed Project) pursuant to the California Environmental Quality Act (CEQA) statute and guidelines.<sup>1</sup> It is important to note that CDFW has previously submitted comments to the Authority on January 12, 2018, in response to the Notice of Availability of the Draft EIR prepared on August 10, 2017, as part of an earlier phase of Project development.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Proposed Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Proposed Project for which CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code. CDFW appreciates that with most large projects there may be a continuing effort to analyze impacts and revise the various project alternatives. CDFW remains available for coordination for those purposes.

#### CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically

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<sup>1</sup> CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Alicia Forsythe, Environmental Planning and Permitting Manager  
Sites Project Authority  
January 28, 2022  
Page 2

sustainable populations of those species. (*Id.*, § 1802.) Similarly for purposes of CEQA, CDFW provides, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW may also act as a **Responsible Agency** under CEQA. (Pub. Resources Code, §21069; CEQA Guidelines, § 15381.) The Proposed Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent the Proposed Project's implementation may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), such activities are prohibited by the Fish and Game Code. CDFW also administers the Native Plant Protection Act, Natural Community Conservation Program, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.

## PROJECT DESCRIPTION SUMMARY

**Proponent:** Sites Reservoir Authority

**Project Overview:** In October 2019, the Authority pursued a value planning process to refine Proposed Project construction and operational alternatives presented in the 2017 Draft EIR/EIS. Through the value planning process, the Authority selected three alternatives for assessment in the RDEIR/SDEIS (i.e., a 1.5 MAF Sites Reservoir, alternatives 1 & 3 and a 1.3 MAF Sites Reservoir, alternative 2), in addition to a No Project/ No Action Alternative. Proposed Project alternatives 1 & 3 differ only in the level of investment by the Bureau of Reclamation (Reclamation), with Reclamation investing up to 7% in the Proposed Project under alternative 1, versus 25% under alternative 3. Alternative 1 is the Authority's preferred alternative. Consistent to all alternatives, the Proposed Project would use existing infrastructure to divert water from the Sacramento River at Red Bluff and Hamilton City and convey water to the new off stream Sites Reservoir approximately 10 miles west of the town of Maxwell, in Glenn and Colusa counties, California. New and existing facilities would move water out of the reservoir via existing canals and a new pipeline located near Dunnigan, eventually returning water to the Sacramento River system downstream. The 1.5 MAF Project alternative would include two dams, seven saddle dams, and two saddle dikes with construction of a bridge crossing the reservoir and construction of the Dunnigan Pipeline extending from the Tehama-Colusa (TC) Canal to the Colusa Basin Drain (CBD). The 1.3 MAF Project alternative would include two dams, four saddle dams, and three saddle dikes with construction of a bypass road and the Dunnigan Pipeline extending to the Sacramento River allowing the Sacramento River to serve as the primary release location with only partial discharges to the CBD. Components of the individual Proposed Project alternatives could be interchanged as determined necessary by the Project.

Alicia Forsythe, Environmental Planning and Permitting Manager  
Sites Project Authority  
January 28, 2022  
Page 3

**Location:** The Proposed Project area (Figure 1) for the purposes of CEQA includes the inundation area of Antelope Valley (between 13,200 and 12,600 acres) located in Glenn and Colusa counties, and Project components located in Tehama County, Glenn County, Colusa County, and Yolo County. The Proposed Project would influence biological resources in the Sacramento River, Colusa Basin Drain, Funks Creek, Stone Corral Creek, Hunters Creek, Feather River, American River, and Delta, as well as both Sutter and Yolo bypasses.

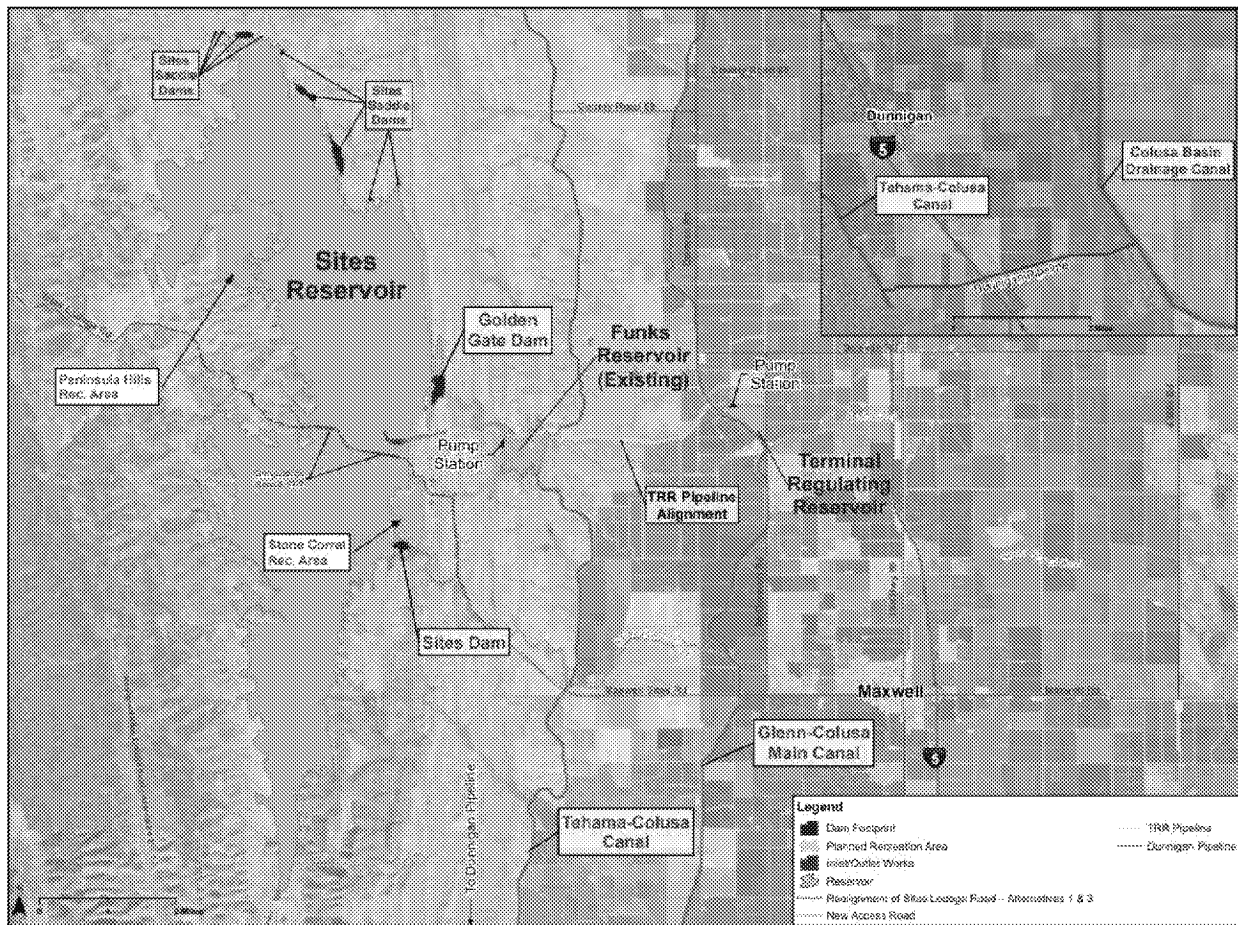


Figure 1: Proposed Project Location and Facilities (Sites Reservoir Project RDEIR/SDEIS Fact Sheet 2021).

Alicia Forsythe, Environmental Planning and Permitting Manager  
Sites Project Authority  
January 28, 2022  
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## **OVERVIEW OF ATTACHED COMMENTS**

CDFW appreciates the Authority's continued effort to address the impacts of the Proposed Project on the State's biological resources. CDFW offers the comments and recommendations in the attached Appendix to assist the Authority in its role as lead agency in adequately identifying and mitigating the Proposed Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife resources. The comments and recommendations are also offered to aid the Authority in identifying a reasonable range of alternatives that would avoid or minimize adverse impacts.

Consistent with CDFW's trustee role, the attached comments address all fish and wildlife resource areas. However, CDFW acknowledges the Proposed Project's potential impacts on aquatic species are of particular note. Therefore, CDFW prioritized efforts to address those impacts. While the attached comments are extensive, CDFW understands the Authority is seeking all possible input and CDFW strove to be thorough in the review of the RDEIR/SDEIS in order to be of the greatest assistance to the Authority. CDFW looks forward to continuing to work with the Authority to refine the Proposed Project and associated mitigation measures.

## **ENVIRONMENTAL DATA**

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link: [http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB\\_FieldSurveyForm.pdf](http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB_FieldSurveyForm.pdf). The completed form can be mailed electronically to CNDDDB at the following email address: [CNDDDB@wildlife.ca.gov](mailto:CNDDDB@wildlife.ca.gov). The types of information reported to CNDDDB can be found at the following link: [http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).

## **FILING FEES**

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

Alicia Forsythe, Environmental Planning and Permitting Manager  
Sites Project Authority  
January 28, 2022  
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## CONCLUSION

Pursuant to Public Resources Code §21092 and §21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the Proposed Project. Written notifications should be directed to: California Department of Fish and Wildlife P.O. Box 944209, Sacramento, CA 94244-2090. CDFW appreciates the opportunity to comment on the RDEIR/SDEIS to assist in identifying and mitigating Proposed Project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Questions regarding this letter or further coordination should be directed to Kristal Davis Fadtke, Environmental Program Manager, at (916) 701-3226 or [Kristal.Davis-Fadtke@wildlife.ca.gov](mailto:Kristal.Davis-Fadtke@wildlife.ca.gov).

Sincerely,

DocuSigned by:  
  
703E59B6647A462...

Joshua Grover, Chief  
Water Branch

Enclosures: Appendix A - Comments and Recommendations  
Appendix B – References

ec: State Clearinghouse, [state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)

### California Department of Fish and Wildlife

Chad Dibble, Deputy Director  
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[Chad.Dibble@wildlife.ca.gov](mailto:Chad.Dibble@wildlife.ca.gov)

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Tina Bartlett, Regional Manager  
Northern Region  
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Kristal Davis Fadtke, Environmental Program Manager  
Water Branch  
[Kristal.Davis-Fadtke@wildlife.ca.gov](mailto:Kristal.Davis-Fadtke@wildlife.ca.gov)

## Appendix A – Comments and Recommendations

Chapter or Appendix - Section	Page(s)	Comments and Recommendations
Chapter 1 - Section 1.1, Sites Project Authority	p. 1-2	The RDEIR/SDEIS states that "[California Department of Water Resources] DWR, on behalf of the State of California, is also a non-voting member of the Reservoir Committee. The State of California would provide funding through the California Water Commission (CWC) for the Project and receive ecosystem, recreation, and flood control benefits from the Project" (p. 1-2). While DWR is a member of the Reservoir Committee, they do not represent the State's interests in administration of ecosystem benefits. Suggest removing "on behalf of the State of California" since DWR will not be administering ecosystem benefits.
Chapter 2 - Section 2.4, No Project/No Action Alternative	pp. 2-7,8	The RDEIR/SDEIS states, "Because none of the facilities would be constructed or operated, the No Project Alternative would not materially change conditions as compared to existing conditions. Section 3.2.1 describes how the reasonably foreseeable future conditions under the No Project Alternative would not be materially different from the existing conditions that were used as the environmental baseline. The No Project Alternative assumes the same regulatory criteria as existing conditions" (pp. 2-7,8). The purpose in the California Environmental Quality Act (CEQA) of the No Project Alternative is to allow decision makers to compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. As a result, there could be a difference between existing conditions (i.e., baseline conditions) and the No Project Alternative. The No Project Alternative should include an analysis that is comparable to the other Project Alternatives, considering changing conditions such as climate change and/or include reasonably foreseeable future project or operational changes, such as the Delta Conveyance Project (DCP). Existing conditions should be a set point in time (typically the Notice of Preparation or the current conditions at the time of analysis). It is important a project assess the baseline conditions in the proposed area including the continuing trends in those conditions (i.e., the No Project Alternative) to evaluate both future impacts and benefits of a project. California Department of Fish and Wildlife (CDFW) recommends the Authority include a separate analysis in the Final Environmental Impact Report/ Final Environmental Impact Statement (FEIR/FEIS) considering a No Project Alternative which incorporates climate change projections and foreseeable future projects or operational changes that will impact water supply or water quality, additional to the existing baseline.
Chapter 2 - Project Description and Alternatives	General Comment	Alternative 1, 2, and 3 in the RDEIR/SDEIS all have the same operational diversion criteria. CDFW finds the Proposed Project, as currently described, and the mitigation measures currently proposed in the RDEIR/SDEIS are not sufficient to reduce impacts to less than significant for salmonids, Delta Smelt, and Longfin smelt (see CDFW comments on Chapter 11 impact analyses and mitigation measures). CDFW recommends the FEIR/FEIS include an Alternative with operational criteria that both meets Proposed Project objectives and includes bypass flow criteria at Wilkins Slough of at least 10,712 cfs across the entire salmonid migration period of October to June, in addition to the other currently proposed operational diversion criteria, to minimize impacts to aquatic resources.



## Appendix A – Comments and Recommendations

Chapter or Appendix - Section	Page(s)	Comments and Recommendations
Chapter 2 - Section 2.5.1.1, GCID Main Canal Diversion and System Upgrades	p. 2-9	The RDEIR/SDEIS states that " <i>The Project would involve the installation of a new 3,000-cfs GCID Main Canal head gate structure about 0.25 mile downstream of Hamilton City Pump Station</i> " (p. 2-9). However, the existing head gate structure would be left in place to continue to serve as a bridge and continue to be operated during construction of the new head gate. The FEIR/FEIS should include the monitoring protocols necessary to ensure the new setbacks do not increase fish entrainment.
Chapter 2 - Section 2.5.1.2, Funks Reservoir	p. 2-13	The RDEIR/SDEIS states that " <i>The Project would not alter the footprint of Funks Reservoir; however, 740,000 cubic yards of sediment that has accumulated since its constructed would be excavated from the reservoir</i> " (p. 2-13). This could significantly impact native fish species that may be present in the reservoir. CDFW recommends listing existing fish population in Funks reservoir, detailing the work window when the excavation will occur, and where the excavated material will be deposited.
Chapter 2 - Section 2.5.1.4, Inlet/Outlet Works	p.2-17	Insufficient information was provided to assess whether the I/O Tower port elevations will provide sufficient flexibility in the management of water temperature and/or water quality. CDFW recommends conducting an analysis of operational flexibility resulting from the proposed port locations for inclusion in the FEIR/FEIS.
Chapter 2 - Section 2.5.1.4, Dams and Dikes	p. 2-20	The RDEIR/SDEIS states that " <i>Water in Stone Corral Creek would be diverted directly into the creek diversion pipeline through the Sites Dam abutment and re-enter the creek channel on the east side of the Sites Dam work area. The outlet tunnel with two 84-inch-diameter fixed cone valves would accommodate these releases, and an energy dissipating chamber would reduce the velocity of the water released</i> " (p. 2-20). CDFW recommends the FEIR/FEIS include provisions to monitor the velocities and temperatures of water releases into Funks and Stone Corral creeks.
Chapter 2 - Section 2.5.1.5, Dunnigan Pipeline	p. 2-22	The RDEIR/SDEIS states that " <i>construction would include open cut of approximately 100 feet to cross Bird Creek in the dry season</i> " (p. 2-22). CDFW recommends that the FEIR/FEIS include baseline conditions for Bird Creek in the Proposed Project analysis.
Chapter 2 - Section 2.5.1.6, Recreation Areas	p. 2-22	CDFW recommends defining what exact uses are planned for the recreation area regarding angling and hunting. The reservoir is likely to attract a large contingent of migratory waterfowl, deer, dove, and turkey populations. The fluctuating water level will likely result in regions of green vegetation due to receding water, creating a potential for increased tule elk usage. CDFW recommends considering coordination and use of lawful public hunting to manage increased populations.
Chapter 2 - Section 2.5.1.7, New and Existing Roadways	p. 2-23	The RDEIR/SDEIS states that " <i>It is anticipated that all construction activities associated with the recreation areas would occur within the footprints of the recreation areas and the temporary and permanent access road areas</i> " (p. 2-23). The RDEIR/SDEIS should include details on what restoration activities are planned for areas impacted by temporary access roads.

## Appendix A – Comments and Recommendations

Chapter or Appendix - Section	Page(s)	Comments and Recommendations
Chapter 2 - Section 2.5.1.7, Construction Access	p. 2-27	The FEIR/FEIS should disclose Proposed Project impacts related to increased traffic. If these impacts are considered significant, the FEIR/FEIS should disclose additional avoidance, minimization and or mitigation measures to offset the impacts.
Chapter 2 - Section 2.5.2.1, Water Operations	p. 2-29	The timing and magnitude of reservoir releases for Storage Partners along the Colusa Basin Drain (CBD), Yolo Bypass, and North Bay Aqueduct is unclear. The RDEIS/SDEIS states that reservoir releases for Storage Partners <i>"would generally be made from May to November but could occur at any time of the year, depending on a Storage Partner's need and capacity to convey water to its intended point of delivery"</i> (p. 2-29). However, all analyses related to flow deliveries through the Yolo Bypass were limited to the August-October time-period. CDFW recommends providing more detail about the timing and magnitude of releases for Storage Partners along the CBD, Yolo Bypass, and North Bay Aqueduct. If the timing and/or magnitude of these releases are substantially different from the proposed <i>"habitat flows"</i> from August-October, additional analyses on the potential impacts of moving that water through the region is needed.
Chapter 2 - Section 2.5.2.1, Diversion to Sites Reservoir	p. 2-30	The RDEIR/SDEIS states that <i>"up to 2,100 cfs, plus losses would be diverted at the RBPP for the Project"</i> (p. 2-30). CDFW recommends the FEIR/FEIS explains what is meant by the term <i>"losses"</i> and quantifies the magnitude of these losses.
Chapter 2 - Section 2.5.2.1, Water Operations, Bend Bridge Pulse Protection	pp. 2-31, 32	The RDEIR/SDEIS included a pulse protection that is flow based because real-time fish monitoring and presence-based pulse operational adjustments cannot be captured in a model. Commonly, the intention of a pulse flow protection measure is to protect pulses of fish migration rather than pulses of water, with flow-based pulse protection modeled as a proxy for real-time fish presence-based protection. Similarly, real-time fish monitoring and associated criteria are the norm rather than the exception for large scale diversion projects in the Sacramento-San Joaquin Delta ecosystem (CDFW 2019 State Water Project Incidental Take Permit (ITP), United States Bureau of Reclamation (USBR) 2019 Biological Assessment (BA)). CDFW supports the inclusion of pulse flow protection in the operation of the Proposed Project and anticipates working with the Authority to develop a process to implement this measure in real time based on fish presence.
Chapter 2 - Section 2.5.2.1, Diversion to Sites Reservoir	p. 2-32	A ramping schedule will need to be developed to ensure that when pumping resumes upon cessation of the pulse event, flows in the river are not decreased at such a rapid rate that fish are adversely impacted.
Chapter 2 - Section 2.5.2.1, Diversion to Sites Reservoir	p. 2-32	Three Core-1 Central Valley (CV) spring-run tributaries, two Core-2 CV spring-run tributaries, 3 Core-1 CV steelhead tributaries and 2 Core-2 CV steelhead tributaries (Antelope, Mill, Deer, Big Chico, and Butte Creeks) enter the Sacramento River downstream of Red Bluff Diversion Dam (RBDD). The Adaptive Management Plan and fish monitoring program should take these into consideration and use existing or new juvenile monitoring programs to inform Proposed Project operations.

## Appendix A – Comments and Recommendations

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Chapter 2 - Section 2.5.2.1, Water Operations	p. 2-35	The RDEIR/SDEIS states, “ <i>The Authority is currently working with Reclamation and DWR to establish operating principles with both agencies that would describe the details of the coordination and collaboration that would take place during the operation of the Project</i> ” (p. 2-35). Coordinating operations between the Proposed Project, Central Valley Project (CVP), and State Water Project (SWP) is complicated and there could be unintended consequences resulting from proposed water transfers and exchanges. Little detail is provided describing coordinated operations between the three entities, which hinders the evaluation of potential impacts of the Proposed Project. The information provided suggests that there may be impacts associated with the proposed coordinated operations.
Chapter 2 - Section 2.5.2.1, Shasta Lake Exchanges	p. 2-36	The critical months for cold water pool management are incorrectly listed as August through September. CDFW recommends correcting this statement in the FEIR/FEIS and any subsequent analyses to cover the critical period for cold water pool management of August through November.
Chapter 2 - Section 2.5.2.1, Funks Creek and Stone Corral Creek Releases	p. 2-38	CDFW recommends the Proposed Project consider including all perennial creeks and rivers potentially impacted in the baseline studies. CDFW requests that all baseline data (not synthesized data) be shared with CDFW.
Chapter 2 - Section 2.5.2.4, Reservoir Management Plan	p. 2-43	CDFW recommends the development of a site-specific Aquatic Invasive Species Management Plan, coordinated with CDFW.
Chapter 2 - Section 2.5.2.4, Reservoir Management Plan	p. 2-43	CDFW recommends the development of a site-specific Fisheries Management Plan, coordinated with CDFW.
Chapter 2 - Section 2.5.2.4, Recreation Management Plan	p. 2-43	CDFW recommends considering hunting and firearm use, and their respective limitations or regulations, within the Recreation Management Plan. CDFW recommends considering the management and regulation of public use facilities to discourage habituation of wildlife to people.
Chapter 5 - Hydraulic Modeling Results	General Comment	The RDEIR/SDEIS presented hydrologic modeling results as averaged percent changes in flow and storage by water year type. Averaged results across water year type can obscure potentially significant impacts as there can be substantial hydrologic variation within the same water year type. CDFW recommends that the Proposed Project examine and present the results of individual years on the extreme ends of the water year type classification, wet and critically dry, to provide a better understanding of the magnitude of range in flow and storage under the different alternatives. The Proposed Project’s hydrologic analysis suggests that the greatest impacts from Proposed Project operations occur in drier years. CDFW recommends that the Proposed Project analyze and discuss the potential impacts from Proposed Project operations under successive dry and critically dry years in the FEIR/FEIS, as there is the potential that under drought conditions impacts from the Proposed Project may be compounded and warrant additional avoidance, minimization, and mitigation measures.

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Chapter 5 - Section 5.3, Hydrologic Modeling Methods	p. 5-26	The CalSim II model does not include inflow or outflow for Funks and Stone Corral creeks. The USRDOM should include estimates for these, as well as "emergency spill" operations, minimum flows in the creeks, and channel maintenance pulses (if proposed). As the operational requirements are drafted and refined, a detailed operations model is needed that includes all inflows and outflows of the Proposed Project.
Chapter 5 - Section 5.4.1, CALSIM	General Comment	The CalSim II model uses a monthly time step leading to the use of monthly averaged flow data as inputs. Proposed Project diversion operations are most likely to occur on a sub-monthly time step targeting specific flow events with many associated impacts likewise occurring on a sub-monthly flow event specific basis; therefore, the use of average monthly flow data is unlikely to capture the relative peak timings of flows and outmigration of the more vulnerable life stages. Similarly, the use of summary statistics as inputs and grouping of results can dampen the level of modeled effect fish may experience at a smaller time scale, which may underestimate the actual impact of modeled operations on fish survival. As such, presentation of results in this format coupled with analysis dependent on CalSim II monthly average flow inputs may be incapable of detecting, accurately quantifying, or portraying the comparative effect of significant impacts of Proposed Project operations alternatives on fish species (Simenstad et al. 2017).
Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology	pp. 5-30, 5-33	The Proposed Project would exchange water with Shasta Lake to help preserve the cold water pool and provide benefits to anadromous fish. The hydrologic analyses presented in the RDEIR/SDEIS (Table 5-11, p. 5-30) shows on average no increases in Shasta Lake storage in wet years and minimal increases (2-4%) on average in critically dry years, while flow on the Sacramento River decreases by 10-11%, on average, in May (Table 5-16, p. 5-33) of critically dry years due to the exchanges, when compared with the No Action Alternative. There are many factors that affect Shasta Lake cold water pool management and preserving relatively small volumes of water in Shasta Lake in the spring and summer will not necessarily result in meaningful temperature benefits later in the year. CDFW is concerned that any benefit derived from these exchanges may be overshadowed by the adverse impacts to anadromous fish caused by the reduction in flow on the Sacramento River, due to exchanges, in the spring of critically dry years.
Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology	p. 5-33	The RDEIR/SDEIS shows potentially significant adverse impacts to aquatic biological resources due to Proposed Project diversions on the Sacramento River during the October-June period for Alternatives 1, 2, and 3. CDFW is concerned that reductions in flow due to Proposed Project operations are most pronounced in critically dry years, when biological aquatic resources are stressed and most vulnerable to further reductions in flow. For example, Table 5-16 (p. 5-33) shows an average 5-11% reduction in flow in critically dry years, near Wilkins Slough, for the period between December-May when flows during that time are on average already significantly below the 50% survival threshold of 10,712 cfs (Michel et. al. 2021) for juvenile Chinook salmon. Adverse impacts, caused by the reduction of flow from Proposed Project diversions, are likely to occur to many aquatic species, not just juvenile Chinook salmon, already stressed in the Sacramento River system. As a result, CDFW recommends the Proposed Project increase minimum bypass flow requirements to reduce the adverse impacts of diversions to less than significant.

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Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology	p. 5-36	The Proposed Project proposes exchanges that would preserve storage and the cold water pool in Lake Oroville for use later in the season (August and September). The preservation of the cold water pool in Lake Oroville is generally not an issue of concern given the depth of the reservoir and sufficient volume of cold water through the summer. CDFW is concerned that these exchanges could alter flows on the Feather River adversely impacting biological aquatic resources. For example, the Proposed Project increases flow in the fall of critically dry years by 5-25% (Table 5-23, p. 5-36), which could result in the dewatering of fall-run Chinook salmon redds and steelhead redds when flows recede. The RDEIR/SDEIS's hydrologic analysis also shows flow declines of 3-14% (Table 5-23, p. 5-36) on the Feather River in critically dry years, in the months of June and July, which has the potential to adversely impact migrating and emigrating spring-run Chinook salmon and green sturgeon. CDFW is also concerned that the proposed exchanges could interfere with Oroville Reservoir operations, potentially impacting future planned ecosystem water releases out of the reservoir. CDFW recommends that the FEIR/FEIS include a detailed analysis of the effects of the proposed exchanges on Oroville Reservoir operations, to assess potential impacts and weigh the costs versus benefits of conducting the proposed exchanges.
Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology	p. 5-37	Folsom Lake Exchanges could potentially lead to decreased releases from Folsom Lake in the spring and early summer, which could result in decreased rearing habitat and elevated temperatures for steelhead. The RDEIR/SDEIS's hydrologic analysis shows further cause for concern as flows on the American River in the spring and summer of critically dry years decrease on average by 1-9% (Table 5-25, p. 5-37), under the preferred action alternative. Additionally, higher releases in the fall often result in fall-run Chinook salmon redd dewatering when flows cannot be maintained for egg-incubation through to emergence. CDFW recommends that the FEIR/FEIS include a detailed analysis of spring, summer, and fall releases from Folsom Lake to assess potential impacts that may result from the proposed exchanges with the Proposed Project.
Chapter 6- Surface Water Quality	General Comment	Water quality analyses depend on models that use outputs from CalSim II, for which the output is on a monthly time step. However, daily and weekly changes to water quality can often have lethal or sub-lethal effects on aquatic resources, which a monthly time step cannot capture. Although the timestep for the Sacramento River temperature model (HEC-5q) is 6-hours, the inputs and outputs were monthly-averaged. To adequately analyze and disclose potentially significant impacts, CDFW recommends that the RDEIR/SDEIS's analyses of water quality impacts include a daily time series analysis. Additionally, the worst-case conditions must be analyzed on a daily time-step, e.g., Sacramento River daily maximum temperature increases in summer due to maximum allowable diversions.
Chapter 6 - Section 6.2.2.6, Harmful Algal Blooms (HABs)	p. 6-23	Harmful algal blooms (HABs) include a wide range phytoplankton such as diatoms and dinoflagellates, in addition to cyanobacteria. Cyanotoxins may be present in water, sediment, and biological organisms even if a bloom isn't observed. Microcystis is the dominant cyanobacteria in California, but Aphanizomenon and Dolichospermum are becoming more abundant (Lehman et al. 2021). CDFW recommends that the FEIR/FEIS consider other potential sources of HABs in its analysis.

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Chapter 6 - Section 6.3.2.5, Water Temperature	p. 6-34	Model limitations may obscure the magnitude of the Proposed Project's temperature impacts to the Sacramento River. The Sites reservoir temperature model does not include inflows or outflows for Funks Creek or Stone Corral Creek. It is assumed that the reservoir will stratify as a typical Northern California Reservoir, but the pump outlet location and flat topography (higher winds) may lead to a well-mixed reservoir. An example from another "off-channel" storage project, the San Luis Reservoir Draft Resource Management Plan (2012, p. 2-19) states " <i>Because of constant pumping and mixing of its water, San Luis Reservoir does not typically develop a thermocline.</i> " CDFW recommends further analysis on the Proposed Project's stratification potential.
Chapter 6 - Section 6.3.2.5, Water Temperature	p. 6-34	The RDEIR/SDEIS's temperature modeling does not consider agricultural runoff, which may increase the solar radiation potential of the discharged water. Warm releases from the Proposed Project are targeted for rice farming, and this water will warm further on the rice fields, which presumably will be returned to the Yolo Bypass and/or Sacramento River. This has the potential to impact water quality in the Yolo Bypass and Sacramento River through reductions in dissolved oxygen and increases in water temperature. CDFW recommends that the FEIR/FEIS include an analysis of the effects of agricultural runoff, resulting from Project operations, on dissolved oxygen levels and water temperature.
Chapter 6 - 6.3.2.8, Harmful Algal Blooms (HABs)	pp. 6-37, 38	The RDEIR/SDEIS takes into consideration reservoir water levels and potential effects of HABs. However, it is unclear and unlikely that the reservoir modeling conducted can evaluate whether or not HABs or toxins will be released from the reservoir. CDFW recommends the creation of a monitoring plan of phytoplankton and cyanotoxins that includes the reservoir and downstream locations.
Chapter 6 - Section 6.3.2.9, Mercury and Methylmercury	p. 6-38	CDFW suggests that the FEIR/FEIS provide additional analysis on the potential impacts of increased flooding on methylmercury formation in the Yolo Bypass due to August-October flows and releases for Storage Partners. Table 11-13 (p.11-115) indicates that Yolo Bypass flooding could increase by hundreds of acres between August-October due to these flows, which would potentially increase methylmercury formation. Releases for Storage Partners along the CBD, Yolo Bypass, and North Bay Aqueduct may also impact methylmercury formation if releases are not contained within the Tule Canal/Toe Drain.

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Chapter 6 - Impact WQ-2, Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality During Operation	p. 6-72	The RDEIR/SDEIS states that “ <i>Sites Reservoir releases to the Yolo Bypass would not be expected to violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality in Yolo Bypass . . . with regard to . . . [Dissolved Oxygen] DO</i> ” (p. 6-72). CDFW disagrees with this conclusion as DWR’s recent synthesis report for the North Delta Food Subsidy study from 2013-2019 showed DO levels in the Yolo Bypass Toe Drain at Lisbon Weir were reduced during the flow pulse in all years (Davis et al. 2021). As indicated in Appendix 6A, the CBD and Knights Landing Ridge Cut (KLRC) are both on the 303(d) List of Impaired Water Bodies for DO. Conveying water through the CBD and KLRC has the potential to transport low-DO water downstream into the Yolo Bypass. The proposed Yolo Bypass habitat flows will occur within a three-month period between August-October, potentially impacting DO levels in the Yolo Bypass during the entire release period. Releases for Storage Partners along the CBD, Yolo Bypass, and North Bay Aqueduct may also impact DO levels. CDFW recommends providing additional analysis on the potential impacts of transporting water through the Yolo Bypass on DO levels. CDFW suggests including relevant findings from the 2013-2019 North Delta Food Subsidy study related to DO.
Chapter 6 - Impact WQ-2, Sites Reservoir	pp. 6-88, 89	The RDEIR/SDEIS considers that the concentration of cyanotoxins would depend on the magnitude of the bloom, but the assumptions listed in the RDEIR/SDEIS for considering causes of concern are overly simplistic. Microcystis has a pelagic and benthic state. Microcystins can be found in water, sediment, and biological organisms. Latour et al. 2007 found benthic Microcystis colonies at 70 centimeters deep in sediment, with an approximate age of 14, suggesting Microcystis and its toxin can persist in lake sediments. Biodegradation does occur but it depends on other conditions such as adsorption rate, temperature, and pH. A strain of microcystin, Microcystin-LR, has high affinity to organic matter (Wu et al. 2011; Pawlick and Kornijo et al. 2010). Dissolved microcystins can adsorb to suspended particulate matter as a pathway of transport to downstream regions, including marine environments. (Liu et al. 2008). Bivalves, or clams, can have long depuration phase of removing toxins as found in Miller et al. 2010 and Gobble et al. 2016. CDFW recommends that the Proposed FEIR/FEIS acknowledge the complexities of cyanobacteria as being both pelagic and benthic. Cyanotoxins are extremely complex and while they may biodegrade and photodegrade, they can be present in water, suspended sediment, bottom sediment, and biological organisms.
Chapter 6 - Impact WQ-2, Yolo Bypass and The Delta	p. 6-90	Aulacoseira is a diatom, which is considered a good food source in general. However, results from Jungbluth et al. 2020, suggests Aulacoseira may not serve as an accessible food source. The North Delta Food Subsidy Synthesis (Davis et al. 2021) found the flow action in 2016 significantly lowered biovolume (Figure 4-1 and Table 4-2). While Aulacoseira was detected in downstream stations, it is unlikely that it was transported from the north due to the flow action since Aulacoseira was observed at very low levels at the upstream stations. Frantzich et al. 2021 conclude phytoplankton taxa were not significantly different before, during, and after the flow pulse.

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Chapter 6 - Impact WQ-2, Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality During Operation	p. 6-90	The RDEIR/SDEIS states that <i>“according to the [Harmful Algal Blooms] HABs voluntary reports database (California HABs Portal maintained by the California Water Quality Monitoring Council; State Water Resources Control Board 2021a) HABs have not been reported in Yolo Bypass in previous years.”</i> (p. 6-90) Microcystis has been observed in the north delta and Yolo Bypass areas in the datasets from the following sources: DWR’s Yolo Bypass Fish Monitoring Program; DWR’s North Central Region Office dataset; CDFW’s Fall Midwater Trawl Survey; and CDFW’s Summer Towner Survey. The California HABs portal currently is missing all or most of Interagency Ecological Program data. CDFW suggests that the Proposed Project incorporates this information into their impact analysis in the FEIR/FEIS.
Chapter 6- Pesticides	pp. 6-91, 92	The RDEIR/SDEIS states that <i>“there is still some uncertainty about whether augmented flows through the Yolo Bypass could cause increases in pesticide levels in the bypass that might be detrimental to fish or could cause increases in pesticide levels in plankton within the bypass that may provide food for fish in the Cache Slough Complex”</i> (p. 6-91,92). CDFW agrees that there is uncertainty surrounding this issue but is concerned that the RDEIR/SDEIS’s pesticide impact analysis is based on a qualitative rationale that only considers why <i>“Sites Reservoir releases through the Yolo Bypass could have a limited effect on pesticides in the Delta”</i> (p. 6-91). There is evidence to suggest that increased flows through the Yolo Bypass could increase pesticide concentrations and that exposure to these pesticides could adversely impact aquatic biological resources. Davis et al. 2021, found significantly higher pesticide concentrations in water and zooplankton during flow pulses (Figure 3-60 and Figure 3-62). In some cases, pesticides detected exceeded EPA aquatic life benchmarks for chronic and acute toxicity. Additionally, synergistic or additive effects of pesticides, along with other stressors, may have a significant adverse impact on biological aquatic resources. 11A.1.8.4 of the RDEIR/SDEIS states that <i>“sturgeon are at risk of harmful accumulations of toxic pollutants in their tissues, especially pesticides such as pyrethroids and heavy metals such as selenium and mercury (Israel and Klimley 2008; Stewart et al. 2004)”</i> (p. 11A-56). Additionally, Fong et al. 2016, noted that Delta Smelt populations and other pelagic organisms are in decline likely due to the effects of multiple stressors. CDFW recommends that the FEIR/FEIS’s impact analysis consider the potential impacts that may occur should the Proposed Project operations increase pesticide levels through the Yolo Bypass. CDFW also recommends that the FEIR/FEIS consider adding a section to the Water Quality chapter discussing impacts that could occur as a result of synergistic effects from multiple stressors related to water quality.
Appendix 6D - Section 2.1.2, Modeling Input Data	p. 6D-2	The only meteorological input mentioned for the CE-QUAL W2 model is evaporation, which itself was not mentioned or detailed in Appendix 5B or its references. Typically, reservoir temperature models also require wind direction and speed, air temperature, and solar radiation as meteorological inputs. CDFW recommends including more meteorological inputs to CE-QUAL W2 to increase confidence in the results or expand on the description of inputs if others were included in the model.



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Chapter 7 - Impact FLV-1, Substantially Alter the Existing Drainage Pattern of the Site or Area	p. 7-1	The Proposed Project is estimated to have a 2% reduction in suspended sediment as a result of direct diversions from the Sacramento River. This analysis does not consider the additional sediment reduction from the impoundment of sediment due to the 12,000-acre drainage area of Sites Reservoir itself. CDFW recommends analyzing the impacts due to the reduction in sediment and if necessary, mitigating for reduced sediment supply in the Delta in the FEIR/FEIS.
Chapter 7 - Section 7.3.2, Operation	p. 7-10	The RDEIR/SDEIS used suspended sediment transport, bedload, and river meandering models that <i>“were previously utilized in the 2017 Draft EIR/EIS for a 1.8-MAF reservoir with a Delevan Intake location on the Sacramento River”</i> (p. 7-10). The RDEIR/SDEIS states that the previous model results are valid for the Proposed Project, because <i>“the previous modeling results are generally conservative (i.e., higher in volume) relative to the amount of diverted water (and sediment) being considered under Alternatives 1, 2, and 3”</i> (p. 7-10). However, while the overall amount of water being diverted has decreased in comparison to the previous configuration of the Proposed Project, the amount of water being diverted further upstream has increased to compensate for the loss of the Delevan Intake. This could result in impacts that are not captured in the current modeling. CDFW recommends that the modeling be updated to reflect the current configuration of the Proposed Project.
Chapter 7 - Section 7.3.2, Operation	p. 7-10	The RDEIR/SDEIS states that <i>“the flood metrics evaluated are monthly average flows exceeded 10% of the time because this is the percent of time during which flows are relatively high and most of the geomorphic work would be performed on the Sacramento River system. These values are very close to the 2-year flood event at each station”</i> (p. 7-10). CDFW believes that the 10% exceedance of monthly averaged flow does not have a significant meaning for geomorphic work. No supporting documentation is provided that shows that the flow values are close to the 2-year flood event. It is incorrect to assert that a change to the 2-year peak flow (50% annual exceedance probability) is equivalent or proportional to a change in the monthly-averaged 10% exceedance value. CDFW recommends that the Proposed Project complete an impact analysis using changes to 1.5 or 2-year peak flows (67% or 50% annual exceedance probability, respectively).

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Chapter 8 - Groundwater Resources	General Comment	<p>The RDEIR/SDEIS relies on modeling from the 2017 DEIR/DEIS. The baseline conditions, as well as the alternatives, have changed since groundwater modeling was last completed. The timing and magnitude of diversions, and reservoir depth and storage all have an impact on the groundwater modeling results. The models used (CalSim, CVHM, and SACFEM) are large in geographic scope, and may not be calibrated well to local hydrology and monitoring wells. No information was provided about the localized calibration or validation of these models. For example, CalSim II does not include any local inflow to the Proposed Project, nor releases to Funks or Stone Corral creeks. Additionally, the RDEIR/SDEIS states <i>“because diversions required to operate a larger reservoir capacity would have minimal effects on groundwater elevation and groundwater/surface water interaction (Section 8.3.2, Operation), it is reasonable to assume these effects would be even smaller under Alternatives 1, 2, and 3 because less water would be diverted for operations”</i> (p. 8-15,16). While the RDEIR/SDEIS considers a smaller reservoir, it has also eliminated the Delevan diversion point and diversion rates at the two remaining diversion points may be higher than modeled. Therefore, the potential impact to groundwater elevations and river stage is unknown but will likely be greater than originally modeled. CDFW recommends that the Authority update the modeling to reflect the Proposed Project’s current configuration and that local impacts to groundwater be modeled with the state-of-the-art and locally focused groundwater model used by the Colusa Groundwater Authority for the Colusa Subbasin: CV2SimFG-Colusa.</p>
Chapter 8 - Groundwater Resources	General Comment	<p>It is anticipated that the Colusa, Yolo, and Red Bluff groundwater subbasins will formally adopt groundwater sustainability plans (GSPs) by January 31, 2022. Sustainable Management Criteria, as established in each basin’s GSP, will determine what impacts to groundwater resources would be considered significant or unreasonable. CDFW recommends that the FEIR/FEIS compare the Proposed Project’s anticipated impacts on groundwater resources throughout the study area to the Sustainable Management Criteria adopted in each subbasin’s GSP when making significance determinations for each Project alternative.</p>

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Chapter 8 - Impact GW-2, Substantial Decrease in Groundwater Supplies or Substantial Interference with Groundwater Recharge That Would Impede Sustainable Groundwater Management of the Basin	pp. 8-13-8-18	<p>The RDEIR/SDEIS estimates that the Proposed Project will use up to one million gallons of groundwater per day for construction needs over a period of 4.5 years (p. 8-13), amounting to as much as 15% of the total annual groundwater use within the basin (p. 8-18). The RDEIR/SDEIS also anticipates that construction techniques would require dewatering (i.e., pumping and removing water from the aquifer) down to depths as great as 30 feet below ground surface to install features such as the Dunnigan pipeline (p. 8-15). Following construction, the RDEIR/SDEIS also anticipates that Proposed Project operation will reduce groundwater elevations near the diversion points. Specifically, based on the previous groundwater modeling, which as noted above likely underestimates impacts, groundwater elevations may decrease as much as 2.5 feet near the Red Bluff Pumping Plant and the GCID Hamilton City Pump Station (p. 8-15). The RDEIR/SDEIS states that the construction groundwater use “<i>would result in a less-than-significant reduction in groundwater supply</i>” (p. 8-18). However, the RDEIR/SDEIS only considers the potential impacts of temporary construction-related and ongoing operation-related decreased groundwater levels on sustainable groundwater management for human users of groundwater but does not consider the potential impacts on environmental users of groundwater, such as groundwater dependent ecosystems and interconnected surface waters. According to the Natural Communities Commonly Associated with Groundwater dataset (DWR 2021) (<a href="https://gis.water.ca.gov/app/NCDatasetViewer/">https://gis.water.ca.gov/app/NCDatasetViewer/</a>), there are groundwater dependent ecosystems located both near the construction area (along Stone Corral Creek and Funks Creek in between the proposed reservoir location and the Glenn Colusa Canal) and near the diversion points. Decreased groundwater elevations for multiple years in these areas could negatively impact groundwater dependent ecosystems and interconnected surface waters. CDFW recommends that the FEIR/FEIS quantitatively assess the potential impacts of reduced groundwater levels, both due to construction and ongoing operations, on environmental users of groundwater near the construction area and the diversion points. Resources developed for preparation of Groundwater Sustainability Plans may be helpful, such as the Plant Rooting Depth Database (developed by The Nature Conservancy, <a href="https://groundwaterresourcehub.org/sgma-tools/gde-rooting-depths-database-for-gdes">https://groundwaterresourcehub.org/sgma-tools/gde-rooting-depths-database-for-gdes</a>).</p>
Chapter 9- Mitigation Measure VEG-1.1, Conduct Appropriately Timed Surveys for Special-Status Plant Species Prior to Construction Activities	p. 9-26	<p>Mitigation Measure VEG-1.1 discusses conducting surveys for special-status plant species prior to construction and states the Authority will comply with the “<i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (California Department of Fish and Wildlife 2018)</i>” (p. 9-26), or the most current protocols, specifically with respect to the number and timing of surveys, use of reference populations, and evaluation of negative findings. Surveys for rare annual plants need to consider compounding influences from low rainfall and rainfall timing conditions. Many annual species of the rare plants may not germinate during a prolonged drought or may be affected by rainfall timing. In some instances, it may be feasible to assume the species are present, especially if habitat is present and the species have been reported on the habitat in previous year surveys. CDFW recommends the FEIR/FEIS be updated to include rare plant surveys on the Proposed Project site will be conducted on the entire Proposed Project area where habitat is present and over multiple growing seasons before assuming that the species are not present within Proposed Project areas.</p>

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Chapter 10, Impact WILD-1g: California Red-legged Frog	p. 10-68	The RDEIR/SDEIS establishes minimum flows between 0 to 100 cfs and the use of larger pulse flows to maintain habitat present immediately downstream from the Proposed Project. The minimum flows and the larger pulse flows are an estimation and will be finalized later after the RDEIR/SDEIS is certified. The RDEIR/SDEIS determines that many of the impacts to species and habitat present downstream from the reservoir within Funks and Stone Corral Creeks are less than significant based on the assumption that minimum and larger pulse flows will continue after construction of the Proposed Project. Minimum bypass flows and pulse flows are essential to maintain the habitat characteristics and the existing geomorphology of these creeks. The RDEIR/SDEIS cannot guarantee the existing Proposed Project design allows for larger pulse flows, but the less than significant determination to the species and habitat relies on the assumption that these larger pulse flows will continue after construction of the Proposed Project. Therefore, due to the uncertainty of whether these pulse flows can continue, CDFW recommends that the FEIR/FEIS include provisions to modify the Proposed Project design to allow for adequate releases that will be calculated after the document is certified. If these post-certification modifications are not feasible, the FEIR/FEIS should include an impact analysis to the species and habitat present within Funks and Stone Corral Creeks caused by missing adequate pulse flows and describe any additional avoidance, minimization, and/or mitigation measures that would be needed to reduce any potentially significant impacts to a less-than-significant level.
Chapter 10, Mitigation Measure WILD-1.24: Conduct Surveys for Western Burrowing Owl	p. 10-89	Mitigation Measure WILD-1.24 of the RDEIR/SDEIS states that the Authority will " <i>conduct burrowing owl surveys in accordance with CDFW's 2012 Staff Report on Burrowing Owl Mitigation (2012 Staff Report) (California Department of Fish and Game 2012)</i> " (p. 10-89). The 2012 Staff report concludes that because burrowing owls may re-colonize a site after a few days, subsequent surveys should be conducted if more than two days pass between Proposed Project activities. CDFW recommends the FEIR/FEIS state that additional surveys will be conducted if a lapse in Proposed Project activities of two days or greater occurs.

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Chapter 10, Mitigation Measure WILD-1.26: Rodenticide Use	p. 10-91	The 2012 Staff Report also includes avoidance measures to help avoid negative impacts that could result in take of burrowing owls, nests, or eggs through efforts to control nuisance animals as the use of rodenticides may impact non-target wildlife. Anticoagulant rodenticides, including diphacinone, have been detected in the majority of predators and scavengers tested in California (Hosea 2000), including bobcats ( <i>Lynx rufus</i> ) (Serieys et al. 2015) and raptors (Kelly et al 2014). Acute rodenticides, such as zinc phosphide, and fumigants carry much less risk of secondary exposure in wildlife and should be prioritized over anticoagulant rodenticides. CDFW recommends that the FEIR/FEIS include a measure for the Authority to develop an Integrated Pest Management Plan (IPMP) which focuses on long-term prevention of pest damage through habitat modification (Van Vuren et al 2014), incorporates biological control methods such as raptor perches and owl boxes to increase natural raptor predators, and includes limited and targeted rodenticide use when necessary. The IPMP should include measures to reduce rodent density before any anticoagulant baits are placed to reduce the number of contaminated rodents available to predators and scavengers. It should also include regular monitoring to ensure rodent control measures are taken only in response to current rodent activity. Additionally, CDFW recommends that rodenticides, anticoagulant or non-anticoagulant, are not broadcast to minimize the risk to non-target species from ingesting it directly. Furthermore, CDFW recommends that the Authority consult with California Department of Pesticide Regulation's PRESCRIBE database ( <a href="https://www.cdpr.ca.gov/docs/endspec/prescint.htm">https://www.cdpr.ca.gov/docs/endspec/prescint.htm</a> ) prior to any vertebrate pest control activity. The database incorporates section by section coordination with CDFW's Biogeographic Information and Observation System (BIOS) and the California Natural Diversity Database (CNDDDB) to provide species-specific use restrictions over and above anything generic already on the pesticide label including use of modified bait stations (and what those modifications must be).
Chapter 10 - Mitigation Measure WILD -1.28	p. 10-97	A requirement in Mitigation Measure WILD-1.28 states that, <i>"a minimum of two aerial surveys or ground observation periods lasting at least 4 hours each will be conducted...to confirm presence/absence of golden eagle"</i> (p. 10-97). Aerial survey methods can cover more area than ground survey efforts. CDFW recommends increasing the minimum time spent conducting ground surveys to no less than 6 hours. CDFW also requests that the Authority coordinate with CDFW regarding any potential mitigation related to bald eagle and golden eagle.
Chapter 10 - Mitigation Measure WILD-1.31, Compensate for the Loss of Foraging Habitat for Swainson's Hawk and White-tailed Kite	p. 10-106	The Proposed Project will result in the significant loss of foraging habitat, which could contribute to the reduction of Swainson's hawk range and abundance in Glenn County and California. To reduce the impacts to a less than significant level, CDFW recommends the FEIR/FEIS require acre for acre habitat replacement in the form of fee title acquisition with a conservation easement to protect Swainson's hawk foraging habitat. Implementation of this mitigation measure would ensure consistency of the FEIR/FEIS with the Yolo Habitat Conservation Plan/Natural Community Conservation Plan and the South Sacramento Habitat Conservation Plan mitigation strategies for this species.

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Chapter 10 - Mitigation Measure WILD-1.23, Conduct Preconstruction Surveys for Non-Raptor Nesting Migratory Birds and Implement Protective Measures if Found	p. 10- 114	It is unknown if the Proposed Project will impact some of the state-listed species with the potential to occur in the Proposed Project area until surveys are conducted. CDFW recommends that Mitigation Measure WILD-1.23: Conduct Preconstruction Surveys for Non-Raptor Nesting Migratory Birds and Implement Protective Measures if Found is revised in the FEIR/FEIS to also implement protective measures if preconstruction surveys detect state-listed bird species in areas outside their modeled habitat. This is especially important if the species or their nesting habitat are located within the direct project footprint. CDFW recommends that if state-listed species are found during surveys that the FEIR/FEIS includes provisions to contact CDFW to establish compliance with CESA and obtain any applicable permits prior to impacting the species. If the Proposed Project results in permanent impacts to any of these species, mitigation already disclosed in the RDEIR/SDEIS should also be implemented.
Chapter 10 - Impact WILD-1o: Bank Swallow	p. 10-117	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).
Chapter 10 - Mitigation Measure WILD -1.26	p. 10-134	Mitigation Measure WILD-1.26 includes the installation of signage discouraging feeding of wildlife to aid in the reduction of potential nuisance rodents. While signage can be effective at reducing the number of visitors feeding wildlife, it does not eliminate feeding or the resulting wildlife dependency on handouts. Example regulations include, the California Code of Regulations Title 14, section 251.3, which specifically states that it is illegal to feed big game mammal; section 251.1, which addresses feeding as "harassment" of animals. "Harass," as defined in this section, as an "intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering." Any applicable local regulations should also be considered by the Proposed Project.
Chapter 11 - Section 11.3.2, Operations	p. 11-57	The RDEIR/SDEIS states that "where feasible, and when modelers indicate using them is appropriate, daily model outputs are utilized" (p. 11-57). However, use of USRDOM daily time step hydrologic data is limited to juvenile stranding analysis, redd scour, and redd dewatering analysis for evaluating impacts FISH-2 through FISH-5 as stand-alone, not cumulative projections of impacts.

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Chapter 11 -Impact Fish-2, Delta	General Comment	CDFW is concerned that important changes in location and timing of available Delta rearing and migratory habitat under the Proposed Project are not being captured by model projections in the RDEIR/SDEIS. Delta abiotic factors that influence habitat suitability and the subsequent rearing and survival components of salmonid life history is a significant knowledge gap that is not currently resolvable. This should be acknowledged throughout the text of Chapter 11. However, it is well established that the quality and quantity of habitats available for Chinook salmon and steelhead in the Delta depend on inflows from the Sacramento River (del Rosario et al. 2013). CDFW recommends that the Proposed Project utilize the California Water Fix analysis done for potential impacts to reduced inundation of river adjacent floodplain bench habitat to assess changes in the location and timing of available Delta rearing and migratory habitat due to Proposed Project operations.
Chapter 11- Yolo Bypass and Fremont Weir Spill Flow and days of Yolo Bypass Inundation	p. 11-114	As noted in the RDEIR/SDEIS, Proposed Project operations could reduce recruitment of juvenile salmonids onto the Yolo Bypass via Fremont Weir during overtopping events and through the proposed Fremont Weir Notch Project headworks structure. CDFW is concerned that the analyses conducted are lacking in fully evaluating the potential impact of operations on juvenile salmonid access to floodplain rearing habitat in the Yolo Bypass. The RDEIR/SDEIS analysis for flow reductions at Fremont Weir only spans January-June, thereby missing November and December when overtopping may occur. Additionally, the total reduction in inundated habitat is skewed by adding modeled inundated habitat in the August-October period during conditions when juvenile salmon most likely will not have access to that habitat. To fully assess potential impacts, CDFW suggests the RDEIR/SDEIS include an analysis of how Proposed Project diversions will reduce flow entering the Yolo Bypass on a daily time-step during Fremont Weir overtopping events and through the proposed Fremont Weir Notch headworks structure for the time period of November 1 through May 31, to adequately capture Fremont Weir spill events and Fremont Weir notch operations. Changes in flow entering the Yolo Bypass on a daily time scale may be more important than monthly changes to inundated acres because it is assumed that fish access to the Bypass is the limiting factor for rearing rather than total inundated acres. CDFW suggests using the two-dimensional TUFLOW model developed for the Fremont Weir Notch EIR/EIS (BOR and DWR 2019). Reductions in flow should be related to reductions in juvenile salmonid entrainment onto the Yolo Bypass using best available information such as entrainment models developed for the Fremont Weir Notch Project.
Chapter 11 - Floodplain Inundation and Access	General Comment	A key objective of the Fremont Weir Notch Project is to improve connectivity between the Sacramento River to provide safe and timely passage for adult winter- and spring-run Chinook salmon, Central Valley steelhead, and green sturgeon. CDFW recommends the FEIR/FEIS include an impact analysis of Proposed Project operations to the Fremont Weir Notch Project, considering impacts to the number of adult fish passage days. This analysis should be based upon the fish passage criteria developed for the Fremont Weir Notch Project. Since the Fremont Weir Notch Project is also a mitigation project for CVP & SWP operations, any changes to floodplain inundation frequency and duration should be considered when developing mitigation strategies to address those potential impacts.

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Chapter 11 - Impact Fish-2, Yolo Bypass Inundated Area	pp. 11-115, 11-301	In the analysis of changes in access to suitable juvenile salmonid (and splittail) rearing habitat, the RDEIR/SDEIS describes the August - October flows through Yolo Bypass as creating "habitat". The RDEIR/SDEIS also notes very few to no juvenile salmonids (or splittail) will be present or able to access this flooded land and, therefore, additional flows through the Yolo Bypass in August - October will not provide "suitable habitat" or "habitat acreage". CDFW recommends the FEIR/FEIS reflect this clarification and that analysis of changes in access to suitable rearing habitat not include the additional flows proposed to be released through the Yolo Bypass in August - October.
Chapter 11 - Floodplain Inundation and Access for Sutter Bypass	pp. 11-118,119; 11-147; 11-179; 11-205	<i>"The results of the frequency analysis of weir spills shows reductions in the number of spills, especially for the Sutter Bypass, indicating a reduction in bypass entry opportunity for juvenile salmonids"</i> (p. 11-118, 119). Similar analyses are provided on p. 11-147 for spring-run Chinook salmon, p. 11-179 for fall and late-fall-run Chinook salmon, and p.11-205 for Central Valley steelhead. CDFW believes that the existing analyses and discussion of results on the potential impact of operations on juvenile salmonid access to floodplain rearing habitat in the Sutter Bypass do not fully capture potential impacts. It is not clear from the text what time period was modeled to assess reduction in weir spill events, the modeling results are not presented and the impact of the described reduction in weir spill event is not evaluated. Like for the Yolo Bypass, Sites operations could reduce beneficial recruitment of listed juvenile salmonids onto the Sutter Bypass via Moulton, Colusa, and Tisdale Weirs. Operations also have the potential to impact juvenile rearing habitat at the southern end of the Sutter Bypass due to a reduction of floodplain inundation arising from backwatering around the confluence of Sacramento River and Feather River. CDFW recommends that the same level of detail in-text as is provided for Yolo Bypass for potential changes to weir spill flows, days of inundation, and inundated area in Sutter Bypass. As for the Yolo Bypass, additional analyses should be conducted to better assess how operations will impact juvenile salmonid access to floodplain rearing habitat in the Sutter Bypass. This should include an analysis of how Sites proposed diversions will reduce flows in the Sutter Bypass on a daily time-step. CDFW suggests using the two-dimensional TUFLOW model developed for the Big Notch Project EIR/EIS (BOR and DWR 2019). Reductions in flow should be related to reductions in juvenile salmonid entrainment onto the Sutter Bypass using best available information.
Chapter 11 - Floodplain Inundation and Access for Sutter Bypass	General Comment	The potential impacts of operations on adult fish passage through and out of the Sutter Bypass were not analyzed. Proposed Project operations may reduce the number of days that adult salmonids and acipenserids can pass from the Sutter Bypass back to the Sacramento River during weir overtopping events (e.g., at Moulton, Colusa, and Tisdale Weirs) and at the planned fish passage notch in Tisdale Weir. Additional analyses should be conducted to better understand how the Proposed Project will impact adult fish migration within Sutter Bypass and out of Sutter Bypass. This should include an analysis of how diversions will reduce flow entering the Sutter Bypass on a daily time-step over associated flood weirs and at the planned fish passage notch at Tisdale Weir. Flow reductions should be related to the adult fish passage criteria for depth and velocity that were developed for the BNP (DWR 2017).



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Chapter 11 - Impact Fish-2, Yolo Bypass Inundated Area	p. 11-118	Katz et al. 2017 and Bellido-Leiva et al. 2021 do not provide evidence that the Yolo Bypass provides good rearing habitat for juvenile salmonids. Please remove and provide additional reference by Sommer et al. (2001).
Chapter 11 - Impact Fish-2, Delta	p. 11-125	Appendix 11J does not include specific information regarding the sensitivity analysis (e.g., What were the assumptions and parameters of the sensitivity analysis? What time of year was the Georgiana barrier assumed operational?). It is unclear if 50% reduction in mortality is an appropriate assumption under all alternatives, given the study did not take into consideration reduced outflow conditions as a result of Sites proposed alternatives. Also, it is not clear if 50% should be assumed across all flow conditions, months, and water years. The BAFF was only studied in 2011 (wet WY) and 2012 (below normal WY); therefore, there are no above normal, dry, or critical years studied. CDFW suggests including a detailed description of the modeling assumptions included in the sensitivity analysis.
Chapter 11 - Tables 11-17, 11-18, 11-27, and 11-28	p. 11-126, 27, 11-154	The current Salvage Density Method only includes water years 2009-2019, which omits above normal water year types. Previous applications of this model (i.e., SWP EIR and Incidental Take Permit Application) included all water years analyzed with CalSim (1922-2003), which includes above normal water year types. CDFW recommends the interpretation of the results from this analysis and how they are applied to the evaluation of potential impacts consider the limited years of data used, which may underestimate potential impacts.
Chapter 11 - Tables 11-17, 11-18, 11-27, and 11-28	p. 11-126, 11-127, 11-206	The results of the Salvage Density Method are averages across water year type rather than by month and water year type. For winter-run and spring-run Chinook Salmon, salvage is not consistent across the year therefore the modeling results may underrepresent any changes to salvage during the months of peak salvage. Historically, peak salvage of winter-run Chinook Salmon occurs in March (with a smaller peak in January) and peak salvage of spring-run Chinook Salmon occurs in April. CDFW suggests presenting the results of the Salvage Density Method by month and water year type.
Chapter 11 - Life Cycle Models	pp. 11-127 - 11-129	The OBAN winter-run Chinook salmon life cycle model was run to provide an analysis of the potential integrated effects of Alternatives 1, 2, and 3 on the species relative to the NAA. As noted in the RDEIR/SDEIS, OBAN does not have a flow survival component capable of analyzing primary impacts of the Proposed Project on winter-run Chinook salmon. Given the absence of a flow survival component, OBAN provides limited utility for evaluation of Proposed Project impacts on winter-run Chinook salmon.
Chapter 11- Mitigation Measure FISH-2.1: Wilkins Slough Flow Protection Criteria	pp. 11-131,132	The Flow Threshold Survival Analysis to Assess Potential Effects of Sites Reservoir Project Mitigation Measure FISH-2.1 should be conducted separately for winter-run Chinook salmon because the key input relies on a Wilkins Slough Bypass Flow of 10,172 cfs from March through May after which most winter-run Chinook salmon have passed Wilkins Slough. Thus, winter-run Chinook salmon are not currently accounted for in this analysis.

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Chapter 11 - Impact Fish-4, Sites Reservoir Release Effects	pp. 11-180, 11-206	Any inundation of lands in Yolo Bypass that occurs between August-October will impact landowners in the Bypass. Relevant land uses (and approximate timing) include waterfowl season (typically mid-October to through mid-January); flooding of seasonal wetlands (typically September or October through April); rice harvest (typically September to October). CDFW recommends that the Proposed Project provide additional analysis on the potential impacts to landowners from conveying flow deliveries through the Yolo Bypass.
Chapter 11 - Impact Fish-4, Sites Reservoir Release Effects	pp. 11-180; 11-206	<p><i>“Fall-run Chinook salmon entering the Toe Drain may eventually reach the Wallace Weir, where fish rescue and relocation to the Sacramento River by CDFW occurs, either at the recently completed Wallace Weir Fish Rescue Facility or by beach seine in the vicinity of the Wallace Weir”</i> (p. 11-180 for fall-run, p. 11-206 for steelhead). Operations of the Wallace Weir Fish Salvage Facility should not be considered an avoidance or minimization measure for potential impacts from conveying water through the Yolo Bypass on adult salmonids. The purpose of the Wallace Weir Fish Rescue Facility is to prevent listed adult fish from entering the Colusa Basin Drain and increase the efficiency of potential fish salvage operations. The long-term goal for the Yolo Bypass fisheries enhancement efforts is to reduce fish salvage at Wallace Weir. Increasing reliance on the facility to reduce impacts from Proposed Project deliveries conflicts with this goal. As such, it is inappropriate to use operations of the fish rescue facility as a rationale for explaining why Proposed Project reservoir releases would not impact adult fall-run Chinook salmon and steelhead. Additionally, increased flows through Colusa Basin Drain and Wallace Weir may impact the operational capacity of the Wallace Weir Fish Rescue Facility, further increasing the chance of stranding, migratory delays, and exposure to poor water quality conditions to fish being present downstream of Wallace Weir between August and November. Increased reliance of the Wallace Weir Fish Rescue Facility should be put in context of the objectives of the facility and a discussion of how handling and transporting anadromous fish potentially impacts their fitness should be included. Overall, the Proposed Project should provide a more objective description of the potential impacts of reservoir releases through the Yolo Bypass on increased stranding of fall-run Chinook salmon and steelhead, as well as impacts to operations of Wallace Weir Fish Rescue Facility.</p>
Chapter 11 - Impact Fish-6, Flow Effects	p. 11-223	Fish screen entrainment assessment is based on pallid sturgeon (Mefford and Sutphin 2008). This species is a poor proxy for green or white sturgeon. More suitable references would be products of the Cech or Fangue labs at UC Davis such as Poletto et al. 2014 and Mussen et al. 2014.
Chapter 11 - Impact Fish-6, Flow Effects	p. 11-223	The RDEIR/SDEIS states that <i>“The [green sturgeon] adults spawn primarily from March through July, although they periodically spawn in late summer and fall (as late as October) (Heublein et al. 2009, 2017, NMFS 2018b)”</i> (p. 11-223). This statement is not consistent with the cited literature. The first two citations do not support this statement and the last citation (NMFS 2018) states that larvae have been found in late summer and fall. The latest reports of larvae have been around early October, which would correspond to spawning in July or August, not in the fall. Green sturgeon have never been reported spawning that late in the season.

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Chapter 11 - Impact Fish-6, Table 11-48	p. 11-228	The RDEIS/SDEIS notes flow at Hamilton City will be reduced to 5-13% of average flow. This is of concern for green and white sturgeon. January – February corresponds with peak adult white sturgeon up-migration, and March with the start of green sturgeon up-migration for spawning. While it is unlikely that these reductions would be enough to limit passage, it is not known if they would impact migratory cues and change or alter the timing of migrations. CDFW recommends this potential impact be addressed in the FEIR/FEIS.
Chapter 11 - Impact Fish-6, Table 11-48 and Flow Effects, Adult Migration and Holding	p. 11-240	Green sturgeon spawning in the Feather River is limited to wet and above normal years due to blocked passage at Sunset Weir (as noted on p. 11-240); however, there are ongoing plans to improve passage at that barrier. If passage is improved, it is likely that spawning will occur in the Feather River in lower water years. Even if passage is improved, the reductions in flow predicted in June and July would impact rearing of larval green sturgeon. Note that one of the reasons the species was listed was that there was only one small spawning area in the Sacramento River, making the species susceptible to catastrophic events. Enhancing and supporting spawning in the Feather River (and other rivers) is an important component of the NMFS Recovery Plan (NMFS 2018). CDFW recommends the FEIR/FEIS address potential impacts to larval green sturgeon rearing habitat.
Chapter 11 -Impact Fish-6, Appendix 11L Sturgeon Delta Analyses	General Comment	The RDEIR/SDEIS finds the Proposed Project to have Less Than Significant (LTS) effects on both green sturgeon and white sturgeon. However, the Proposed Project has the potential to impact sturgeon survival and recruitment due to reductions in Sacramento River flow associated with input flows to the reservoir, which are not sufficiently offset by protective bypass flow criteria. Additionally, as larval sturgeon could likely be in close proximity to points of diversion at the time of diversion for the Proposed Project, an analysis of the screening efficacy on larval sturgeon may be warranted.
Chapter 11 -Impact Fish-6, Appendix 11L Sturgeon Delta Analyses	General Comment	Spawning success and juvenile recruitment are poorly understood for both species of sturgeon due to the difficulty of monitoring the benthic, dispersed, and cryptic early life stages of these fishes. The best available evidence indicates that white sturgeon only have large, successful recruitment events approximately every 8-10 years, correlated with wet water years, especially those associated with high spring outflow (Fish 2010; Stevens and Miller 1970). It appears that green sturgeon show a similar pattern. Reports from the USFWS Red Bluff office show green sturgeon eggs captured on egg mats and larvae captured in both rotary screw traps and benthic D-nets show high numbers in wet years with high water levels (B. Poytress, USFWS, personal communication). Operations of Proposed Project that reduce flows during wet and above normal years, during the periods of egg development, larval rearing, and juvenile migration carry a strong risk of harming those early life stages and reducing these rare successful recruitment years. To minimize these potential impacts, Proposed Project operations should time reservoir inflow so that it does not meaningfully reduce flows in the Sacramento River during critical sturgeon rearing and migration, especially during the wettest years. Additionally, monitoring of early life stage abundance or YCI should be funded through the Proposed Project in order observe the effects of Proposed Project operations on sturgeon and inform adaptive management of Proposed Project operations, as necessary.

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Chapter 11 - Impact Fish-6, Delta Outflow Effects	p. 11-242	The RDEIR/SDEIS suggests that even if upstream passage of adults is blocked briefly, <i>“it is likely adults would hold and continue their migration and spawning after flow subsequently increased”</i> (p. 11-242). There is nothing in the literature to suggest this. Evidence suggests that when passage is blocked, green sturgeon will move back downstream (e.g., adults blocked by the insertion of the gates at Red Bluff Diversion Dam prior to 2011; Heublein et al. 2009). It is not known whether they attempt to spawn lower in the system or simply abort the migration and return to salt water. Suggesting that Proposed Project operations will not have an impact on sturgeon should not be based on the assumption that they will wait until later to migrate, as it is possible that the fish will not spawn at all.
Chapter 11- Impact-Fish-8: Operations Effects on Delta Smelt	pp. 11-250 - 11-258	The RDEIR/SDEIS’s analysis of effects from reservoir releases to CBD/Yolo Bypass begins by asserting that providing flow through CBD and Yolo Bypass may benefit Delta smelt. This section cites Bush (2017) to assert that 23% of the population may benefit from releases through the Yolo Bypass. This is not an accurate representation of the findings of that study. Bush (2017) found that the proportion of freshwater resident Delta smelt was variable and that summer water temperature was likely the main driver of the proportion of freshwater residents that are present in the Cache Slough complex. Furthermore, the North Delta food web actions (NDFA) have not demonstrated a measurable improvement in the Delta smelt population, habitat, or abundance of prey items. The only NDFA having a phytoplankton bloom observation, occurred in 2016 and was comprised of Aulacoseira, a long chain-forming diatom that copepods (a major food item for Delta smelt and longfin smelt) do not consume at high rates during blooms (Jungbluth et al. 2020). Other NDFA have resulted in no observed increase in phytoplankton. These results show the uncertainty associated with food web benefits of the NDFA. Further discussion of this action in the RDEIR/SDEIS describes the uncertainty in the extent to which Delta smelt could be affected by an increase in pesticides in the lower Yolo Bypass, as Proposed Project habitat flows would redirect CBD water that is relatively high in pesticides into the Yolo Bypass, and the potential deleterious effects that Delta smelt in the Yolo Bypass could experience due to exposure to low dissolved oxygen (p. 11-255). The RDEIR/SDEIS also acknowledges water temperature in this region is frequently at the cusp of the upper thermal maximum for Delta smelt, concluding that as a result <i>“there is some uncertainty in the potential for effects on Delta Smelt”</i> (p. 11-258). As stated above, Bush (2017) found that high water temperature may lead to lower frequency of freshwater resident Delta smelt in the North Delta. Therefore, any increase in water temperature in the Yolo Bypass or North Delta is likely to reduce the frequency of freshwater resident Delta smelt. CDFW suggests revising this section for clarity and clearly stating the potential benefits, uncertainties, and potential deleterious effects of reservoir releases to CBD/Yolo Bypass on Delta smelt.
Chapter 11- Impact-Fish-8: Operations Effects on Delta Smelt	General Comment	The RDEIR/SDEIS does not currently address the role of outflow on the transport and dispersal of Delta smelt larvae. Reduced delta outflow reduces the transport and dispersal of Delta smelt larvae downstream to areas of higher quality habitat (IEP MAST 2015, CDFW 2020). Polansky et al. 2021 also found that outflow is important for post-larval survival. CDFW suggests adding in a discussion of the Proposed Project's operational effects on survival of Delta smelt larvae in the FEIR/FEIS to better inform Proposed Project impacts to Delta smelt.

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Chapter 11- Impact-Fish-8, Flow-Related Effects	pp. 11-260, 261	<p>The RDEIR/SDEIS analyzed expected decreases in Delta outflow and the abundance of <i>Eurytemora affinis</i>, a copepod that is an important food for Delta smelt and found that there would be less prey available to Delta smelt in spring under all three operational scenarios compared to the No Action Alternative (p. 11-260). However, these analyses used statistical relationships between outflow and <i>Eurytemora</i> abundance observed over several months of the spring period. The largest decrease in Delta outflow under the operational scenarios would be in March, with relatively little change in Delta outflow in April and May. Therefore, decreases in food availability in March would be expected to be greater than those represented in Table 11-58 (averaged over March through May) and Table 11-59 (averaged over March through June) (p. 11-261). The conclusion that such small decreases are unlikely to be “statistically detectable” does not mean that such decreases would not be biologically significant or deleterious to a species already suffering from food limitation. The ability to statistically detect the decrease in <i>Eurytemora</i> abundance is influenced by the large variability in the zooplankton data, which is inherent in zooplankton data as copepod distribution is patchy. Even at relatively low abundance, <i>Eurytemora</i> is highly positively selected for by Delta smelt in spring and increasing or extending its period of abundance provides feeding benefits to larval and small juvenile Delta smelt (Slater and Baxter 2014). Therefore, the negative impacts to Delta smelt from reduced prey availability may be greater than what is presented in the RDEIR/SDEIS.</p>
Chapter 11- Impact-Fish-8, Flow-Related Effects	pp. 11-263, 264	<p>The RDEIR/SDEIS highlights a debate regarding the importance of low salinity zone habitat to Delta smelt, citing a small set of references (pp. 11-263, 264). Yet, throughout the Delta Smelt Flow-Related Effects section (pp. 11-260-264), the RDEIR/SDEIS states that an average of 23% of Delta smelt surviving to adulthood are freshwater residents and the remainder either migrate to the low salinity zone or are resident there (Bush 2017). This contradicts the assertion that the low salinity zone is possibly not an important habitat for Delta smelt, when an average of 76% of Delta smelt surviving to adulthood reside there or migrate there for a portion of their life. CDFW suggests the Proposed Project either remove the suggestion the low salinity zone is not an important habitat for Delta smelt or expand the discussion. Specifically, the discussion should include the importance the Suisun Bay where habitat quality is maximized (Feyrer et al. 2007, Feyrer et al. 2011, Kimmerer et al. 2013) and Delta smelt foraging efficiency and success is greater (Hammock et al. 2017, Hammock et al. 2019). Recent statistical analyses conducted by USFWS also provide strong support for the importance of fall habitat to recruitment of Delta smelt (Polansky et al. 2019 and Polansky et al. 2021).</p>

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Chapter 11- Impact FISH-9: Operations Effects on Longfin Smelt and Appendix 11A	General Comment	There is a well-documented positive correlation between winter and spring Delta outflow and the abundance of longfin smelt the following fall. Adults, immature sub-adults, eggs, larvae, and young juveniles are all present during some portion of this period and may be affected by various factors associated with Delta outflow. While the underlying mechanism or mechanisms driving this relationship remain unclear, the correlation between outflow and longfin smelt abundance has remained strong across multiple decades and through a substantial decrease in abundance (Maunder et al. 2015; Nobriga and Rosenfield 2016; Rosenfield and Baxter 2007; Stevens and Miller 1983; Tamburello et al. 2019; Thomson et al. 2010). Other analyses examined the magnitude of Delta outflow associated with positive longfin smelt population growth (State Water Resources Control Board (SWRCB) 2017, Rosenfield et al. 2010). The magnitude of outflow required varied depending on what averaging period was considered, however, both examinations concluded that the probability of positive population growth decreases with reduced outflow (SWRCB 2017) indicating that further reduction in winter/spring outflow may exacerbate the current decline in longfin smelt population.
Chapter 11- Impact FISH-9: Operations Effects on Longfin Smelt and Appendix 11F	General Comment	The effect that Proposed Project operations would have on longfin smelt was modeled using a reconstruction of analysis conducted by Nobriga and Rosenfield (2016). The intent of the original Nobriga and Rosenfield analysis was to test various life history conceptual models using contrasting variants of a generalized population model. The analysis using Nobriga and Rosenfield approach may not accurately convey Proposed Project impacts. Visual examination of model fit as presented in Figure 11F-1 showed that the model 2abc median differed from empirical data by as much as an order of magnitude in some years and that the 95% confidence intervals spanned multiple orders of magnitude indicating a high degree of uncertainty. The results are presented in such a way that mask Proposed Project effects by including all variation due to all factors including a multiple order of magnitude decline in the population and error associated with model coefficients. To facilitate clearer interpretation of impacts to longfin smelt, the results should be presented as a proportional change in the modeled FMWT index under NAA conditions prior to averaging by water year type. A second approach based on previously published regression analysis described by Kimmerer et al. (2009) and Mount et al. (2013) was also presented. The results of this second approach were similar to the Nobriga and Rosenfield method in that there was a high degree of uncertainty and that the Proposed Project operations resulted in a net negative impact on longfin smelt abundance.

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Chapter 11- Mitigation Measure FISH-9.1: Tidal Habitat Restoration for Longfin Smelt and Appendix 11F.5 Tidal Habitat Restoration Mitigation Calculations for Longfin Smelt	p. 11-274 and pp. 11F-32, 33	The proposed mitigation to offset the effect of reduced outflow used an equation described by Kratville (2010). This equation may not be appropriate due to the fact that it was developed to calculate the acreage required to mitigate the direct and indirect loss of larval Delta smelt associated with SWP/CVP exports. The equation is based on the findings of Kimmerer and Nobriga (2008) which applied a particle tracking model to estimate the proportion of simulated Delta smelt larva that would be entrained into the south Delta Export facilities from various locations in the Delta. Kratville (2010) does state that this analysis is generally representative of the effects that SWP/CVP exports have on longfin smelt larvae in dry years. However, it does not encompass the full period in which larval longfin smelt are present. Larval longfin smelt are present in the estuary beginning as early as mid-December when the E:I ratio is 65%. Therefore, this equation may be appropriate to calculate the acreage needed to offset any increase in south Delta exports associated with Proposed Project operations, if it is adjusted to account for the different E:I ratio in December and January. However, it does not account for impacts associated with reduced Delta outflow due to Proposed Project diversions.
Impact Fish-10 through Impact Fish-17	General Comment	The projections of Proposed Project effects on native and introduced fish species (Impact Fish-10 through Impact Fish-17) do generally use the best available species life history accounts and current information. The uncertainty associated with projections of less than significant Proposed Project impacts on these fish is especially high because there is no precedent for these effects because quantitative models and analysis of fish response for a project of this type and scale are nonexistent. In other words, the best available science to evaluate Proposed Project effects on these fish species results inevitably in conclusions that are speculative. Because of this uncertainty, CDFW recommends that the FEIR/FEIS fully describe this level of uncertainty and include these fish species in the adaptive management program.
Appendix 11A - Section 11A.1.3.2, Life History and General Ecology	p. 11A-25	RDEIR/SDEIS states: " <i>Until recent years, salmon passage was not possible above the Coleman Hatchery barrier weir located on Battle Creek.</i> " This is not correct. Fish passage is always possible at the Coleman National Fish Hatchery barrier weir. The Coleman National Fish Hatchery controls fish passage at the weir for hatchery operations.
Appendix 11A - Section 11A.1.3.2, Table 11A-2	p. 11A-27	The RDEIR/SDEIS uses National Marine Fisheries Service 2019 for their table of general life stage timing for winter-run Chinook salmon. However, this table should be updated to include Glenn Colusa Irrigation District's long-term winter-run monitoring data and Tisdale's Rotary Screw Trap data from CDFW's Tisdale Monitoring Program to reflect best available science and provide winter-run emigration information between RBDD and Knights Landing.
Appendix 11A - Section 11A.1.4.3, Distribution and Abundance	p. 11A-32	The RDEIR/SDEIS states " <i>Today, only the mainstem Sacramento River and Butte, Mill, and Deer Creeks maintain wild spring-run Chinook salmon populations</i> " (p. 11A-32). Battle Creek should be added to the list of creeks containing wild spring-run (NMFS 2016).
Appendix 11A- Section 11A.1.4.4, Stressors	p. 11A-36	The reference National Marine Fisheries Service 2014 appear to have been taken out of context with regards to discussing stressors on spring-run Chinook salmon. The text should be revised to reflect the literature cited or removed. Specifically, stressors in Deer, Mill, and Antelope creeks include agricultural water diversions primarily, with loss of habitat due to urban development secondary.

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Appendix 11F - Section 11F.5	p. 11F-34	The RDEIR/SDEIS calculated tidal habitat restoration mitigation for longfin smelt. <i>"The overall area of effect for each scenario was calculated as 10% of the area of the above calculations, consistent with calculations for the mitigation requirements used by California Department of Fish and Game (2009) and California Department of Water Resources (2019)"</i> (p. 11F-34). However, the description is confusing, and it is unclear how the overall area for each scenario was calculated. CDFW suggests the FEIR/FEIS provide a clear step-by-step description of the calculation.
Appendix 11I - Winter-Run Chinook Salmon Life Cycle Modeling	General Comment	Clarification is needed on the flow scenarios used for IOS CalSim II inputs specific to the Proposed Project and to determine if Yolo (including Big Notch restoration project) and Sutter Bypass Project associated flow changes are accounted for in IOS. Temperature inputs for the Sacramento River are derived from the USBR SRWQM temperature model but it is not clear if the modeling is specific to the Proposed Project based on the documentation. Temperature inputs are only applied to the spawning reach from Keswick to Balls Ferry, but Proposed Project related flow changes are not accounted for in this section of the Sacramento River. Therefore, redd dewatering is another component of IOS that was not modeled. Chinook salmon redd dewatering could occur or be exacerbated by Proposed Project operations depending on water year type and water transfers.
Appendix 11I - Winter-Run Chinook Salmon Life Cycle Modeling	General Comment	IOS has been updated to include a flow survival component for migrating winter-run smolts. The simple linear regression presented was based on seven years of winter-run Chinook salmon acoustic tag data; however, the specific years utilized are not provided and the linear regression does not include the data points that were used to develop the linear regression (Figure 4, Appendix 11I). The survival values range from approximately 25% at 3,250 cfs to 37% at 60,000 cfs from Bend Bridge to Verona. It is unclear how the regression was interpolated, extrapolated, and fit to the data points utilized. It has been shown in other flow survival analyses that there may be inflection points and thresholds of flow related survival that are vastly different than what was presented in the RDEIR/SDEIS analysis (Michel et al. 2021). Therefore, the actual impact of Proposed Project operations on salmonid survival in the Sacramento River may be under-represented.
Appendix 11I - Winter-Run Chinook Salmon Life Cycle Modeling	General Comment	The Delta Passage Model (DPM) component of IOS relies on monthly average CalSim II flows as an input and variable entry timing for each year in the model simulation. It is unclear if river migration has a pulse flow component or is simply a function of smolt maturation, and how year-specific entry to the Delta curves are generated. As such, CDFW cannot determine if these entry curves coincide with actual Proposed Project diversions. When coupled with the use of monthly averaged flow inputs, there is significant potential for the IOS model to under-represent Proposed Project impacts on through Delta survival. It is also unclear if the DPM component of IOS relies on Perry 2010 or if it has been updated to the more recent Perry 2018 model. CDFW recommends that the DPM component of IOS including the smolt entry component of the IOS life cycle model be more thoroughly documented in Appendix 11I-2.



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Appendix 11K - Weighted Usable Area Analysis	General Comment	<p>The RDEIR/SDEIS relies on Weighted Usable Area (WUA) curves developed by USFWS to determine potential impacts to salmonid rearing habitat in the Sacramento River and states <i>“The results of the analyses suggest that Alternatives 1–3 would cause few large changes in spawning WUA in any of the rivers and would generally result in more increases than reductions in rearing WUA in the Sacramento River, especially for juveniles (53% increases in total)”</i> (p. 11K-77). Salmonids tend to rear in off-channel and side-channel habitat, characteristic of slower velocities and shallower depths. As a result, decreased flow in the Sacramento River subsequently leads to slower and shallower conditions, potentially indicating higher WUA. However, the assessment presented in the RDEIR/SDEIS is inadequate in analyzing impacts to rearing habitat in the Sacramento River as it fails to assess other important habitat components including the potential for habitat fragmentation, inundation frequency and duration, as well as complexity. Therefore, the potential impacts to salmonid rearing habitat may be underestimated. CDFW recommends the FEIR/FEIS include additional assessment of the Proposed Project’s impacts to rearing habitat availability within the Sacramento River system, as well as the other systems (i.e., the American and Feather Rivers) impacted by the Proposed Project.</p>
Appendix 11K - Weighted Usable Area Analysis	General Comment	<p>The RDEIR/SDEIS states that “Rearing habitat WUA was estimated only for the Sacramento River because no adequate flow versus rearing WUA curves located for the Feather or American River were available. The available flow versus rearing WUA information for these rivers is old, limited, and potentially unreliable (Appendix 11K)” (p. 11-58). Instream juvenile rearing habitat data for fall-run Chinook salmon from instream flow studies conducted by Mark Gard (CDFW) for the American River are available online at <a href="http://cvpia-habitat-docs-markdown.s3-website-us-west-2.amazonaws.com/watershed/american_river.html">http://cvpia-habitat-docs-markdown.s3-website-us-west-2.amazonaws.com/watershed/american_river.html</a> (Gill and Tompkins 2020a). Instream spawning and rearing habitat data for fall-run Chinook salmon and steelhead in the Feather River are available online at <a href="http://cvpia-habitat-docs-markdown.s3-website-us-west-2.amazonaws.com/watershed/feather_river.html">http://cvpia-habitat-docs-markdown.s3-website-us-west-2.amazonaws.com/watershed/feather_river.html</a> (Gill and Tompkins 2020b). Additionally, instream spawning and rearing habitat data for fall-run Chinook salmon and steelhead in the Feather River from the California Department of Water Resources (DWR) and from Thomas R. Payne &amp; Associates were used in instream flow evaluations for the relicensing of the Oroville facilities. These evaluations determined relationships between flow and both suitable spawning and rearing habitat for 23.25 miles of the Feather River. In addition, the CVPIA Structured Decision Making process utilizes the DWR Federal Energy Regulatory Commission (FERC) instream spawning and rearing habitat data for the Feather River. CDFW recommends the Proposed Project utilize these WUA curves to assess potential impacts to rearing Weighted Usable Area for juvenile salmonids in the Feather and American River systems.</p>
Appendix 11M - Section 11M.2.1, Bypass and Side Channel Inundated Habitat Area	p. 11M-1	<p>The one-meter threshold for optimal floodplain depth is somewhat arbitrary, from both a fish ecology perspective and in context of the modeling accuracy. CDFW recommends an analysis of changes to inundated surface area with removal of discussion related to optimal/suboptimal depths.</p>

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Appendix 11M - Section 11M.2.2, Bypass Flow and Weir Spill	p. 11M-5	The RDEIR/SDEIS Appendix 11M states, " <i>Note, however, that the total flow in the bypass is not always a good indicator of suitable habitat availability, as shown in Figures 11M-1 and 11M-2</i> " (p. 11M-5). CDFW disagrees with this statement. Flow is a good metric of available suitable habitat in both Sutter Bypass and Yolo Bypass, as increased flows equal increased entrainment of fish.
Appendix 11P - Riverine Flow-Survival	Figure 11P-1	The RDEIR/SDEIS's analysis showed that estimated survival for the status quo and Proposed Project scenarios was similar (Figure 11P-1), with the exception of two wet years (2011 and 2017). This illustrates that the Proposed Project diversion criteria generally minimize diversions during the historical periods of fish movement, as reflected in Red Bluff rotary screw trap data. However, fish presence/passage at the RBDD rotary screw traps is an incomplete reference point to assess impacts of Proposed Project diversions on juvenile salmonid flow-survival relationships. Listed fish (Central Valley spring-run Chinook and steelhead) enter the Sacramento River downstream of Red Bluff Diversion Dam (RBDD) (e.g., Antelope, Deer, Mill Creek populations) October through June. Additionally, peak passage events of fish at the RBDD rotary screw traps should be evaluated by juvenile life-stage (e.g., fry, parr, smolt). For example, fry life-stage individuals are caught at much higher rates than larger-sized individuals, and flow-survival impacts should be weighted towards parr and smolt life stages, which are more actively out-migrating through Sacramento River mainstem to reach the ocean versus fry life-stages that are still rearing in the lower Sacramento River and Delta, often for extended periods of time. This is a key consideration for evaluating survival for status quo and Proposed Project scenarios and concluding whether or not survival would be similar in real-life scenarios based on the fish presence criteria used in the Sites Diversion tool. The analysis also omits Proposed Project impacts on Butte Creek and Feather River origin salmonids, including CESA listed salmonids which enter the Sacramento River below Wilkins Slough.
Appendix 11P - Riverine Flow-Survival	p. 11P.2	The RDEIR/SDEIS analyzes the effects of in-river flow generally utilizing the best flow survival science available (Michel et. al. 2021) and has documented the methodology well in Section 11P.2. The RDEIR/SDEIS assesses the proposed diversion criteria by application of published flow-survival relationships to daily flow data, while accounting for historical fish migration patterns as represented in monitoring data. The Sites Reservoir Daily Divertible & Storable Flow Tool provided daily Sacramento River at Wilkins Slough flows for the flow-survival analysis, which include daily diversions by the Red Bluff and Hamilton City diversions. However, the period of record is limited to 2009-2018 and does not include above normal year types during which Proposed Project diversions would be expected.

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Chapter 16 - Section 16.2.2.1, Table 16-2	p. 16-4 -16-6	Table 16-2 Key Recreational Characteristics of Recreation Area Potentially Affected by Proposed Project-Related Changes to SWP or CVP Operations is missing the Yolo Bypass Wildlife Area, a significant public recreation area in the Yolo Bypass. Additionally, some recreational areas are grouped while others are not (e.g., Sutter Bypass and Sutter National Wildlife Refuge are grouped within Sutter Bypass Wildlife Area). Table 16-2 inconsistently identifies acreage as part of each recreational area description. These details are important for understanding the scale of potential Proposed Project impacts. CDFW recommends the FEIR/FEIS include an updated table that identifies each individual wildlife area potentially affected, with each area's acreage clearly stated.
Chapter 28 - Section 28.4.1.3, Sites Reservoir Operation	General Comment	The modeling conducted in the RDEIR/SDEIS compares both with and without climate change future scenarios for all alternatives. The results from the analyses were then used to qualitatively assess the impacts and benefits that the Proposed Project might have with climate change. The RDEIR/SDEIS states that overall, it is not expected to have adverse effects on aquatic species under climate change (p.28-29). However, analyses in the RDEIR/SDEIS demonstrate that the Proposed Project operations will have an adverse impact on aquatic species and results from the climate modeling indicate the Proposed Project under climate change would likely exacerbate these adverse impacts. For example, the RDEIR/SDEIS states that it " <i>would result in larger reductions to flow under climate change in Critically Dry Water Years from December to March and larger increases in August to make up for the significantly decreased flow</i> " (p. 28-16). A reduction in flow in the months of December to March, particularly in critically dry years, which are predicted to increase under climate change, would have adverse effects on rearing and emigrating salmonids. Likewise, the RDEIR/SDEIS's analysis indicates that Delta outflow decreases with climate change, which could further exacerbate impacts to longfin smelt. CDFW recommends establishing more protective bypass flow criteria and include in the Proposed Project's adaptive management plan strategies to address how the Proposed Project may alter future operations to account for the potential adverse effects of climate change.
Chapter 31 - Section 31.3.1, Surface Water Resources and Water Quality	pp. 31-18, 19	Section 31.3.1 discusses diversions within the Central Valley and Delta as related to Table 31-1. However, the discussion does not include the Delta Conveyance Project (DCP) (although it is included in Table 31-1). The DCP has planned exports ranging from 3,000 cfs to 7,500 cfs, which will affect water supply and water quality. CDFW recommends revising the text to include proposed DCP construction and operations in analyzing the cumulative effects of the Proposed Project with past, present, and foreseeable future projects.

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## Appendix B - References

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**From:** Elaine Benjamin [EBenjamin@swc.org]  
**Sent:** 1/28/2022 1:17:04 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** SWC Comment Letter re: Sites RDEIR SDEIS  
**Attachments:** SWC Comments on Sites RDEIR SDEIS 01-28-22.pdf

Good Afternoon,

On behalf of the State Water Contractors, here is our comment letter for your consideration.

Thank you,  
Elaine

---

**Elaine Benjamin | Office Manager/Finance Administrator**  
**State Water Contractors**  
1121 L Street, Suite 1050 | Sacramento, CA 95814  
P: 916.447.7357 x202 | M: 916.812.2369  
[ebenjamin@swc.org](mailto:ebenjamin@swc.org)



<https://saveourwater.com/>

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January 28, 2022

*Delivered via email: [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)*

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

U.S. Bureau of Reclamation  
2800 Cottage Way, W-2830  
Sacramento, CA 95825

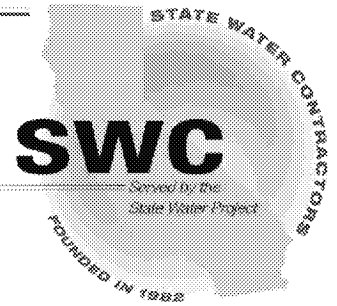
Subject: SWC Comments on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement for the Sites Reservoir Project

Dear Ms. Forsythe:

The State Water Contractors (“SWC”) appreciate this opportunity to comment on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement (“RDEIR/SDEIS”) for the proposal to construct and operate a new offstream water storage reservoir and associated facilities (“Sites Project”). The Sites Project proposes to capture excess water from the Sacramento River and local creeks and store it in the new 1.5 MAF Sites Reservoir for later use.

The SWC is an organization representing 27 of the 29 public water entities that hold contracts with the California Department of Water Resources (DWR) for the delivery of State Water Project (SWP) water.<sup>1</sup> Collectively, the SWC members provide a portion of the water supply delivered to approximately 27 million Californians, roughly two-thirds of the State’s population, and to over 750,000 acres of irrigated agriculture. Water supply delivered to the Bay Area, San Joaquin Valley, Central Coast, and Southern California from the SWP is diverted from the Sacramento-San Joaquin River Delta. The SWC members have made significant investments in the SWP and continue to make investments to protect this important water supply. Several of the SWC members are potential Sites Project Storage Partners.

<sup>1</sup> The SWC members are: Alameda County Flood Control & Water Conservation District, Zone 7; Alameda County Water District; Antelope Valley East Kern Water Agency; Central Coast Water Authority; City of Yuba City; Coachella Valley Water District; County of Kings; Crestline-Lake Arrowhead Water Agency; Desert Water Agency; Dudley Ridge Water District; Empire-West Side Irrigation District; Kern County Water Agency; Littlerock Creek Irrigation District; Metropolitan Water District of Southern California; Mojave Water Agency; Napa County Flood Control & Water Conservation District; Oak Flat Water District; Palmdale Water District; San Bernardino Valley Municipal Water District; San Gabriel Valley Municipal Water District; San Geronio Pass Water Agency; San Luis Obispo County Flood Control & Water Conservation District; Santa Clara Valley Water District; Santa Clarita Valley Water Agency; Solano County Water Agency; Tulare Lake Basin Water Storage District.



**DIRECTORS**

**Ray Stokes**  
**President**  
Central Coast Water  
Authority

**Craig Wallace**  
**Vice President**  
Kern County Water Agency

**Kathy Cortner**  
**Secretary-Treasurer**  
Mojave Water Agency

**Stephen Arakawa**  
Metropolitan Water District  
of Southern California

**Robert Cheng**  
Coachella Valley Water  
District

**Laura Hidas**  
Alameda County Water  
District

**Thomas Pate**  
Solano County Water  
Agency

**Matthew Stone**  
Santa Clarita Valley Water  
Agency

**Jacob Westra**  
Tulare Lake Basin Water  
Storage District

**General Manager**  
Jennifer Pierre

January 28, 2022

Page 2

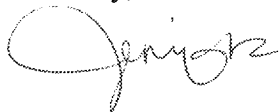
The SWC recognizes the importance of multi-benefit storage projects such as the proposed Sites Project, especially considering climate change impacts, including the frequent hydrologic whiplash from year to year and reduction of snowpack because of rising temperatures. Those impacts affect flood control, conditions for the environment, and water supply. While the SWC is supportive of such projects, it is essential that the SWP water supply reliability and the long-term investments by the SWC members are protected.

As noted in the RDEIR/SDEIS, the Sites Project proposes to divert excess flows from the Sacramento River. The unregulated flows downstream of the rim reservoirs constitute a significant portion of the SWP water supplies in addition to the water supply stored in Lake Oroville. The RDEIR/SDEIS notes that proposed diversions for the Sites Project would not impact SWP's ability to capture unregulated or excess flows. This commitment should be formalized in the Sites Project operations agreements with DWR and should include criteria that would protect the SWP water supplies and its ability to meet regulatory and contractual obligations. The operations agreements should also spell out how the Sites Reservoir operations would be accounted for and tracked to ensure ongoing SWP and CVP operations are not impacted.

The RDEIR/SDEIS also notes that the proposed operations of the Sites Project would rely on the SWP facilities, including Lake Oroville, to provide the water supply benefits to the Sites Project Storage Partners. The Sites Project operations agreements with DWR should ensure that the use of SWP facilities to provide benefits to Sites Project Authority or Storage Partners do not adversely impact SWP water supply or increase costs to the SWC members. Similarly, the agreements should ensure that the SWP is not backstopping the Delta outflow benefits proposed to be provided by the Sites Project.

In closing, the SWC believes the development of additional storage is a critically important part of the water supply portfolio for California to prepare and adapt to the rapidly changing climate. In addition to the new storage, the proposed location of the Sites Project also offers many opportunities for innovative and flexible water management needed in California. The SWC looks forward to working with you and DWR to ensure that the Sites Project is designed to avoid any adverse impacts to the SWP. If you have any questions or would like to discuss, please do not hesitate to contact me at (916) 447-7357 ext. 203.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Pierre". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

Jennifer Pierre  
General Manager

---

**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 1:18:02 PM  
**To:** Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]  
**CC:** Dibble, Chad@Wildlife [Chad.Dibble@wildlife.ca.gov]; Thomas, Kevin@Wildlife [Kevin.Thomas@wildlife.ca.gov]; Bartlett, Tina@Wildlife [Tina.Bartlett@wildlife.ca.gov]; Grover, Joshua@Wildlife [Joshua.Grover@wildlife.ca.gov]  
**Subject:** RE: California Department of Fish and Wildlife Comment Letter on the Sites Reservoir Project RDEIR/SDEIS

Thank you Kristal and the CDFW team for the comments. We appreciate your teams efforts and feedback. We look forward to continuing to work with you as we prepare the Final EIR/EIS.

I hope everyone has a great weekend!

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 | [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>  
**Sent:** Friday, January 28, 2022 12:50 PM  
**To:** EIR-EIS-Comments <eir-eis-comments@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** state.clearinghouse@opr.ca.gov; Dibble, Chad@Wildlife <Chad.Dibble@wildlife.ca.gov>; Thomas, Kevin@Wildlife <Kevin.Thomas@wildlife.ca.gov>; Bartlett, Tina@Wildlife <Tina.Bartlett@wildlife.ca.gov>; Grover, Joshua@Wildlife <Joshua.Grover@wildlife.ca.gov>  
**Subject:** California Department of Fish and Wildlife Comment Letter on the Sites Reservoir Project RDEIR/SDEIS

Dear Ms. Forsythe,

On behalf of Josh Grover, please find attached the California Department of Fish and Wildlife's comments on the Sites Reservoir Project Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement.

Best regards,

Kristal

**Kristal Davis Fadtke**  
Environmental Program Manager  
Water Branch, Ecosystem Conservation Division  
California Department of Fish and Wildlife  
P.O. Box 944209  
Sacramento, CA 94244-2090  
Office: (916) 376-1987  
Cell: (916) 701-3226

---

**From:** La Trici Jones [ljones@mojavewater.org]  
**Sent:** 1/28/2022 2:15:14 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Sites Comment Letter  
**Attachments:** Sites\_RDEIR-SDEIS\_MWA\_letter\_2022-01-27.pdf

Good afternoon,  
The attachment is being sent to you on the behalf of Allison Febbo, General Manager of Mojave Water Agency.

*La Trici*

*Thank you!*

*La Trici Jones*  
Executive Assistant  
 **Mojave Water Agency**  
13846 Conference Center Drive  
Apple Valley, CA 92307

Phone: (760) 946-7002  
Cell: (760) 552-2173  
Email: [ljones@mojavewater.org](mailto:ljones@mojavewater.org)



January 27, 2022

SENT VIA EMAIL

Sites Project Authority  
P.O. Box 517, Maxwell, CA 95955

U.S. Bureau of Reclamation  
2800 Cottage Way, W-2830, Sacramento, CA 95825

[EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

**RE: Comments on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement for the Sites Reservoir Project**

Dear Ms. Forsythe:

The Mojave Water Agency (MWA; Agency) appreciates the opportunity to comment on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the proposal to construct and operate a new off stream water storage reservoir and associated facilities (Sites Project).

The MWA is a State Water Project (SWP) contractor that relies on imported water supplies from the SWP to support the arid high desert region in San Bernardino County and mitigate groundwater overdraft. The MWA has made significant investments in the SWP and continues to make investments to support this important water supply for the region.

The MWA recognizes the importance of storage projects across the State such as the proposed Sites Project, especially considering climate change impacts including increasingly variable hydrology and reduction of snowpack. While the MWA is supportive of such projects, it is imperative that the SWP water supply reliability and the long-term investments by the Agency are protected and not impacted by such projects.

As noted in the RDEIR/SDEIS, the Sites Project proposes to divert excess flows from the Sacramento River. The unregulated flows downstream of the rim reservoirs constitute a significant portion of the SWP water supplies in addition to the water supply stored in Lake Oroville. The RDEIR/SDEIS notes that proposed diversions for Sites Project would not impact SWP's ability to capture unregulated or excess flows. This commitment should be formalized in the Sites Project operations agreements with DWR and should include criteria that would protect the SWP water supplies and its ability to meet regulatory and contractual obligations. The operations agreements should also spell out how the Sites Reservoir operations would be accounted for and tracked to

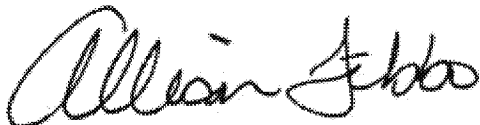


ensure ongoing SWP operations are not impacted. Without an understanding of the specific operating criteria for the Sites Project, it is unclear to the Agency how SWP Table A allocations and/or Article 21 water supplies made available would not be impacted by the operation of the Sites Project.

The RDEIR/SDEIS also notes that the proposed operations of the Sites Project would rely on the SWP facilities including Lake Oroville to provide the water supply benefits to the Sites Project Storage Partners. The Sites Project operations agreements with DWR should ensure that the use of SWP facilities to provide benefits to Sites Project Authority or Storage Partners do not negatively impact SWP water supply or increase costs to the MWA. Similarly, the agreements should ensure that the SWP is not backstopping the Delta outflow benefits proposed to be provided by the Sites Project. Lastly, the Sites Project should ensure that non-participants of the Sites Project are not required to backstop any financial default related to the project by the Sites Project Authority or Storage Partners under Article 50 of the Agency's Water Supply Contract with the State.

In closing, the MWA believes development of additional storage is a critically important part of the water supply portfolio for California to prepare and adapt to the rapidly changing climate. In addition to the new storage, the proposed location of Sites Project also offers many opportunities for innovative and flexible water management needed in California. The MWA looks forward to working with you and DWR to ensure that the Sites Project is designed to avoid any adverse impacts to the SWP. If you have any questions or would like to discuss, please do not hesitate to contact me at (760) 946-7000.

Respectfully,

A handwritten signature in black ink, appearing to read "Allison Febbo". The signature is fluid and cursive, written over a light blue horizontal line.

Allison Febbo, General Manager  
Mojave Water Agency

---

**From:** Butter Creek [lindynpat@gmail.com]  
**Sent:** 1/28/2022 2:46:13 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Input to Sites Reservoir Project EIR-EIS

**Input to Sites Reservoir Project EIR-EIS**  
**Impacts to and uses of Trinity River not stated or clearly addressed**

We are opposed to the project draft environmental document and cannot support your project. The Trinity River, its fisheries and habitats including cold water, need to be addressed. The Trinity River already loses too much natural flow to Whiskeytown, Keswick and beyond with no compensation to our county, fisheries or wildlife. In the past, during many long, dry years river flows have been inadequate for our coldwater fisheries and those downstream needs including up & downstream migration; even though flow regulators have attempted corrections to problems.

We are concerned that the draft EIR-EIS language is not clear enough to address protection of our Trinity River. In addition, we do not believe any high water flows should be sent to the Sites Reservoir Project until our Trinity and Lewiston Lake levels are adequate for more viable recreation, lake and river fisheries and other wildlife uses, including downstream. The consequences of Trinity River water leaving the county during the "more recent" severe drought years are painfully obvious. We also believe that many local Trinity County residents are unaware of this project's probable impacts to the river as the postings were vague.

Please keep us updated the progress of this projects, and  
Thank you for the opportunity for input.

Pat and Lindy McCaslin  
POB 178  
Hyampom, CA 96046  
[lindynpat@gmail.com](mailto:lindynpat@gmail.com)

---

**From:** King, Vanessa M [vking@usbr.gov]  
**Sent:** 1/28/2022 3:19:59 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Fw: [EXTERNAL] Re: Sites Reservoir Project - RDEIR/SDEIS Public Release  
**Attachments:** 2022-01-28\_Sites\_Res\_DEIREIS\_NFMS\_Comments-Signed-508-OK.pdf

Vanessa King  
Hydrologist and Interim Project Manager for Sites Reservoir Project  
Bureau of Reclamation, Interior Region 10 · California-Great Basin, Division of Planning  
Office: 916-978-5077

---

**From:** Stephen Maurano - NOAA Federal <stephen.maurano@noaa.gov>  
**Sent:** Friday, January 28, 2022 3:17 PM  
**To:** Dekar, Melissa D <mdekar@usbr.gov>  
**Cc:** King, Vanessa M <vking@usbr.gov>; Cathy Marcinkevage <cathy.marcinkevage@noaa.gov>; Evan Sawyer <evan.sawyer@noaa.gov>; Elif Wilkins - NOAA Federal <elif.wilkins@noaa.gov>  
**Subject:** [EXTERNAL] Re: Sites Reservoir Project - RDEIR/SDEIS Public Release

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Good Afternoon Melissa,

Attached are the NMFS Central Valley Office comments on the SDEIS/REIR for the proposed Sites Reservoir. We appreciate the opportunity to comment and looked forward to continued engagement.

Best,

Stephen

On Mon, Dec 27, 2021 at 9:41 AM Dekar, Melissa D <mdekar@usbr.gov> wrote:  
Good morning,

Some of you may have already heard, but I wanted to let you all know that we are extending the public and agency comment period on the Sites Reservoir Project RDEIR/SDEIS. Comments are now due by 5 PM, PST January 28.

Happy New Year!  
Melissa

Melissa Dekar  
Natural Resources Specialist  
Environmental Compliance and Conservation Branch, CGB-152

2800 Cottage Way, Sacramento, CA, 95825  
Interior Region 10, Bureau of Reclamation  
916-978-6153 [mdekar@usbr.gov](mailto:mdekar@usbr.gov)

On Tue, Nov 9, 2021 at 3:51 PM Dekar, Melissa D <[mdekar@usbr.gov](mailto:mdekar@usbr.gov)> wrote:  
Good afternoon,

A Notice of Availability for the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) will be published in the Federal Register this Friday, November 12 for a 60-day review period ending January 11, 2022. The document was posted to the Sites Project Authority's website today, here: [Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement - Sites Reservoir \(sitesproject.org\)](https://sitesproject.org/Revised-Draft-Environmental-Impact-Report-Supplemental-Draft-Environmental-Impact-Statement-Sites-Reservoir).

Two virtual public meetings will be held to provide information about the Project and the draft environmental analysis, and to accept public comments on the RDEIR/SDEIS. Each meeting will begin with a presentation followed by an opportunity to ask questions and provide comments. When links to the public meetings become available, they will be posted on the Sites Project Authority's webpage: [Sites Reservoir \(sitesproject.org\)](https://sitesproject.org)

**Public Meeting Dates:**

Wednesday, Dec. 15, 6-8 p.m. PST

Thursday, Dec. 16, 9-11 a.m. PST

For your awareness, in the months following the cooperating agency review period, there were some notable revisions to the Aquatic Biological Resources Chapter that resulted from discussions between the Sites Project Authority and CDFW. They are summarized below.

The following mitigation measure was added to reduce the operational impacts on Winter-Run, Spring-Run, Fall-Run/Late Fall-Run Chinook Salmon and Central Valley Steelhead for all alternatives.

Mitigation Measure: Implement Wilkins Slough Flow Protection Criteria whereby Project diversions would not occur from March through May of all water year types if flows in the Sacramento River at Wilkins Slough are below or would be reduced below 10,700 cubic feet per second.

NEPA conclusion for all alternatives: No Adverse Effect

The following mitigation measure was added to reduce the operational impacts on Delta Smelt for all alternatives.

Mitigation Measure: Evaluate and prevent potential detrimental water temperature and dissolved oxygen effects to Delta Smelt associated with moving Colusa Basin Drain water through the Yolo Bypass by monitoring and ceasing flows through the Yolo Bypass if detrimental effects are projected to occur.

NEPA Conclusion for all alternatives: No Adverse Effect

Thank you for your continued involvement as a cooperating agency on this project.

Melissa Dekar  
Natural Resources Specialist  
Environmental Compliance and Conservation Branch, CGB-152  
2800 Cottage Way, Sacramento, CA, 95825  
Interior Region 10, Bureau of Reclamation  
916-978-6153 [mdekar@usbr.gov](mailto:mdekar@usbr.gov)

--

Stephen Maurano (he/him/his)  
California Central Valley Office | NOAA Fisheries  
Office: (916) 930-3710 | Mobile: (916) 214-2675  
[www.fisheries.noaa.gov](http://www.fisheries.noaa.gov)





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
650 Capitol Mall, Suite 5-100  
Sacramento, California 95814-4700

January 28, 2022

Melissa Dekar  
Interior Region 10, Bureau of Reclamation  
Environmental Compliance and Conservation Branch, CGB-152  
2800 Cottage Way  
Sacramento, California 95825

Re: NMFS Comments on the Sites Reservoir, Supplemental Draft Environmental Impact Statement (SDEIS)/Revised Environmental Impact Report (REIR)

Dear Ms. Dekar:

We are writing in regards to the Sites Project Authority and U.S. Bureau of Reclamation Supplemental Draft Environmental Impact Statement/Revised Environmental Impact Report (SDEIS/REIR) for the proposed Sites Reservoir and associated facilities (Project). NOAA's National Marine Fisheries Service (NMFS) has reviewed the draft document and is providing technical assistance comments as they relate to anadromous fishes under our jurisdiction. As a Cooperating Agency under the National Environmental Policy Act (NEPA), we have agreed to work closely with you in evaluating key sections of the SDEIS/REIR and to provide feedback regarding its level of analysis. We also identify elements of the Project that will need further scrutiny during the development of a Biological Assessment and materials required for the initiation of consultation pursuant to section 7 of the Endangered Species Act (ESA). As such, we view the analyses presented in the SDEIS/REIR as foundational for any additional analyses necessary to support the ESA consultation for the proposed action. NMFS is submitting the attached comments regarding the Project Description, Environmental Analysis, Cumulative Effects, Surface Water Quality, Climate Change, Fluvial Geomorphology and Aquatic Biological Resources. We appreciate the opportunity to comment on this important document and for continued engagement.

If you have any questions regarding our input, please contact me at [cathy.marcinkevage@noaa.gov](mailto:cathy.marcinkevage@noaa.gov) and (916) 930-5648 or Stephen Maurano of my staff at [stephen.maurano@noaa.gov](mailto:stephen.maurano@noaa.gov) and (916) 930-3710.

Sincerely,

Cathy Marcinkevage  
Assistant Regional Administrator  
California Central Valley Office

Enclosure

Cc: To the file 151422-WCR2022-SA00005  
Vanessa King  
Hydrologist and Interim Project Manager for Sites Reservoir Project  
Division of Planning  
U.S. Bureau of Reclamation  
2800 Cottage Way, MP-720  
Sacramento, California 9582



Draft\_0014988

Table 1. NMFS Comments on the Sites Reservoir SDEIS/REIR

Reference	Comment
2-23	<p>Has the likelihood of development around the reservoir (either planned or potential) been analyzed to determine the impacts to reservoir operations and water quality? Planned and potential recreational developments around the reservoir are noted in the project description (e.g. Peninsula Hills, Stone Corral, and a potential additional Glenn County access point) but the RDEIR/SDEIS doesn't specify whether there are any plans for additional real estate development (concessions, lodging, etc) in the watershed, or conversely, easements that would prevent future development. The current land use designation (pages 14-3 to 14-6) include agricultural uses (livestock and ranching operations, dry land farming, intensive agricultural production and agricultural processing) in addition to automotive, hotel, restaurant and retail uses. These land uses can create substantial stormwater and wastewater loadings with elevated nutrients, metals, and other pollutants. How will land use be managed in the areas draining to Sites Reservoir to maintain water quality or the impacts mitigated to reduce the pollutant loadings?</p>
2-30	<p>The project description asserts that, "The Project would not affect or result in changes in the operation of the CVP, Trinity River Division facilities (including Clear Creek)." However, it also states that, "The proposed operation of the Project includes exchanges of water with the CVP and SWP." More specifically, in the description of surface water resources (page 5-11) it specifies that, "Sites Reservoir would operate in conjunction with the operations of Shasta Lake, and flows in the Sacramento River downstream of Shasta Lake would be affected by Sites Reservoir diversions and releases." According to the US Bureau of Reclamation Great Basin Digital Library, "The Shasta and Trinity River Divisions catch the headwaters of the network of Central Valley Project waterways and channel the water southward. Both divisions are part of the Central Valley Project. They are close to each other, with the Shasta Division on the Sacramento River about 10 miles north of Redding and the Trinity River Division on the Trinity River about 25 miles northwest of Redding. Surplus water from the Trinity River Basin is stored, regulated, and diverted through a system of dams, reservoirs, tunnels, and powerplants into the Sacramento River for use in water-deficient areas of the Central Valley Basin. Water is used for irrigation, power generation, navigation flows, environmental and wildlife conservation, and municipal and industrial needs." In short, Trinity River and Clear Creek operations are closely tied to Shasta and other CVP operations. If, as stated, Sites Reservoir will affect Shasta operations, then it has the clear potential to also improve, or exacerbate, conditions on the Trinity River and Clear Creek. Given the assertion that Sites Reservoir "would not affect or result in changes in the operation" of the Trinity River Division, what assurances are there that interbasin transfers from the Trinity River will not be stored in Sites Reservoir, either directly or via exchanges?</p>
2-30	<p>What is the basis for the cessation of the Bend Bridge Pulse Protection after 7 days (followed by the requirement for 3-day trailing average of low flows)? If flows remain elevated (for example if there are consecutive or prolonged events that increase river flow, and/or if fish remain present in high numbers) Sites Reservoir withdrawals could lead to adverse fisheries impacts. There is also a problematic lag time in the proposal resulting from the choice to use a 3-day trailing average combined with the delay inherent in monitoring (to detect fish or flow events) before initiating protection. NMFS suggests that methods be developed to implement a Bend Bridge Pulse Protection proactively, to protect fish presence and movement earlier, especially on the ascending limb of the hydrograph. For example, predictive models could use historic hydrology and fish presence data to determine what flows will likely mobilize fish. Hydrologic, meteorologic and operations tools (e.g. from the USBR Shasta &amp; Trinity River Division and the</p>

Reference	Comment
	California Nevada River Forecast Center) can be used to forecast operations, rainfall and flow at Bend Bridge. A proactive Bend Bridge Pulse Protection could be especially important for earlier migrants in the first pulse after a drier period, as well as for later migrants facing small windows of suitable outmigration conditions. More generally, protecting the life history diversity in outmigration timing is key to salmonid population viability.
2-31	The project description (page 2-31) estimates that Sites Reservoir annual diversions will range from 60-390 TAF attempting to fill a 1.3-1.5 MAF reservoir. The surface water resources analysis (page 5-29) reports that storage levels are expected to be greater than 1 MAF during wet conditions but could drop below 225 TAF during the fall of Critically Dry Water Years (Table 5-17). Will Sites be filled with other sources of water such as groundwater or other surface water rights not accounted for in the 60-390 TAF of diversions described above? Are the dead pool storage assumptions (120 TAF under the preferred alternative per page 5A1-27) already calculated into the 225 TAF referenced above? In summary, is it anticipated that Sites would be left with less than 105 TAF of accessible water during the Fall of Critically Dry Water Years?
2-31	The project diversion criteria sets bypass flows of 3,250 cfs at Red Bluff Pumping Plant and 4,000 cfs at Hamilton City Pump Station. NMFS would suggest developing criteria beyond these minimum static flows. Targets should better reflect the intra-annual and inter-annual variability of a natural hydrograph with criteria that vary by season and water year. The criteria should also take into consideration Reclamation's Fall Base flows (e.g. when Shasta Storage is $\leq$ 2.2 MAF, flow is 3,250 cfs; $\leq$ 2.8 MAF, flow is 4,000 cfs; $\leq$ 3.2 MAF, flow is 4,500 cfs; $>$ 3.2 MAF, flow is 5,000 cfs).
2-36	The project description states that in late summer and fall (i.e., August through November) Reclamation would release water from Shasta Lake and/or the CVP share of Sites Reservoir for Storage Partners. It should be noted, however, that releases in this time period can have adverse impacts on salmon spawning, rearing, redd dewatering, and stranding. In short, the exchanges for Cold Water Pool maintenance could exacerbate the challenge of stabilizing flows to prevent stranding and redd dewatering.
2-56, 60	The document states that, "Alternative 1 is the Authority's preferred alternative" but also that, "...two options have been identified under this alternative." Which sub-alternative ("1A" or "1B") is preferred? Additionally, the lack of clarity regarding CVP/SWP operation agreements with Sites Reservoir creates uncertainty in the modeling assumptions and the effects determinations. The preferred alternatives (including the specific sub-alternative) and the responsible federal agency for operations and ESA consultation should be identified as soon as possible.



Reference	Comment
31-40	<p>NMFS recommends using a future scenario that includes reasonably foreseeable projects and climate conditions for 2030, which is the earliest that the Project will be operational. In addition, the cumulative impacts note that the Delta Conveyance Project is reasonably foreseeable (pg 31-40), but it isn't explicitly included in the baseline (using the rationale that it would have to meet future regulatory requirements and the Sacramento River and Delta flows are already highly altered and regulated). The cumulative impacts analysis explains that, "Given the mixture of potential negative and positive effects from the actions of the past, present, and reasonably foreseeable projects, there is some uncertainty in how Alternative 1 or 3 would ultimately affect the cumulative condition" and concludes that, because effects on salmonids would be spatially and temporally limited or mitigated, they do not cause significant incremental impact when added to other reasonably foreseeable future actions. Because the Sites Reservoir and Delta Conveyance Projects are being simultaneously permitted, neither project is reciprocally analyzing the impact of the other. The proposed Delta Conveyance Project is likely to be a contemporaneous infrastructure project to the proposed Sites Reservoir with congruent potential effects on aquatic resources. Therefore the combined effects of both projects should be explicitly analyzed to understand the impact on aquatic resources.</p>
32-17	<p>In Table 32-8 the Water Quality and Fish Impacts (for Winter, Spring, and Fall Chinook Salmon and Steelhead) are determined under NEPA to have substantial adverse effects without mitigation. With mitigation, the water quality impacts are partially improved to an adverse effect determination, but the Fish Impacts are fully mitigated to no effect or no adverse effect determinations. The single mitigation measure proposed, FISH-2.1, is a useful operational criteria, but limited since it only maintains historic mean flow at Wilkins Slough for a quarter of the year for out migrating juvenile Chinook salmon. This limited measure is not significant enough to reduce the impacts of the project's increases in water withdrawals from the Sacramento River that result in a reduction in winter-run spawning area in Critically Dry Water Years, 8-10 days of increased water temperatures at Hamilton City above Salmon Juvenile Rearing and Emigration targets, and an over 100 acres estimated reduction in Mean Daily January through April Inundated Habitat (Acres &lt;1 Meter Deep) for Juvenile Salmonids in the Yolo Bypass. Mitigation measures to address additional habitat, time periods, and life stages are needed.</p>
6-102	<p>NMFS suggests that stormwater mitigation measures include bioretention treatment that would help sequester microplastics like tire wear particles and other roadway/vehicular toxicants.</p>
6-11	<p>In Table 6-3, applicable regulatory water quality criteria/objectives should reference the EPA-recommended criteria for ammonia. Also, in addition to organic carbon, metrics related to eutrophication like chlorophyll-a and microcystins should be included in the table.</p>
6-23	<p>Selenium values from Stone Corral Creek near Sites are greater than that allowable in the San Joaquin Basin, for example, and could be more concentrated in first flush storm events. Values from Sites should be mitigated to ensure that they do not produce significant pollutant loadings downstream.</p>
6-28	<p>The use of CALSIM monthly data (e.g. for metals, pesticides, salinity, and HABs) lacks the temporal resolution to analyze acute water quality exceedances. Additionally, it's suggested that the CE-QUAL-W2 model being used for temperature analysis in Sites Reservoir be further developed to analyze the other potential water quality impacts in the reservoir: namely metals, including mercury, salinity, and especially eutrophication and HABs.</p>

Reference	Comment
6-33	The Surface Water Quality Analysis notes that, "When Sites Reservoir would release water to the Sacramento River, it would constitute 6%–7% of the Sacramento River flow on average and 12%–13% when discharges are relatively high compared to river flow (i.e., 90th percentile values), depending on whether Alternative 1, 2, or 3 was implemented." Do these percentages reflect just Alternative 2 direct releases to the river, or loading indirectly (e.g. via CBD, KLRC, and/or Yolo Bypass)? Additionally, the use of the average receiving water volume to determine dilution calculations assumes instantaneous and complete mixing, but water quality impacts could exceed regulatory standards within the initial zone of dilution.
6-33	Please provide a copy of the spreadsheet blending model for monthly water temperatures in TC Canal and CBD described in Section 6.3.2.5.
6-34	The water temperature modeling, "was based on the CALSIM flows at Wilkins Slough for Alternatives 1, 2, and 3 and the temperatures were based on measured data that were the same for all alternatives. The use of a single set of temperatures for the Sacramento River allows an evaluation of the effects due to Sites Reservoir releases not confounded by changes in temperature due to changes in Shasta Lake operations. More details regarding the monthly blending model are provided in Appendix 6D, Sites Reservoir Discharge Temperature Modeling." However, this modeling assumption makes it difficult to see the net impact of Shasta Lake operations as well as the proposed Sites Reservoir operations.
6-39	Mercury impacts on aquatic life (in addition to human health and wildlife) should be further analyzed, especially for sturgeon. Mercury can affect the immune, respiratory and cardiovascular systems, reproductive organs, nervous systems, and digestive systems of fish. Mercury impacts on fish are discussed in the aquatic biological resources section (page 11-16), and an increase in mercury levels in the Delta is discussed, but dismissed for salmonids based on a short temporal overlap of the species with the contaminant and the historic data showing low tissue levels in salmon (page 11-121). However, this analysis is not discussed for sturgeon, which have been reported to have higher levels of mercury in tissues. Mercury was a cause of ESA listing for the Green Sturgeon sDPS in California’s Central Valley and the impact of the Sites Reservoir increases in mercury loading should be analyzed for this species.
6-53, 59	How would the vegetation be removed prior to reservoir filling (e.g. manual removal, burning, pesticides)? Adverse effects to downstream water quality will depend on this answer.
6-55 to 56	The surface Water Quality Analysis notes that, "During initial filling of Sites Reservoir, nutrient (nitrogen and phosphorus) levels would be expected to be relatively high due to flooding of soils in the inundation footprint. This, along with warm water temperatures starting in late spring, could contribute to creating conditions conducive to promoting and maintaining HABs, and supporting the growth of nuisance algae and aquatic vegetation." However, it concludes that, "Downstream effects on water quality would not be expected if cyanobacteria and cyanotoxins were present in the releases because concentrations of cyanobacteria and cyanotoxins would be greatly diluted when eventually discharged into the Sacramento River. Furthermore, cyanotoxins undergo biodegradation and photodegradation." The assumptions behind this dilution should be fully explained. Specifically, will reservoir releases be limited during HAB events to prevent downstream release of cyanotoxins? Will any releases that could impact human health or aquatic life be timed such that the discharge can be adequately diluted?

Reference	Comment
6-55, 58	<p>The water quality analysis acknowledges short term exceedances of water column and fish tissue criteria for methylmercury. What best management practices will be implemented to control or prevent this? The SDEIS/REIR proposed to not stock fish for 10 years after initial filling, but striped bass larvae and other Centrarchids larvae may be entrained in the water withdrawal and establish in the reservoir. Have the measures proposed in methylmercury management/mitigation measures WQ-1.1 been proven to be effective in their purpose? On Pages 6-54 and 6-73, how were the "reasonable worst-case" Estimated Long-Term Average Concentrations of Total Mercury and Methylmercury in Sites Reservoir determined? The argument presented that Sites mercury loading isn't impactful because Yolo Bypass concentrations are higher (page 6-75), fails to account for mercury cycling where Hg could accumulate in Yolo Bypass sediments and fish tissues from Sites loadings, if the concentrations from Sites are lower. This mechanism is explicitly listed for metals other than mercury under Temporal Shift and Evapoconcentration (page 6-81).</p>
6-9	<p>The discharge of salinity and nutrients to the Sacramento River due to Sites Reservoir construction and operations (on account of increases agricultural use, routing of the water through the Colusa Basin Drain, and brine springs, seeps and salt ponds in the reservoir footprint) should be included, along with metal and pesticide effects, in Mitigation Measure WQ-2.2.</p>
6-90	<p>The statement "Releases from Sites Reservoir would generally have low to no concentration of pesticides and would therefore not degrade Sacramento River water quality" is not substantiated with monitoring or modeling data. The diversion of Sacramento River water through agricultural land use could cause an increase in pesticide and herbicide concentrations. For example, it's noted on page 6-91 that "There was some indication that the 2016 pulse of Sacramento River water reduced pesticide concentration at the upstream end of the Yolo Bypass, but it may have conveyed some pesticide downstream to the lower part of the bypass near Lisbon Weir." Unfortunately, the mitigation measure proposed won't reduce pesticide concentrations, but rather remove the environmental benefit of the flows entirely: depending on the state of the science and fish needs (including water quality impacts), flows would cease if there were no net benefit.</p>
13-5 & 21-6	<p>The Minerals analysis (page 13-5) notes the existence of nearby capped natural gas wells (e.g. specifically underlying the northeastern portion of the inundation area). What's the likelihood of natural gas being emitted into the reservoir once it is full. Ultimately what is the likelihood of that gas being emitted to the atmosphere and contributing to greenhouse gas emissions? How would it be mitigated during construction or operations? What are the anticipated reservoir carbon emissions from all sources of construction and operations? The greenhouse gas emissions discussion fails to conduct an analysis of reservoir emissions only noting that, "Such a comparison requires a detailed accounting of local and site-specific variables, including salinity, pH... type of grass, carbon content of soils, and other chemical and biological characteristics. Additionally, post-impoundment studies and sampling would be required. These types of site-specific data are not available, and, as such, a quantified analysis of potential GHG emissions from conversion of existing cattle grazing land to a surface storage reservoir is not possible and would be speculative. When the Authority takes ownership of the land in the inundation area, it may be possible to quantify GHG emissions from land conversion... It is anticipated that, at that time, the necessary data and studies would be attainable." A firmer commitment to complete this analysis is needed before construction or other project activities preclude mitigation measures. Greenhouse gas emissions from other temperate reservoirs with generally shared characteristics as Sites should be reported and considered. The California Air Resources board Current California GHG Emission Inventory, or other similar datasets, should be queried for emissions</p>

Reference	Comment
	<p>data on inundated lands and reservoirs. Furthermore, desktop analysis, even with limited field data, should be pursued and methods should be explored such as those in the references below. Sites Reservoir is among the largest potential surface water storage projects to be constructed in California in decades, and an adequate analysis of greenhouse gas emissions for the life of the project will be important over the lifetime of the project.</p> <ul style="list-style-type: none"> <li>● Keller, P. S., Marcé, R., Obrador, B., &amp; Koschorreck, M. (2021). Global carbon budget of reservoirs is overturned by the quantification of drawdown areas. <i>Nature Geoscience</i>, 1-7.</li> <li>● Scherer, L., &amp; Pfister, S. (2016). Hydropower's biogenic carbon footprint. <i>PloS one</i>, 11(9), e0161947.</li> <li>● Deemer, B. R., Harrison, J. A., Li, S., Beaulieu, J. J., DelSontro, T., Barros, N., ... &amp; Vonk, J. A. (2016). Greenhouse gas emissions from reservoir water surfaces: a new global synthesis. <i>BioScience</i>, 66(11), 949-964.</li> <li>● Soumis, N., Duchemin, É., Canuel, R., &amp; Lucotte, M. (2004). Greenhouse gas emissions from reservoirs of the western United States. <i>Global Biogeochemical Cycles</i>, 18(3).</li> </ul>
7-20	<p>Alterations to the natural river hydrology and geomorphology can have adverse impacts on native aquatic biota. Specifically, the Fluvial Geomorphology Chapter notes that the preferred alternative may reduce Yolo Bypass inundation from January through June by approximately one day across most water year types and reduce in Delta outflow during the wetter months. NMFS is concerned with the impact of Sites Reservoir operations on the performance of the Big Notch project and would like to discuss in more detail the modeling and how operations will be coordinated in real time.</p>
11-111	<p>Mean weighted usable area in winter-run spawning grounds from Keswick Dam to ACID dam is 5-6% less than the no action alternative in May of Critically Dry Water Years. The loss of early spawning habitat during critical years is especially detrimental since there is frequently a lack of cold water to support the survival of eggs spawned later (e.g. August, July, or even June).</p>
11-126 to 11-127	<p>The SDEIS/REIR analysis applies the IOS (Interactive Object-Oriented Simulation) and OBAN (Oncorhynchus Bayesian Analysis) winter-run Chinook salmon life cycle models. As was previously communicated to Reclamation in conversations from January through April of this year, and in our July comment letter, NMFS recommends the use of the Sacramento River Winter-run Chinook Salmon Life Cycle Model (WRLCM) for a project of this nature and magnitude to adequately integrate effects of the alternatives on the species. Use of the WRLCM is consistent with NEPA regulations that, "...agencies may make use of any reliable data sources, such as remotely gathered information or statistical models," (NEPA Implementing Regulations 40 CFR 1500–1508 § 1502.23) and the ESA consultation requirement that, "...each agency shall use the best scientific and commercial data available." (The Endangered Species Act § 7(a)(2) and 50 CFR 402.14(f)(8)). Application of the WRLCM to Sites Reservoir analysis contrasts with IOS and OBAN based on the following factors:</p> <p>Comparability - It is unclear in the SDEIS/REIR how IOS and OBAN will be synthesized into a single analysis or how they can be compared to related baseline or cumulative actions such as Central Valley Project Operations or the Delta Conveyance Project (both of which apply the WRLCM).</p> <ul style="list-style-type: none"> <li>● Level of Model Review - The WRLCM has extensive documentation and monthly stakeholder outreach meetings to discuss model developments and applications. NMFS is not aware of similar levels of documentation and outreach for OBAN and IOS.</li> </ul>

Reference	Comment
	<ul style="list-style-type: none"> <li>● Egg Incubation - Temperature dependent mortality modeling has evolved over the past five years. The WRLCM integrates the most recent peer-reviewed temperature dependent mortality relationships.</li> <li>● Yolo Bypass - The WRLCM models the Yolo Bypass floodplain explicitly where the entrance to the floodplain habitat is dependent upon overtopping of the Fremont Weir during the specific month of dispersal, or otherwise tidal fry move to the delta and bay habitats to rear in that month.</li> <li>● Delta Passage and Survival - WRLCM has monthly timesteps for Calsim hydrology and 15 minute steps for tidal fluctuations and exports as well as mechanistic components (enhanced particle tracking) which can perform better than statistical approaches at this model function.</li> </ul> <p>Although some inference is attempted in the SDEIS/REIR attempting to apply the WRLCM results for California WaterFix (to conclude that the Sites Reservoir alternatives would not substantially change delta rearing habitat for juvenile winter-run Chinook salmon), that modeling is dated and the project is not sufficiently similar to Sites Reservoir to conclude that the WRLCM results will be applicable here. In summary, the better compatibility, level of review, handling of egg incubation, representation of the Yolo Bypass, and resolution in the Delta are all relevant to the proposed Sites Reservoir and suggest the use of the more robust WRLCM. The built impacts and operations of the proposed project will continue indefinitely and therefore the best available scientific models should be applied to understand the effects on winter-run Chinook salmon populations. NMFS continues to emphasize the urgency to address concerns with the life cycle modeling framework for both the NEPA process and anticipated ESA consultation. NMFS is likely to require results from analyses that are provided by the WRLCM to adequately analyze effects for the jeopardy determination required in ESA consultation. To our knowledge, no other model provides the same suite of capabilities.</p>
11-88	<p>The hydrologic model results report diversions as a percentage of Sacramento River Flow, averaged by month and water year type, from CalSim Modeling. Results should reflect critical conditions (e.g. drought in summer) not just average conditions (which can be highly variable in California, even when stratified by water year). In particular, the average for Critically Dry Water Years presented in Table 5-11 doesn't represent potential critical conditions since it averages across what can be a wide range of storage conditions. While the conditions of a single year may be important, prolonged dry periods (e.g. in back to back water years) in the Sacramento River can exhaust CVP/SWP surface storage capacity, leading to high river temperatures (e.g. 2014-15, 2020-21) and elevated extinction risk. NMFS suggests pursuing an analysis to understand the effects of the project on the Sacramento River during prolonged dry periods, like the severe droughts that have been experienced in recent years.</p>
11-88	<p>Reduction in Spring pulse flows and Summer base flows on the Sacramento River can have negative repercussions on salmon life history. For example, Alt 1A increases diversions at Red Bluff substantially in March (increasing by 11% in Above Normal years and 12% in Below Normal years). Under the preferred alternative, Hamilton City will be withdrawing about 25% of the river flow in the late spring and through mid-summer (e.g. May-August) while Red Bluff is withdrawing more than 10%. The flow and temperature impacts can combine to have additional negative effects. For July of Above Normal Water Years at Hamilton City, there is anticipated to be an increase in temperatures for the juvenile rearing and migration life stages in which there were 11.6% more days than the no action alternative (NAA) exceeding the 64°F 7-day average daily maximum (7DADM) index value and the mean daily exceedance on those days was 0.7°F greater than the NAA.</p>

Reference	Comment
11B-11	The Water Temperature Index Value Analysis obscures temperature impacts of the project. In particular, the biologically meaningful criteria (page 11B-8) is too narrow in its definition (requiring both 5% difference in days/month and 0.5 F increase) and the temperature targets in Table 11-B-2 (page 11B-11) need refinement (e.g. Winter-run Spawning, Incubation and Alevins should target 53.6°F (consistent with the Winter-Run Chinook Salmon Egg Mortality Analysis Based on Martin et al., 2017, and described on page 11O-1). Additionally the adult holding targets for Winter-Run may need to be more lower than those proposed in order to prevent disease and decreased gamete viability in holding adults, as described
11D-1	Can the data in Appendix 11D (Fisheries Water Temperature Assessment) be provided in a spreadsheet format (e.g. .xls or .csv), since there are 634 pages of tables with no visualizations, making the results difficult to view and interpret.
11D-81	Table 11D-32 indicated that in critical years there will be 8-10 days of increased water temperatures at Hamilton City above the 64°F 7DADM target for Spring-Run Chinook Salmon Juvenile Rearing and Emigration - but also reports a mean difference of 0 to 0.1°F. How can there be an increase in days above the indicator value, but no change, or a decrease, in mean temperature? This same dynamic is seen in numerous other tables, (e.g. Tables 11D-3, 10, 11, 17, 20, etc.)
11O-6	The No Action Alternative reports annual temperature dependent mortality (TDM) of only 16.6% (10% exceedance probability) and 24.4% (the 15% of water years that were critical years). Yet, TDMs well above these were experienced in 2004, 2008, 2014, 2015 and 2021. This may indicate that the 82-year simulation period ending in 2003 fails to capture the current and future critical temperature conditions in the Sacramento River.
11P-1	Please provide a copy of the Sites Reservoir Daily Divertible & Storable Flow Tool (version 20210309 and latest version) Excel workbook.
11P-8	NMFS suggests that Figures 11P-3 & 4 show results for Sites without MM FISH-2.1 so the impact of the mitigation measure can be demonstrated.

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**From:** Setka, Jose [jose.setka@ebmud.com]  
**Sent:** 1/28/2022 3:39:38 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Hsiu, I-Pei [ipei.hsiu@ebmud.com]; Workman, Michelle [michelle.workman@ebmud.com]  
**Subject:** EBMUD Comments – Sites Reservoir RDEIR/SDEIS  
**Attachments:** EBMUD Comment Letter Sites Reservoir EIR.docx

Good afternoon,

Please find attached EBMUD's comments on the Sites Reservoir RDEIR/SDEIS. Thanks again for the opportunity to comment and presentations you have provided. Jose

**Jose D. Setka**

Environmental Affairs Officer

Bay – Delta Team Manager

375 11<sup>th</sup> Street

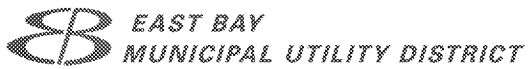
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*EBMUD Stewardship ~ Integrity ~ Respect ~ Teamwork*



January 28, 2022

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955  
Email Address: [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

**VIA EMAIL**

Subject: EBMUD Comments – Sites Reservoir RDEIR/SDEIS

Dear Sites Project Authority:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to provide comments on the Sites Reservoir RDEIR/SDEIS. We recognize the singular challenge of developing a major water infrastructure project such as Sites Reservoir and provide these comments in the spirit of collaborative engagement and attention. Reviews were conducted through the lens of potential adverse impacts to Mokelumne River fisheries and wildlife, in addition to EBMUD operations in general. Particular attention was provided to potential interactions between project operations and interior Delta flows and timing, which can influence migration pathway selection for returning Mokelumne origin Chinook salmon and steelhead trout.

For a full assessment of impacts to Mokelumne River salmonid populations to be completed, a detailed description of Sites Reservoir operations (including withdrawals and releases) would be needed. Specific plans that would inform a thorough assessment of Sites Reservoir impacts include a Reservoir Operations Plan, Reservoir Management Plan including fisheries management and reservoir water quality, and Standard Operating Procedures. The Sites Project Authority is working with Reclamation and DWR to develop operating agreements that would describe the approach for coordinating operations with Sites and the CVP and SWP operations, respectively. These agreements, along with the plans mentioned above, would provide the information needed to better assess potential impacts to Mokelumne River salmonid populations.

EBMUD would be interested in the flow schedules that would be incorporated into the Reservoir Operations Plan that identify the approach for releases, including release schedules and volumes, and interactions with DCC operations. Absent such plans, the RDEIR/SDEIS makes general statements such as “water would be held in storage in Sites 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 a Storage Partner’s need and capacity to convey water to its intended point of delivery.” (pg. 2-29) Additional detail is needed to assess the



significance of Sites Reservoir operations on central Delta flows that can influence migration pathway selection for adult and juvenile anadromous fish.

Notable exclusions from the RDEIR/SDEIS included impacts to straying rates of returning Mokelumne River spawners, Delta temperature assessments based on water temperature index values for fall-run Chinook salmon, interior Delta estimates of reach specific survival, and effects to predation rates based on changes to south Delta entrainment. Additions or improvements to the analysis could benefit from:

- To assess through-Delta survival, the Delta STARS Model was used. STARS stands for Survival, Travel Time, and Routing Simulation and is based on Perry et al. 2018. From the STARS model website, it is important to note that the STARS model is based on a set of relationships fitted to hatchery-origin late-fall Chinook salmon that migrated through the Delta between late November and mid-March over a five-year period (2007 - 2011). Therefore, model output should be thought of as a “historical expectation.” Limited information regarding model assumptions were provided in Appendix 11H and when model data and assumptions deviate from “historical expectation,” such deviations should be presented and reviewed within the RDEIR/SDEIS.
- For a thorough review of through-Delta survival, we need to see the full-range of model assumptions, route entrainment estimates, and estimates of survival for each of the eight unique migration reaches (in particular the Delta Cross Channel to Mokelumne River and Interior Delta reaches) through the Delta to assess impacts to Delta survival and Mokelumne origin salmon outmigrants. In addition, uncertainty interval values for the estimates of survival should be included for review.

The interior Delta provides multi benefit services to water supply, water quality, and ecosystems, among others. Many of these benefits are influenced by timing and duration of DCC operations. As a central Delta tributary, the Mokelumne River and its anadromous fish populations are heavily influenced by conditions within the interior Delta. The Lower Mokelumne River Partnership (EBMUD, CDFW, USFWS) has been actively engaged in identifying opportunities to reduce the impact on salmonid straying associated with DCC operations. EBMUD welcomes the opportunity to engage with the Sites Project Authority to further develop the analysis on operations and the influence on Mokelumne origin salmonids. Please direct any questions to I-Pei Hsiu ([ipei.hsiu@ebmud.com](mailto:ipei.hsiu@ebmud.com)) and she will forward to appropriate staff. Thank you.

Sincerely,



Jose D. Setka  
Environmental Affairs Officer

JDS:IHH

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**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/28/2022 3:45:55 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** FW: Sites Project EIS/EIR comments  
**Attachments:** SitesProjectEIR\_OEHHACommentsLetterhead\_final\_encrypted\_.pdf

Hi Ali,

Can Linda or I do this or would you prefer to reach out to staff at Office of Environmental Health Hazard Assessment to get a non-encrypted version of their comments (see below).

Thanks,

Laurie

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**From:** Davis, Susan <susan.davis@icf.com>  
**Sent:** Friday, January 28, 2022 8:42 AM  
**To:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>  
**Cc:** Williams, Nicole <Nicole.Williams@icf.com>  
**Subject:** FW: Sites Project EIS/EIR comments

Laurie and Linda,

Could one of you reach out to the respondent and ask for a copy of their comments that is not password protected. We need to combine their comment letter with a PDF of their email and cannot do so with the password protected file.

Thank you!

Susan



Susan Davis | Manager, Environmental Planner | +1.916.737.3000 main | [Susan.Davis@icf.com](mailto:Susan.Davis@icf.com) | [icf.com](http://icf.com)  
ICF | 980 9<sup>th</sup> Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.752.0929 mobile

---

**From:** Stanton, Rebecca@OEHHA <[Rebecca.Stanton@oehha.ca.gov](mailto:Rebecca.Stanton@oehha.ca.gov)>  
**Sent:** Friday, January 28, 2022 8:12 AM  
**To:** [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)  
**Cc:** Klasing, Susan@OEHHA <[Susan.Klasing@oehha.ca.gov](mailto:Susan.Klasing@oehha.ca.gov)>; Murphy, Shannon@OEHHA <[Shannon.Murphy@oehha.ca.gov](mailto:Shannon.Murphy@oehha.ca.gov)>; VanDyke, Marisa@Waterboards <[Marisa.VanDyke@waterboards.ca.gov](mailto:Marisa.VanDyke@waterboards.ca.gov)>; Nilson, Carly@Waterboards <[carly.nilson@waterboards.ca.gov](mailto:carly.nilson@waterboards.ca.gov)>; Rinde, Jenna@Wildlife <[Jenna.Rinde@Wildlife.ca.gov](mailto:Jenna.Rinde@Wildlife.ca.gov)>  
**Subject:** Sites Project EIS/EIR comments

Please see attached comments on the Sites Project EIS/EIR.

Thanks

Becky

Becky Stanton, Ph.D. [*she/her*]

Staff Toxicologist  
Fish, Ecotoxicology, and Water Section  
Office of Environmental Health Hazard Assessment  
Phone # 279-895-5927  
[Rebecca.stanton@oehha.ca.gov](mailto:Rebecca.stanton@oehha.ca.gov)

<https://oehha.ca.gov/risk-assessment/harmful-algal-blooms-habs>

*Please note: OEHHA is subject to the California Public Records Act. E-mail communications with OEHHA staff are not confidential and may be produced to members of the public upon request.*



Gavin Newsom, Governor  
Jared Blumenfeld, Secretary for Environmental Protection  
Lauren Zeise, Ph.D., Director

January 28, 2022

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

Dear Alicia Forsythe:

Please see below comments submitted by Office of Environmental Health Hazard Assessment's (OEHHA) Fish, Ecotoxicology, and Water Section on the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the Sites Reservoir project.

#### Scope of review

- OEHHA's review focused on potential freshwater (cyanobacterial) harmful algal blooms (HABs). OEHHA's Fish, Ecotoxicology, and Water Section staff contribute time and expertise to HABs statewide through the California Cyanobacterial and HAB (CCHAB) Network and the Interagency HAB-related Illness Workgroup as well as other regional and interstate technical efforts.

#### Comments:

##### *Chapter 2: Project Description and Alternatives*

- *Section 2.5.2.4. Operations and Management Plans*
  - o We recommend that Recreation and Reservoir Management Plans explicitly include the following:
    - Monitoring for both planktonic and benthic HABs including: (1) frequent visual assessments (such as weekly year-round) and (2) sampling for cyanobacteria and cyanotoxins (such as every two weeks during recreational season and monthly during winter) as well as any time year-round when visual indicators of HABs are present, with samples collected from shore at shoreline recreational sites and in open water areas likely used for boating or fishing.
    - Actions necessary to address potential HAB-related human and animal impacts such as through posting general awareness or potential advisory signage for HABs at recreational areas,

education on Healthy Water Habits, and the use of personal protective equipment (as needed) for Reservoir personnel.

#### Chapter 6: Surface Water Quality

- *Section 6.2.2.3. Nutrients, Organic Carbon, and Dissolved Oxygen*
  - o The text states, “*The initial filling of a new reservoir results in the release of nutrients from newly flooded soil and decomposing flooded vegetation. This release declines somewhat as the reservoir ages (Gunnison et al., 1984; Maavara et al., 2020:108).*”
    - This influx of nutrients into water that is being held in a reservoir, where increased light availability, reduced flow, and increased temperatures are likely, may overall enhance opportunities for HABs to occur.
- *Section 6.2.2.6. Harmful Algal Blooms*
  - o The description of environmental factors that influence HABs does not account for the wide variety of planktonic and benthic cyanobacteria that can occur in California waters. While many planktonic species do favor the temperature, light, and flow conditions noted, there are planktonic (such as *Planktothrix*) and benthic taxa (such as *Microcoleus*, *Phormidium*, and *Anabaena*) that occur in lower water temperatures, lower light, or higher flow than noted (see Section 3.3; ITRC 2021).
  - o The description of cyanobacteria focuses on characteristics related to planktonic cyanobacteria, particularly *Microcystis*. As noted above, numerous planktonic and benthic cyanobacteria may occur, including some that grow attached to benthic substrates, aquatic plants, and natural or artificial structures within the water column as well as some that are present in sub-surface layers with lake stratification. This variety should be addressed when considering potential HAB occurrence and necessary monitoring, management, and public health actions.
  - o We recommend noting that OEHHA has developed Notification Level Recommendations for Four Cyanotoxins in Drinking Water as well (<https://oehha.ca.gov/water/cmr/notice-availability-notification-level-recommendations-four-cyanotoxins-drinking-water>).
- *Section 6.3.2.2. Temporal Shift*
  - o The temporal shift between time of diversion and time of release could also contribute to release of water with a higher likelihood of HABs.
- *Section 6.3.2.8. Harmful Algal Blooms*
  - o It is unclear how the likelihood of HABs occurring within Sites Reservoir during operations is assessed based on the information presented in this section. Please provide more rationale for what the comparison of intake and water surface elevations is expected to show. As noted above,

- cyanobacteria and cyanotoxins can be found in deeper sub-surface waters depending on type, genus, water conditions, etc.
- See Section 9.1 Optimizing The Location And Depth For The Offtake (Chorus and Welker, 2021; Chapter 9) for context of vertical distribution and consideration of discharge depth. This variability is also shown with real-time profiling to a maximum of 75-90 meters in Detroit Lake, a drinking water source for Salem, Oregon ([https://or.water.usgs.gov/projs\\_dir/habs/lakeprofiler.html?site=444306122144600](https://or.water.usgs.gov/projs_dir/habs/lakeprofiler.html?site=444306122144600)). Department of Water Resources' Pacheco Pumping Plant monitoring data also provides a useful example of monitoring for HABs at depth for water intake management (<http://cdec4gov.water.ca.gov/dynamicapp/QueryF?s=PPP>).
  - *Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation*
    - The discussion about cyanotoxin degradation is primarily applicable for extracellular cyanotoxins, while most cyanotoxins (with the exception of cylindrospermopsin) are primarily intracellular while the cell is intact. As shown with the Klamath River, long-distance transport of cyanobacterial cells and intracellular cyanotoxin can occur following planktonic HABs in reservoirs (Otten et al., 2015). As far as the statement about dilution of discharges, these are living organisms that grow, reproduce, can act as source population, and for some taxa, change their buoyancy, not chemicals that can equally distribute within the water column.
    - As noted above, occurrence of HABs with elevated cyanotoxins (including Danger advisory levels) have occurred in California water bodies during winter (see, [https://mywaterquality.ca.gov/habs/where/freshwater\\_events.html](https://mywaterquality.ca.gov/habs/where/freshwater_events.html)) and cells/toxins may occur in deeper waters.
    - Native and invasive aquatic plants can compete with cyanobacteria for light and nutrients. Actions to address aquatic plants should consider potential to alter conditions for cyanobacterial blooms as well.
    - In addition to HAB advisory signage (when warranted), ongoing outreach efforts about potential HABs through general awareness signage and other communication media (e.g., social media, newsletters) would be helpful in increasing public awareness and potentially reducing HAB exposure.
    - As noted above, some cyanobacteria taxa bloom in sub-surface layers during water body stratification and can then move to the surface with water body turnover.
    - Cyanobacterial cells can senesce and die-off with associated drop in dissolved oxygen at times other than late fall. There can be a seasonal succession as different taxa become dominant (Nwosu et al., 2021).

- As noted above, some cyanobacteria taxa grow in water at cooler temperatures (including under ice) so, the 66°F minimum noted is not applicable across all water bodies and all cyanobacteria taxa.
- Potential transport of cyanobacterial cells or cyanotoxins in aerosols and human nasal exposure as shown in Florida (Schaefer et al., 2020) could extend potential HAB impacts beyond the reservoir.
- As noted above, response of cyanobacteria to water flow increases are specific to type (planktonic or benthic) and taxa of cyanobacteria. In addition, increased flow could flush cyanobacteria cells into downstream areas where potential impacts could occur.
- The HAB portal incident map only provides voluntarily reported HABs. Absence of reported HABs from Yolo Bypass to that map should not be interpreted as a lack of HAB occurrence. Direct contact with CDFW Wildlife Area or Yolo Basin Foundation staff about observations or monitoring for HABs would be potentially helpful in clarifying this.

*Chapter 27, Public Health and Environmental Hazards*

- *Sections 27.2.3.2 and 27.3.4, Harmful Algal Blooms*
  - As noted above, the environmental conditions identified for HABs do not address the variety of cyanobacterial types and taxa found in California water bodies that could occur in the future reservoir.
- *Impact HAZ-7: Result in an impact on public health due to an increase in harmful algal blooms*
  - Water depth, dilution, and toxin degradation may not be sufficient to prevent discharge of cyanobacteria and cyanotoxins given changes in buoyancy or presence of benthic cyanobacteria, the potential to act as a seed population, and the presence of more stable intracellular toxin (as well as other factors noted above).
  - We recommend that the recreational HAB monitoring plan include HAB monitoring year-round although the frequency could be reduced (such as changing from bi-weekly to monthly) for the winter period. Monitoring should consider the potential for benthic cyanobacteria, which may not be detected with surface water grab samples. Identification of cyanobacteria taxa present by microscopy can inform what toxins may be produced, and also help understand the overall dynamics in the system, such as cyanobacterial succession over time.
  - Real time monitoring for cyanobacteria at multiple depths from which water may be released has been successfully implemented at other West Coast reservoirs  
([https://or.water.usgs.gov/projs\\_dir/habs/lakeprofiler.html?site=444306122144600](https://or.water.usgs.gov/projs_dir/habs/lakeprofiler.html?site=444306122144600); <http://cdec4gov.water.ca.gov/dynamicapp/QueryF?s=PPP>). The assumption that the release of deeper water is sufficient to prevent

discharge of cyanobacteria and cyanotoxins is inconsistent with data from these other locations and published research on potential cyanobacterial occurrence at depth (see Section 9.1 Optimizing The Location And Depth For The Offtake in Chorus and Welker, 2021).

- Given our experience with HABs and HAB-related human and animal illnesses at other California reservoirs, it is unclear that the proposed monitoring and management actions are sufficient to prevent potential human or animal impacts from HABs. We recommend that potential HAB occurrence across a much broader range of environmental conditions and deeper water depths should be considered. A more robust monitoring and outreach program for HABs should be incorporated for any reservoir recreational use. Assessment of cyanobacteria and cyanotoxins at the appropriate water depths prior to discharge (or via ongoing real-time instrumentation data) would allow for more informed evaluation of potential downstream impacts.
- *Impact HAZ-8* mentions potential impacts to Reservoir personnel from mosquitos, but those staff are not identified in the evaluation of potential HAB impacts under HAZ-7. We recommend you consider potential occupational exposure to cyanobacteria/cyanotoxins for Reservoir personnel with direct water contact as well as those working nearby that could be exposed to HAB-related aerosols. HAB outreach and education, appropriate personal protective equipment (when needed), and advisory signage should be provided to Reservoir personnel, in addition to the recreating public.

#### References Cited:

- Chorus, I., & Welker, M. (Eds.). (2021). *Toxic Cyanobacteria in Water: A Guide to Their Public Health Consequences, Monitoring and Management* (2nd ed.). CRC Press. <https://doi.org/10.1201/9781003081449>
- ITRC (Interstate Technology & Regulatory Council). 2020. *Strategies for Preventing and Managing Harmful Cyanobacterial Blooms (HCB-1)*. Washington, D.C.: Interstate Technology & Regulatory Council, HCB Team. [www.itrcweb.org](http://www.itrcweb.org).
- Nwosu, E. C., et al. (2021). "Species-Level Spatio-Temporal Dynamics of Cyanobacteria in a Hard-Water Temperate Lake in the Southern Baltics." *Front Microbiol* **12**(3277). <https://doi.org/10.3389/fmicb.2021.761259>
- Otten, T. G., et al. (2015). "Application of molecular tools for microbial source tracking and public health risk assessment of a *Microcystis* bloom traversing 300km of the Klamath River." *Harmful Algae* **46**: 71-81. <https://doi.org/10.1016/j.hal.2015.05.007>



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Schaefer, A. M., et al. (2020). "Exposure to microcystin among coastal residents during a cyanobacteria bloom in Florida." Harmful Algae **92**: 101769.  
<https://doi.org/10.1016/j.hal.2020.101769>

Sincerely,

*Beckye Stanton*

Beckye Stanton  
Staff Toxicologist

cc: Marisa Van Dyke and Carly Nilson  
FHAB Program co-leads  
State Water Resources Control Board

Jenna Rinde  
HAB coordinator  
California Department of Fish and Wildlife

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**From:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Sent:** 1/28/2022 4:07:41 PM  
**To:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Subject:** Re: Sites Project EIS/EIR comments

Go ahead and reach out to them. Thanks!

---

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 | aforsythe@sitesproject.org | www.SitesProject.org

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**From:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Sent:** Friday, January 28, 2022 3:45:55 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** FW: Sites Project EIS/EIR comments

Hi Ali,

Can Linda or I do this or would you prefer to reach out to staff at Office of Environmental Health Hazard Assessment to get a non-encrypted version of their comments (see below).

Thanks,

Laurie

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**From:** Davis, Susan <susan.davis@icf.com>  
**Sent:** Friday, January 28, 2022 8:42 AM  
**To:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>  
**Cc:** Williams, Nicole <Nicole.Williams@icf.com>  
**Subject:** FW: Sites Project EIS/EIR comments

Laurie and Linda,

Could one of you reach out to the respondent and ask for a copy of their comments that is not password protected. We need to combine their comment letter with a PDF of their email and cannot do so with the password protected file.

Thank you!

Susan



Susan Davis | Manager, Environmental Planner | +1.916.737.3000 main | [Susan.Davis@icf.com](mailto:Susan.Davis@icf.com) | [icf.com](http://icf.com)  
ICF | 980 9<sup>th</sup> Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.752.0929 mobile

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**From:** Stanton, Rebecca@OEHHA <[Rebecca.Stanton@oehha.ca.gov](mailto:Rebecca.Stanton@oehha.ca.gov)>  
**Sent:** Friday, January 28, 2022 8:12 AM  
**To:** [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

**Cc:** Klasing, Susan@OEHHA <[Susan.Klasing@oehha.ca.gov](mailto:Susan.Klasing@oehha.ca.gov)>; Murphy, Shannon@OEHHA <[Shannon.Murphy@oehha.ca.gov](mailto:Shannon.Murphy@oehha.ca.gov)>; VanDyke, Marisa@Waterboards <[Marisa.VanDyke@waterboards.ca.gov](mailto:Marisa.VanDyke@waterboards.ca.gov)>; Nilson, Carly@Waterboards <[carly.nilson@waterboards.ca.gov](mailto:carly.nilson@waterboards.ca.gov)>; Rinde, Jenna@Wildlife <[Jenna.Rinde@Wildlife.ca.gov](mailto:Jenna.Rinde@Wildlife.ca.gov)>  
**Subject:** Sites Project EIS/EIR comments

Please see attached comments on the Sites Project EIS/EIR.

Thanks

Beckye

Beckye Stanton, Ph.D. [*she/her*]  
Staff Toxicologist  
Fish, Ecotoxicology, and Water Section  
Office of Environmental Health Hazard Assessment  
Phone # 279-895-5927  
[Rebecca.stanton@oehha.ca.gov](mailto:Rebecca.stanton@oehha.ca.gov)

<https://oehha.ca.gov/risk-assessment/harmful-algal-blooms-habs>

*Please note: OEHHA is subject to the California Public Records Act. E-mail communications with OEHHA staff are not confidential and may be produced to members of the public upon request.*

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**From:** Ronda Lucas [ralucaslaw@outlook.com]  
**Sent:** 1/28/2022 4:24:38 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** summershadley@maxwell.k12.ca.us; Ronda Lucas [ralucaslaw@outlook.com]  
**Subject:** Comments on Sites Reservoir Project RDEIR/SDEIS, State Clearinghouse No. 2001112009  
**Attachments:** 2022-01-28 MUSD Sites Comments.pdf

Sites Project Authority and U.S. Bureau of Reclamation:

Please consider the attached comments in the above referenced matter submitted on behalf of the Maxwell Unified School District. If there is an error in transmission, or you wish to discuss these comments, please do not hesitate to contact me using the contact information below.

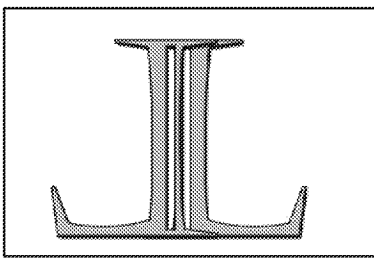
Thank You,

**RONDA AZEVEDO LUCAS, Esq.**

Lucas Law  
P.O. Box 696  
Hilmar, CA 95324

T: (916) 468-8208  
[ralucaslaw@outlook.com](mailto:ralucaslaw@outlook.com)

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January 28, 2022

**Via Electronic Mail Only:**

[EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

L  
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Mr. Jerry Brown  
Executive Director  
Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

U.S. Bureau of Reclamation  
2800 Cottage Way, W-2830  
Sacramento, CA 95825

**RE: Response of Maxwell Unified School District to the Sites Reservoir Project Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement, State Clearinghouse Number 201112009**

Dear Mr. Brown and U.S. Bureau of Reclamation:

I am Ronda Azevedo Lucas, an attorney recently retained by the Maxwell Unified School District (“MUSD”) to represent them in the deliberations regarding the construction of Sites Reservoir Project (“Project”). On behalf of MUSD, I appreciate the opportunity to provide these comments on the Project’s Revised Draft Environmental Impact Report/Supplemental Environmental Impact Statement, State Clearinghouse No. 2001112009 (“RDEIR/SDEIS”) As you are well aware, MUSD has been very involved in this process, and has consistently stated its concern that the Project will result in significant environmental impacts to the community of Maxwell and its surrounding areas due to the Project’s unanalyzed and therefore unmitigated impacts to traffic, school bus routes, safe passage issues, and potential emergency response needs, including fire, sheriff and first responder personnel for the MUSD schools staff, students and residents within the community of Maxwell as required under the California Environmental Quality Act (“CEQA”). (Cal. Pub. Res. Code §§ 21000, *et seq.*; Cal. Code Regs., tit. 14, § 1520.) MUSD supports this Project provided the Project properly analyzes and mitigates its impacts on the community. However, the Project is unlike any entity that has ever come into the community, or arguably the entire county of Colusa, and presents some unique challenges MUSD has never before had to face. To be clear, MUSD is hoping to unequivocally support this Project but, at this date, cannot due to the lack of inadequate range of alternatives, proper analysis, and mitigation.

P.O. BOX 696 • HILMAR, CA 95324 • T: 916.468.8208 •  
RALUCASLAW@OUTLOOK.COM

## I. Background

MUSD consists of three schools, Maxwell Elementary School, Maxwell Middle School and Maxwell Senior High School providing public education to children located throughout Maxwell and its surrounding communities including Sites, Lodoga, Leesville, Stonyford and other communities within the Project site. MUSD's total student population is approximately 340 students<sup>1</sup> and the vast majority are bused to MUSD schools on all of the roads that will be impacted by this Project, including but not limited to Oak Street, North Street, McDermott Road, Delevan Road, Maxwell-Sites Road and Sites-Lodoga Road. MUSD is nestled in the community of Maxwell, whose current population is stable at approximately 1,076 residents.<sup>2</sup> Within the entire community, the sole stoplight is a four-way stop that blinks red only in all directions, at the intersection of Oak Street and Old Highway 99. The main artery within Maxwell is Oak Street which begins at the Interstate 5 ("I-5") off-ramp and runs west through Maxwell all of the way to the Project site. Oak Street, as acknowledged in the RSEIR/SDEIS at 18-7, becomes Maxwell-Sites Road just west of Maxwell Senior High School and the community of Maxwell. Maxwell-Sites Road then turns into Sites Lodoga Road as you continue west through the Project Site. "Sites Lodoga Road is an east-west, two-lane major collector road that extends through the community of Maxwell, which is adjacent to 1-5, and provides **an important emergency and evacuation route in a limited roadway network** to and from the rural communities of Lodoga and Stonyford."<sup>3</sup>

Given the physical environmental setting and the fact that this Project anticipates more workers (1,650 during peak construction) than Maxwell's entire existing population and contemplates major changes to roadways that will directly impact "an important emergency and evacuation route in a limited roadway network" that runs right by Maxwell Senior High School, Maxwell Fire Department and through the heart of Maxwell, it is improper that the RDEIR/SDEIS failed to undertake a true traffic study and identify appropriate mitigation and failed to consider an adequate range of alternatives for impacts to MUSD, all public services and the entire community.

The RDEIR/SDEIS does not comply with the California Environmental Quality Act ("CEQA") and its implementing regulations (Pub. Res. Code §§ 21000, *et seq.*; Cal. Code Regs. tit. 14 §§ 15000, *et seq.*, "CEQA Guidelines"). The RDEIR/SDEIS does not include sufficient information to evaluate potential environmental impacts both to schools and related to schools. Through this letter, MUSD wishes to emphasize this Project has the potential to have a profound negative effect on MUSD's staff, students, and their families and residents who reside in and near the Project site. Therefore, MUSD requests the Sites Project Authority and U.S. Bureau of Reclamation revise the RDEIR/SDEIS to address the serious deficiencies identified in this letter, undertake a proper traffic study and develop appropriate mitigation measures for impacts that are identified as significant, and present, consider and analyze a reasonable range of alternatives and then recirculate the RDEIR/SDEIS as required by CEQA. (CEQA Guidelines § 15088.5).

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<sup>1</sup> <https://www.cde.ca.gov/sd/profile/details.aspx?cds=06616060000000>. Accessed: January 28, 2022

<sup>2</sup> <https://www.worldpopulationreview.com/us-cities/maxwell-ca-population>. Accessed: January 28, 2022

<sup>3</sup> RDEIR/SDEIS at 2-59.

## II. SPECIFIC COMMENTS

**A. The RDEIR/SDEIS does not meet its purpose as an informational document because it fails to provide an adequate description of the environmental setting related to schools.**

One of CEQA's basic purposes is to inform government decision-makers and the public about the potential significant environmental effects of proposed projects and to disclose to the public the reasons for approval of a project that may have significant environmental effects. (CEQA Guidelines § 15002(a)(1) and (a)(4).) In line with this goal, the preparer of an EIR must make a genuine effort to obtain and disseminate information necessary to the understanding of impacts of project implementation. (*See*, CEQA Guidelines § 15151; *Sierra Club v. State Board of Forestry* (1994) 7 Cal.4<sup>th</sup> 1215, 1236). An EIR must describe the existing environmental conditions in the vicinity of the proposed project from both a local and regional perspective, which is referred to as the "environmental setting." (CEQA Guidelines § 15125.) This description of the environmental conditions serves as the "baseline" for measuring the qualitative and quantitative changes to the environment that will result from the project and for determining whether those environmental effects are significant. "In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the *existing* physical conditions in the affected area as they *exist at the time* the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect insignificant effects of the project on the environment *shall be clearly identified and described*, giving due consideration to both the short-term and long-term effects." (CEQA Guidelines § 15126.2(a), (italics added).)

MUSD's schools and reliance on the "limited roadway network" that exists within and around Maxwell, including the high school's physical location at Oak Street are all a critical part of the Project's environment and should be considered throughout the RDEIR/SDEIS impact categories. Rather than clearly identifying the limited roadway network as it exists, the RDEIR/SDEIS improperly and summarily asserts construction traffic will be prohibited in the community of Maxwell due to the future development of a traffic management plan and the future improvements of existing roads improving them to a point they can handle "Project-generated construction traffic" and allegedly bypass utilizing Oak Street. Based on this conclusory assertion relying upon a non-existent traffic management plan and planned future road improvements, the RDEIR/SDEIS avoids any meaningful traffic study and fails to examine "changes in the *existing* physical conditions in the affected areas as they *exist at the time*" as required by CEQA. The Supreme Court stated: "By comparing the proposed project to what *could* happen, rather than to what was actually happening, the District set the baseline not according to 'established levels of a particular use,' but by 'merely hypothetical conditions allowable' under the permits. (*San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4<sup>th</sup> 645, 658.) The Supreme Court has further explained "[a]n approach using hypothetical allowable conditions as the baseline results in 'illusory' comparisons that 'can only mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts,' a result at direct odds with CEQA's intent. (*Environmental Planning & Information Council v. County of El Dorado* (1982) 183 Cal.App.3d 229, 358.) "A long line of

Court of Appeal decisions holds, in similar terms, that the impacts of a proposed project are ordinarily to be compared to the **actual environmental conditions existing at the time of CEQA analysis, rather than to allowable conditions defined by a plan or regulatory framework**. This line of authority includes cases where a plan or regulation allowed for greater development or more intense activity than had so far actually occurred, as well as cases where actual development or activity had, by the CEQA analysis was begun, already exceeded that allowed under the existing regulations. In each of these decisions, the appellate court concluded the baseline for CEQA analysis must be the ‘existing physical conditions in the affected area’, that is the ‘real conditions on the ground.’” (*Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council* (2010) 190 Cal.App.4<sup>th</sup> 1351, 1374 quoting *Environmental Planning & Information Council v. County of El Dorado, supra*, 131 Cal.App.3d at 354; *Save our Peninsula Committee v. Monterey County Bd. of Supervisor* (2001) 87 Cal.App.4<sup>th</sup> 99, 121.) The RDEIR/SDEIS as written violates CEQA and case law. The document needs to undertake a proper traffic analysis based on the existing conditions including existing roadways and traffic circulation patterns in order to ensure the RDEIR/SDEIS does not continue to “mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts on the actual environmental impacts” of the Project to MUSD, other emergency and first responder personnel, our students, staff and residents of Maxwell and its surrounding communities.

**B. The RDEIR/SDEIS does not meet its purposes as an information document because it fails to identify and analyze all impacts on school facilities under CEQA’s threshold of significance for Public Services impacts.**

In order to support a determination that environmental impacts are insignificant and can therefore be scoped out of a RDEIR/SDEIS, the lead agency must include in either the Initial Study or the RDEIR/SDEIS the reasons the applicable environmental effects were determined to be insignificant. (Pub. Res. Code § 21100 (c); CEQA Guidelines § 15128.) An unsubstantiated conclusion that an impact is not significant without supporting information or explanatory analysis, is insufficient; the reasoning supporting the determination of insignificance must be disclosed. (*See City of Maywood v. Los Angeles Unified Sch. Dist.* (2012) 208 Cal.App.4<sup>th</sup> 362, 393; *San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4<sup>th</sup> 713; (finding that project will not pose biological impacts to wetlands must be supported by facts and evidence showing the lead agency investigated the presence and extent of wetlands on the property, which analysis must be disclosed to the public).)

The approach utilized in the RDEIR/SDEIS, as noted above, relied upon hypothetical future conditions that may or may not occur with respect to traffic and its associated impacts with conclusory statements that ignored and dismissed the Project’s impacts to schools, particularly as it pertains to bus routes. The RDEIR/SDEIS fail to analyze all potential impacts to MUSD’s students and staff including (1) whether other impacts of the proposed Project, such as increased traffic, noise, or air pollutants surrounding MUSD facilities could impact the District’s need for new or physically altered school facilities; (2) whether other impacts of the proposed Project could otherwise interfere with MUSD’s ability to accomplish its own performance objectives; (3) whether the Project’s impacts could interfere with emergency



response including but not limited to fire, sheriff and/or first responder personnel to MUSD facilities or anywhere within the Fire District's service area to levels below accepted standards; (4) whether busing routes will required to be altered even under the alleged, to be create Traffic Management Plan as the roads identified, specifically, Delevan, McDermott, Maxwell Sites and Lodoga Sites Road are all utilized and integral to busing routes; and (5) whether safe passage exists to schools and to and from bus stops along the bussing routes; and (6) whether existing bus stops along bussing routes will be negatively impacted by the Project's increased traffic and congestion created within the community of Maxwell and surrounding areas. Moreover, while the RDEIR/SDEIS correctly states busing routes are set by MUSD's superintendent, it completely ignores the other legal mandates applicable to busing routes for, example, students who are foster children, homeless, disabled, or have an individual education program.<sup>4</sup> The RDEIR/SDEIS reliance only upon policy without considering underlying applicable law or conducting a proper traffic study, renders the RDEIR/SDEIS inadequate under CEQA as an information document.

Finally, the RDEIR/SDEIS fails to adequately analyze cumulative public services impacts on MUSD due to the sheer volume of road trips that will be created by an estimated work force that is larger than the actual population of Maxwell and is anticipated "[a]t the peak of construction, ... current estimates are that 1,552 to 1,657 construction personnel would be working on the Project ... [and] would likely commute to construction sites."<sup>5</sup> "At the peak of construction ..., current estimates project between 701 and 978 daily haul trips for conveyance facilities and approximately 1,760 daily offsite haul trips for reservoir facilities."<sup>6</sup> RDEIR/SDEIS to be commuting to work due to the lack of available housing within Maxwell. Further "[i]t is estimated that approximately 187,000 recreational visitors per year would visit the Sites Reservoir and its recreation area for all or part of a day" with it "anticipated that 70% of recreational use would be during the primary recreation season (i.e. May 1 through September 20)."<sup>7</sup> The majority of these trips will arrive via 1-5, driving through Oak Street right past both the fire station and the high school on a two lane road that ultimately turns into Maxwell Sites Road just west of the high school.<sup>8</sup> None of this information was consider for its impacts on any public services, even though the primary recreation season occurs, in part, during the school year and is assumed to take thousands of individuals on a two-lane road past the high school. The traffic alone will reduce response times for all fire, sheriff, and first responder personnel. Moreover, it will increase potential demand for fire, sheriff and first responder calls to service this massive influx of people which may further diminish response times and availability to MUSD facilities and the citizens of Maxwell and its surrounding communities. The traffic will also increase risk to staff, students and their families as they arrive at MUSD schools, will increase travel times, and will increase bussing times thereby increasing staff costs, wear and tear on busses, and most importantly impacting the students who are forced to spend even more time

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<sup>4</sup> Such considerations include but are not limited to the Department of Transportation's Safe Routes to School Programs and the California Department of Education Special Education Transportation Guidelines; Cal. Ed. Code § 41850(b); *Id.* at § 41851.2; *Id.* at § 56040; *Id.* at § 56195.8(b).

<sup>5</sup> RDEIR/SDEIS at 18-20.

<sup>6</sup> *Id.* at 18-20.

<sup>7</sup> RDEIR/SDEIS at 18-21.

<sup>8</sup> *Id.* at 18-22.

on buses in order to get to and from school. In addition, the lack of a traffic analysis has prevented any consideration of impacts to the safety of the existing bus stops, safe passage to and from bus stops and any needed changes to those bus stops. Failing to address any of these issues renders the current RDEIR/SDEIS insufficient. Conclusory comments in support of environmental conclusions are generally inappropriate. (*People v. County of Kern* (1974) 39 Cal. App.3d 830, 840-842. The RDEIR/SDEIS's statutory goal of public information regarding the proposed Project has not been met. The document provides no information to the public to enact it to understand, evaluate and respond to its bare assertions. (*Laurel Heights Improv. Assoc. of San Francisco v. Regents of Univ. of Calif.* (1988) 47 Cal.3d 376, 404.)

**C. The RDEIR/SDEIS analysis of traffic/transportation/circulation is inadequate, particularly as it relates to schools.**

The RDEIR/SDEIS is required to address potential effects related to traffic, including noise, air quality, and other issues affecting schools. (Pub. Resources Code §§ 21000, *et seq.*; Cal. Code Regs., tit. 14 §§ 15000, *et seq.*; *Chawanakee Unified Sch. Dist. v. County of Madera* (2011) 196 Cal.App.4<sup>th</sup> 1016.) The RDEIR/SDEIS treatment of traffic, particularly as it relates to MUSD schools is inadequate. As explained above, the RDEIR/SDEIS inappropriately relies upon a yet to be created traffic management plan and blanket assertion that Project traffic will not be allowed to travel through Maxwell. These assertions and conclusions are unsupported and, had a proper traffic study been completed as required by CEQA, the RDEIR/SDEIS would have analyzed safety issues related to traffic impacts such as reduced pedestrian safety, particularly as to students walking or bicycling to or from MUSD schools, potentially reduced response times for fire, sheriff and first responder personnel traveling to these schools; increased bussing times due to increased road usage; and increased potential for accidents due to the increased traffic.

The requirement to analyze student safety issues is rooted in both the California Constitution and CEQA. Article 1, section 28 (c) of the California Constitution states that all students and staff of primary, elementary, junior high and senior high schools have the inalienable right to attend campuses that are "safe, secure and peaceful." CEQA is rooted in the premise that "the maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern." (Pub. Res. Code § 21000(a).) Naturally, safety is crucial in the maintenance of a quality environment. "The capacity of the environment is limited, and it is the intent of the Legislature that the government of the state take immediate steps to identify any critical thresholds for health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds being reached." (Pub. Resources Code § 21000 (d).) The Legislature has made clear in declarations accompanying CEQA's enactment that public health and safety are of great importance in the statutory scheme. (Pub. Res. Code §§ 21000 (b), (c), (d), (g); 21001 (b), (d) (emphasizing the need to provide for the public's welfare, health, safety, enjoyment and living environment.) (*California Building Industry Assn. v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4<sup>th</sup> 369, 386). In order to fully understand these issues, MUSD requires the RDEIR/SDEIS to undertake a proper traffic study rather than rely on a hypothetical future condition of the existing environment. Further, alternatives must be

presented that take into consideration and mitigate for the traffic impacts including but not limited to:

- 1) The existing and anticipated vehicular traffic and student pedestrian movement patterns to and from school sites, and including consideration of bus routes.
- 2) The impact(s) on increased vehicular movement and volumes based on existing, actual conditions caused by the Project, including but not limited to potential conflicts with school pedestrian movement, school transportation, and busing activities to and from MUSD facilities;
- 3) The estimated travel demand and trip generation, trip distribution and trip assignment by including consideration of school sites, the limited, existing roadway network, and home-to-school travel;
- 4) The cumulative impacts on schools and the community in general resulting from increased vehicular movement and volumes expected upon Project completion;
- 5) The direct, indirect and cumulative impacts on circulation and traffic patterns in the community as a result of traffic generated by the transportation needs of students to and from the Project site and MUSD schools during the Project construction and build-out,
- 6) The impacts on routes and safety of students traveling to school by vehicle, bus, walking and bicycles;
- 7) The impacts on emergency responder response times to MUSD schools, including the increased risks posed by increased traffic within the entire community;
- 8) The impacts of the proposed utilization of Delevan, McDermott, Maxwell Sites, and Sites Lodoga Roads, particularly during harvest times and the peak recreational season on bussing routes, traffic patterns in the community, the transportation needs of students to and from MUSD schools, the increased response times of all emergency service providers and first responders and increased demand anticipated for emergency service providers and first responders.

The RDEIR/SDEIS failed to analyze **any** of the above categories of information. There is, therefore, no way for the lead agencies or the public to assess whether the Project will pose a traffic impact related to MUSD's provision of public services or any other agency's provision of public services (i.e., Maxwell Fire Protection District and Colusa County Sheriff). Moreover, this failure to properly analyze the above categories of information resulted in an improperly narrow alternatives analysis and mitigation. As noted in *Laurel Heights*, "[t]he key issue is whether the selection and discussion of alternatives fosters informed decision making and informed public participation." (*Laurel Heights Improv. Assoc. of San Francisco v. Regents of Univ. of Calif.* (1988) 47 Cal.3d 376, 404, quoting CEQA Guidelines §15126 (d) (5).)

To be clear, MUSD anticipates that the construction and operation of the proposed Project will have significant impacts on traffic, transportation, circulation and student safety that must be thoroughly analyzed and discussed in the RDEIR/SDEIS to ensure adequate mitigation is adopted. As previously stated, Maxwell is a very rural community with a limited roadway network, limited emergency services and a population less than the estimated workers required for the Project. This Project will double the population of Maxwell and turn it into a commuter work place. Obviously, there will be traffic impacts and these were not analyzed as required by CEQA. The traffic generated by the Project will severely exacerbate the existing inadequacies in Maxwell's roadways and increase risk to pedestrian and bicycle traffic and the safety issues posed thereby. These impacts will severely inhibit MUSD's ability to operate its educational programs and provide a safe, secure learning environment for its students and staff including safe passage to schools. However, none of these issues were properly analyzed in the RDEIR/SDEIS.

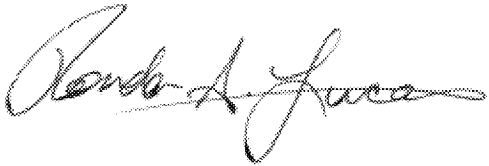
### III. CONCLUSION

Recirculation is required when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project's proponents decline to adopt; or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless. (CEQA Guidelines § 15126, *et seq.*; *Mountain Lion Coalition v. Fish & Game Comm.* (1989) 214 Cal.App.3d 1043; *Laurel Heights Improv. Assn. v. Regents of Univ. of Calif.* (1988) 47 Cal.3d 376). In this case, the RDEIR/SDEIS is incomplete and does not adequately analyze the Project's potential impacts related to schools, alternatives that would address these impacts and mitigation measures that would lessen these impacts. The safety of our students, staff and entire community is paramount to MUSD, and our safety concerns are not adequately addressed in the RDEIR/SDEIS as currently constituted. Changes must be made to preserve the safety of these students, their families, our staff and the entire community of Maxwell and its surrounding areas and allow our students and staff to enjoy productive time at school. MUSD demands that the RDEIR/SDEIS be updated to include a proper traffic study, proper alternatives analysis with an adequate range of alternatives with respect to traffic impacts and legally sufficient mitigation measures for traffic impacts and impacts to public services including MUSD for the entire community.

MUSD looks forward to this Project being developed provided the Project is appropriately mitigated, as required by CEQA. Failure to mitigate this project not only violates CEQA but also places an unfair burden on this very small, rural community. MUSD welcomes the Project but is not willing to diminish the level of services it currently provides to its students and staff, including the diminished emergency services that will result because of the Project's increased traffic and increase demand on these emergency services resulting in reduced response times or no response at all due to lack of personnel. MUSD cannot potentially jeopardize the lives of the District's constituents, the Project employees or the volunteer firefighters, Colusa County Sheriff personnel and/or any other first responder personnel.

Moreover, the Project will flood, literally, eight houses that current provide assessments of more than \$10,000 per house. This is a significant reduction in needed funding that must be mitigated. Additionally, the reduction in attendance, no matter how temporary, will likewise result in a reduction of funding that must be mitigated. To approve this Project without resolution of these issues will not only violate CEQA, it will compromise public health and safety within MUSD, diminish educational opportunities and potentially jeopardize lives.

Thank You,

A handwritten signature in black ink, appearing to read "Ronda Azevedo Lucas". The signature is fluid and cursive, with a long horizontal stroke at the end.

Ronda Azevedo Lucas  
Attorney at Law

cc: Summer Shadley, MUSD Superintendent

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**From:** Wendy Chriss [wchriss@ccwater.com]  
**Sent:** 1/28/2022 4:35:41 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**CC:** Lucinda Shih [lshih@ccwater.com]; Ching-Fu Chang [CChang@ccwater.com]  
**Subject:** FW: Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement for the Sites Reservoir Project  
**Attachments:** CCWD comments on Sites Jan 2022.pdf

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**From:** Wendy Chriss  
**Sent:** Friday, January 28, 2022 4:10 PM  
**To:** EIR-EIS-Comments@SitesProject.org  
**Cc:** Marguerite Patil <mpatil@ccwater.com>; Lucinda Shih <lshih@ccwater.com>; Ching-Fu Chang <CChang@ccwater.com>; Maureen Martin <mmartin@ccwater.com>; Deanna Sereno <dsereno@ccwater.com>  
**Subject:** Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement for the Sites Reservoir Project

Please see attached comments from Contra Costa Water District. Please contact Lucinda Shih at (925) 688-8168 or [lshih@ccwater.com](mailto:lshih@ccwater.com) for further discussions.

**Wendy Chriss**  
Administrative Secretary

**CONTRA COSTA WATER DISTRICT**  
1331 Concord Avenue, Concord, CA 94520  
(925) 688-8022

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January 28, 2022

Alicia Forsythe  
Sites Project Authority  
122 West Old Highway 99  
Maxwell, CA 95955

Vanessa King  
Bureau of Reclamation  
2800 Cottage Way, Room W-2830  
Sacramento, CA 95825

Submitted via email to: [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

**Subject: Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement of the Sites Reservoir Project**

Dear Ms. Forsythe and Ms. King:

Contra Costa Water District (CCWD) appreciates the opportunity to review and provide comments on the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the Sites Reservoir Project (Project). CCWD solely relies on the Delta to provide water diverted at its four intakes to approximately 550,000 people in Contra Costa County. Changes in water quality and water supply at CCWD intakes, even in the absence of violation of regulatory objectives, can impact CCWD's water supplies to its customers. CCWD would like to provide comments as follows regarding the evaluation of potential impacts to CCWD water supplies.

1. As described in the RDEIR/SDEIS, the diversions for the Project would be diverted under the basis of a new water right that would be, by definition, junior to all existing water rights such as the Central Valley Project (CVP) and State Water Project (SWP) water rights, and CCWD's Los Vaqueros and Mallard Slough water rights. This new water right should include limitations that are at least as constraining as the constraints presented in the RDEIR/SDEIS, including, but not limited to, the Delta excess buffer (i.e., not diverting the first 3,000 cfs beyond the required Delta outflow) and the diversion criteria listed in Chapter 2 of the RDEIR/SDEIS.
2. The conveyance of water delivered from the Project through CCWD facilities is mentioned as a possibility in Chapter 2 of the RDEIR/SDEIS, but the potential associated impacts were not analyzed in the RDEIR/SDEIS. Since CCWD and the Project team have not discussed this possible operation in any detail to date, we recommend additional coordination with CCWD to determine if there are potential

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Stephen J. Welch, P.E., S.E.

opportunities for coordinated operations in the future. If both parties decide to move forward with pursuing coordinated operations, more detailed impact analysis may need to be performed to fulfill the requirements of CEQA/NEPA and additional coordination with the CVP, SWP, and other key stakeholders would likely be beneficial.

3. In the RDEIR/SDEIS, conveyance of water supply to south-of-Delta Project partners is envisioned to be realized by increased exports at the Jones Pumping Plant and/or the Banks Pumping Plant, which entails through-Delta conveyance operations and thus has the potential to impact CCWD. The RDEIR/SDEIS does not include specific criteria for Sites Reservoir release and through-Delta conveyance to the same level of detail as the diversion criteria described in Chapter 2. As a result, detailed information needed to assess the potential impacts to CCWD remains unavailable; such information includes but is not limited to details about carriage water assumptions, diversion priority at Jones and Banks Pumping Plants, and potential changes in the timing and frequency of controlling Delta regulations. CCWD looks forward to coordinating with you to ensure that potential impacts of Project operations are avoided or mitigated.
4. The RDEIR/SDEIS does not fully account for the potential impacts on CCWD operations. CCWD's operations are driven by a number of factors including water quality. The DSM2 modeling results show occasions of increased salinity near CCWD's Intakes that coincide with CCWD's likely timing for use of the intakes, which has the potential to impact CCWD operations. However, in the CalSim modeling of CCWD operations the Delta salinity levels are the same for both the with and with Project scenarios, and thus does not capture CCWD's operational response to changes in Delta water quality caused by the Project. CCWD looks forward to discussing with you how to avoid or mitigate the potential Project impacts of increased salinity on CCWD.

As a project proponent and participant in the California Water Commission's Water Storage Investment Program, CCWD supports the objectives of the Water Storage Investment Program and recognizes the statewide importance of water storage projects that provide significant public benefits. In the spirit of collaboration, CCWD looks forward to the review of the final EIR/EIS for the Project and coordinating with you to achieve our mutual goals. Please do not hesitate to contact me at (925) 688-8168 or [lshih@ccwater.com](mailto:lshih@ccwater.com) for further discussions.

Sincerely,



Lucinda Shih

Water Resources Manager

CFC:wec



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**From:** Bruce Campbell [madroneweb@aol.com]  
**Sent:** 1/28/2022 4:59:13 PM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** Comments on Sites Dam RDEIR and SDEIS

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

To whom it may concern at the Sites Project Authority, Bureau of Reclamation, and beyond:

Please accept these comments on the Recirculated Draft EIR / Supplemental Draft EIS regarding the Sites reservoir proposal.

I thought one of the basics was that there should not be “piece-mealing” under CEQA – and act like merely local analysis on many issues is sufficient.

The first paragraph under Cumulative Impacts says after mentioning that both CEQA and NEPA require assessment of cumulative impacts, “The State CEQA Guidelines go on to state that the types of projects that should be considered in a cumulative impact analysis are ‘closely related past, present, or reasonably foreseeable probably future projects’ (State CEQA Guidelines, Section 15355; see also Section 15130, subd. (b)(1)(A)).” Yet, for instance, the document states clearly that **ONLY THE SACRAMENTO VALLEY IS CONSIDERED IN THE CLIMATE CHANGE ANALYSIS.**

Not even the foothills, hills, and mtns surrounding the Sacramento Valley on three sides??? Timber management policies in the Sacramento River WATERSHED, as well as Klamath, Trinity, Eel, and other watersheds can impact not only regional but even global climate. Also, I am disappointed, and it is another great reason to stop the project, that it is admitted that construction will release more GHGs for 10 years, and then there will be GHG emissions especially in first ten years of operation.

Also, seeing that water allotments far exceed reality, and you have optimistic forecasts, a new EI document must assess GHG emissions of a partially filled Sites dam which could impact the immediate area more – but not some areas from which it wishes to steal water to privatize.

I note that the bullet point on the top of page 31-2 says, “whether a project would result in impacts on the same environmental resources that would be affected by the implementation of Alternatives 1, 2, and 3 (collectively referred to as the Project); projects that would not affect the same resources were considered outside the scope of the cumulative impact analysis. For example, the Project would not change the environment within Solano County; therefore, this cumulative impact analysis did not consider changes that would occur under the Solano County Multi-Species Habitat Conservation Plan (HCP).” I disagree. Even if there is no direct infrastructure related to the Sites project within Solano County, there is so much water shuffling proposed (much of which does not seem destined to flow down the Sacramento River into Suisun Bay and to San Pablo & San Francisco Bays) that there indeed may be an impact on riparian area and other species due to lower flows of the Sacramento River due to increased water diversions despite general drought conditions.

I am concerned that there was no serious analysis of the impact on Sites Dam on other water facilities in the general region (and their drainages). I believe that if those watersheds are not analyzed in this document, THEN THOSE WATER FACILITIES AND REGIONS MUST BE OFF-LIMITS FOR SITES RESERVOIR TO OBTAIN WATER FROM !

It especially appalling that in the area with the highest concentration of indigenous people living on or near the land in California (in the lower Trinity River area) do not even get an analysis of whether the various Records of Decisions will impact the species on which their culture, nutrition, forest, and spirituality is based. The Hupa, Karuk, and Yurok deserve better. The Trinity – Klamath system salmon rely on cold (sometimes stored for awhile) Trinity water – you should analyze impact on Yurok in lower Klamath – as well of course of the Hupa, Karuk, and other indigenous peoples along the Trinity.

This document gets a ZERO in terms of CLIMATE CHANGE and ENVIRONMENTAL JUSTICE analyses. Have some respect for the First peoples, please!

The lower part of page 31-3 tells of the 82-year hydrologic model they somehow believe relates to the project. Yet, there were massive storms in 1862-1863, a massive drought in 2021 and atmospheric rivers in December 2021 which should be accounted for in such analyses. Thus the dates for analysis should be from 1860 through 2021 or 2022 – while considering various scientists' conclusions over the past two or three years of the American West likely being 20 years into perhaps a general 1000-year drought.

Withdraw this document, and thoroughly analyze the whole plumbing system with new climate analyses.

Sincerely yours,

Bruce Campbell  
10008 National Bl. # 163  
Los Angeles, CA 90034

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/28/2022 7:07:30 PM  
**To:** Jerry Brown [jbrown@sitesproject.org]  
**Subject:** FW: Comments on Sites RDEIR/SDEIS  
**Attachments:** NRDC et al Comments on Sites RDEIR-SDEIS\_1.28.22.pdf; Exh. 1 to NRDC et al Comments on Sites RDEIR-SDEIS.pdf; Exh. 2 to NRDC et al Comments on Sites RDEIR-SDEIS.pdf; Exh. 3 to NRDC et al Comments on Sites RDEIR-SDEIS.pdf

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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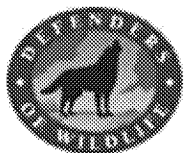
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**From:** Rachel Zwillinger <RZWILLINGER@defenders.org>  
**Sent:** Friday, January 28, 2022 8:21 AM  
**To:** EIR-EIS-Comments <eir-eis-comments@sitesproject.org>  
**Cc:** Alicia Forsythe <aforsythe@sitesproject.org>; vking@usbr.gov  
**Subject:** Comments on Sites RDEIR/SDEIS

Good morning. Attached, please find comments on the November 2021 Sites Reservoir Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement and three exhibits. The comments are submitted on behalf of the Natural Resources Defense Council, Defenders of Wildlife, San Francisco Baykeeper, The Bay Institute, Planning and Conservation League, Restore the Delta, Northern California Council of Fly Fishers International, California Sportfishing Protection Alliance, Friends of the River, Golden West Women Flyfishers, Institute for Fisheries Resources, Pacific Coast Federation of Fishermen's Associations, Sierra Club California, Save California Salmon, and Golden State Salmon Association.

I would appreciate confirmation that you have received the comments and exhibits.

Many thanks,  
Rachel



**Rachel Zwillinger**

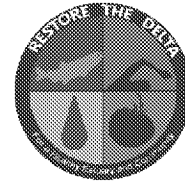
*Water Policy Advisor*

**DEFENDERS OF WILDLIFE**

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January 28, 2022

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

U.S. Bureau of Reclamation  
2800 Cottage Way, W-2830  
Sacramento, CA 95825

*Sent via email to: [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)*

**RE: Comments on Sites Reservoir Revised Draft Environmental Impact Report/  
Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS)**

Dear Sites Project Authority and Bureau of Reclamation:

On behalf of the Natural Resources Defense Council, Defenders of Wildlife, San Francisco Baykeeper, The Bay Institute, Planning and Conservation League, Restore the Delta, Northern California Council of Fly Fishers International, California Sportfishing Protection Alliance, Friends of the River, Golden West Women Flyfishers, Institute for Fisheries Resources, Pacific Coast Federation of Fishermen’s Associations, Sierra Club California, Save California Salmon, and Golden State Salmon Association, we are writing to submit comments on the November 2021 Sites Reservoir Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (“RDEIR/SDEIS”). Unfortunately, our review of the RDEIR/SDEIS demonstrates that the document fails to comply with the requirements of the California Environmental Quality Act (“CEQA”) and National Environmental Policy Act (“NEPA”). In particular, the RDEIR/SDEIS fails to consider a reasonable range of alternatives,

fails to use a stable and accurate project description, uses an inaccurate environmental baseline, and fails to adequately account for and assess impacts of the project in light of climate change. Equally important, the RDEIR/SDEIS also fails to adequately analyze impacts to aquatic species like Chinook salmon, Delta Smelt, and Longfin Smelt, and to terrestrial wildlife including giant garter snake and migratory birds, fails to disclose significant environmental impacts of the project to these and other species, inappropriately defers the formulation of mitigation measures, and proposes inadequate mitigation measures. Despite the fact that state agencies and other commenters raised many of these issues in comments on the August 2017 Draft Environmental Impact Report/Environmental Impact Statement (“DEIR/DEIS”), the RDEIR/SDEIS fails to correct these errors. Because the RDEIR/SDEIS is riddled with significant errors, inadequacies, and omissions, the lead agencies must make substantial revisions to the document and recirculate the revised document for public review and comment.

### **I. The RDEIR/SDEIS Fails to Consider a Reasonable Range of Alternatives**

CEQA and NEPA require that the RDEIR/SDEIS consider a reasonable range of alternatives. Cal. Pub. Res. Code §§ 21002, 21061, 21100; tit. 14, Cal. Code Regs. (“CEQA Guidelines”) § 15126.6; 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.1, 1502.14, 1508.25(b). However, the RDEIR/SDEIS fails to consider a reasonable range of alternatives because it only considers a single operational alternative, whereas other operational alternatives could reduce or avoid adverse environmental impacts. The failure to include any operational alternatives that could reduce or avoid adverse environmental impacts violates NEPA and CEQA. *See, e.g., Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d 553, 566 (1990) (EIR must consider a reasonable range of alternatives that offer substantial environmental benefits and may feasibly be accomplished); *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 813 (9th Cir. 1999) (NEPA analysis failed to consider reasonable range of alternatives where it “considered only a no action alternative along with two virtually identical alternatives”); *Natural Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir. 2005).

State agencies and members of the public, including many signatories to this letter, have repeatedly emphasized the need to analyze more than one operational alternative, first in scoping comments prior to release of the DEIR/DEIS, and subsequently in comments that the DEIR/DEIS failed to consider a reasonable range of alternatives because it only included a single operational alternative. For instance, the California Department of Fish and Wildlife (“CDFW”) previously wrote that,

... the DEIR/DEIS does not include potentially feasible alternatives that would avoid or substantially lessen the Project's significant environmental impacts. CDFW continues to recommend that the DEIR/DEIS should include a more robust range of operational alternatives, as discussed in its comments to the NOP, provided on March 21, 2017. Of the five alternatives in the DEIR/DEIS, many of them are similar with respect to water operations (e.g. diversions, bypass criteria, deliveries are the same across alternatives.) CDFW recommends that alternatives

should be split into two or more alternatives that encompass the entire range of possible water operations scenarios, including an alternative that minimizes operational impacts through more restrictive bypass flows and diversion criteria.

Letter from CDFW to the Sites Project Authority dated January 12, 2018 (“CDFW Comment Letter”).

Despite the prior comments on the need to analyze multiple operational alternatives, the RDEIR/SDEIS analyzes only a single set of operational criteria that is common to all the alternatives. *See, e.g.*, RDEIR/SDEIS at ES-10, 2-6, 2-8, 2-28 to 2-33. Yet as discussed in more detail below, the proposed bypass flows and other operational criteria result in significant environmental impacts that are not disclosed in the RDEIR/SDEIS.

State agencies and public commentors previously highlighted the need to analyze more than one operational alternative because the DEIR/DEIS failed to disclose significant environmental impacts, which could be mitigated through alternative operational criteria such as increased bypass flows. *See, e.g.*, CDFW Comment Letter at 2 (noting that the DEIR/DEIS failed to adequately analyze and disclose environmental impacts and stating that “CDFW does not consider proposed bypass flows identified in the DEIR/DEIS to sufficiently minimize or offset these impacts.”). The RDEIR/SDEIS now admits that the operational criteria that were included in the DEIR/DEIS, and that are modeled in the RDEIR/SDEIS, would result in significant environmental impacts requiring mitigation. *See* RDEIR/SDEIS at ES-26, 11-131. As discussed *infra*, even with the proposed mitigation measure (Wilkins Slough Flow Protection Criteria), all of the alternatives result in significant environmental impacts to several fish species. The RDEIR/SDEIS does not include the full range of bypass flows and other operational criteria proposed by CDFW or other commentators to mitigate these significant impacts as alternatives in the RDEIR/SDEIS.

Similarly, as discussed *infra*, the State Water Resources Control Board (“SWRCB”) began the regulatory process to update the Bay-Delta Water Quality Control Plan in 2008, issued a Framework in 2018 for completing the update of the Water Quality Control Plan,<sup>1</sup> and has announced that it anticipates adopting new water quality standards for the Sacramento River and Delta as part of the updated Water Quality Control Plan in 2023.<sup>2</sup> The RDEIR/SDEIS fails to provide a reasoned explanation why it does not consider alternative operational criteria that

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<sup>1</sup> *See* State Water Resources Control Board, July 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan, available online at: [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/docs/sed/sac\\_delta\\_framework\\_070618%20.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf). This document is incorporated by reference.

<sup>2</sup> *See* State Water Resources Control Board, Upcoming Actions to Update and Implement the Bay-Delta Plan, December 8, 2021, available online at: [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/docs/20211207-slides-for-12-08-bay-delta-plan-inform-item\\_accessible.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/20211207-slides-for-12-08-bay-delta-plan-inform-item_accessible.pdf). This document is incorporated by reference.

would be consistent with the 2018 Framework for completing the update of the Bay-Delta Water Quality Control Plan, particularly since the final CEQA/NEPA document is intended to be used by the SWRCB in consideration of water rights permits.

The RDEIR/SDEIS violates CEQA and NEPA because it fails to consider more than one operational alternative that could reduce or avoid significant environmental impacts of the proposed project and alternatives.

## **II. The RDEIR/SDEIS Fails to Use an Accurate and Stable Project Description**

### **(A) The RDEIR/SDEIS Fails to Use an Accurate and Stable Project Description Because the Project that the RDEIS/SDEIR Analyzes is Inconsistent with the Project Description**

The RDEIR/SDEIS violates CEQA because the document fails to use an accurate and stable project description. In particular, the modeling of operations in the RDEIR/SDEIS, which is the basis for the analysis of potential environmental impacts throughout the document, does not include the proposed mitigation measure FISH-2 (Wilkins Slough Flow Protection Criteria). As a result, the quantitative analysis and modeling in the RDEIR/SDEIS does not analyze the project that is proposed in the RDEIR/SDEIS.

It is black letter law that "[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." *County of Inyo v. City of Los Angeles*, 71 Cal. App. 3d 185, 193 (1977). CEQA requires a clear explanation of the nature and scope of the proposed project, otherwise it "is fundamentally inadequate and misleading." *See Communities for a Better Environment v. City of Richmond*, 184 Cal.App.4th 70, 84-85 (2010).

In this case, the RDEIR/SDEIS includes inconsistent bypass flow criteria that limit diversions from the Sacramento River in the operational criteria common to all the alternatives. *Compare* RDEIR/SDEIS at 2-31 to 2-33 (identifying bypass flow criteria of 8,000 cfs at Wilkins Slough in April and May, and 5,000 cfs in other months) with *id.* at 11-131 (describing the proposed Wilkins Slough Fish Protection Criteria mitigation measure, which requires a 10,700 cfs bypass flow at Wilkins Slough during the months of March through May). Buried deep in the appendices, the RDEIR/SDEIS indicates that the proposed mitigation measure FISH-2 (Wilkins Slough Flow Protection Criteria) is not included in the modeling of the proposed project and alternatives. *See, e.g.*, RDEIR/SDEIS Appendices at 5A1-29, 5A2-28 to 5A2-33.

As a result, all of the modeling of proposed operations in the RDEIR/SDEIS common to all of the alternatives – including modeling and analysis of environmental impacts on surface water supplies, on fish and wildlife, and on water quality – does not actually model or analyze the effects of the proposed project or alternatives, and instead the analyses and modeling in the RDEIR/SDEIS are inconsistent with the actual proposed project (which includes this proposed mitigation measure). The document fails to analyze the likely environmental impacts of the

proposed project and alternatives because, in light of the document's failure to articulate a stable project description, it fails to analyze the proposed project at all.

The inconsistent descriptions of the proposed project are grossly misleading to the public and decisionmakers in violation of CEQA. *See, e.g., San Joaquin Raptor Rescue Center v. County of Merced*, 149 Cal.App.4th 645, 655-56 (2007) (holding that the project description was inconsistent as to whether the project would increase mining production and violated CEQA, in part based on statements in public hearings on the CEQA document that demonstrated such inconsistencies); *Communities for a Better Environment*, 184 Cal.App.4th at 83-84 (holding project description violated CEQA because of inconsistent statements regarding the objectives of the project).

The RDEIR/SDEIS uses different modeling assumptions for project operations and alternatives in other chapters, which also do not reflect the proposed project or alternatives. For instance, in the analysis of the effects of diversions on salmon survival in the Sacramento River (Appendix 11P), the RDEIR/SDEIS states that it uses different modeling assumptions that are not reflected in the proposed project, including a requirement that Delta outflow is greater than 44,500 cfs in the months of April to May and that there are 7 days of surplus conditions in the Delta in order for the project to divert water. RDEIR/SDEIS at 11P-2 to 11P-3. These operational criteria are not currently part of the proposed project, *see id.* at 2-31, nor are they part of the CalSim modeling used in body of the RDEIR/SDEIS, *see id.* at 5A2-23. As a result, the modeling in Appendix 11P and the analysis of the effects of reduced flows on salmon survival in the Sacramento River fails to analyze the proposed project and alternatives.

In addition, the RDEIR/SDEIS assumes that there will be water exchanges with Shasta and Oroville reservoirs in certain years, which affects operations of those reservoirs and temperature-dependent mortality of salmon. RDEIR/SDEIS at ES-12, 2-35 to 2-37, 5A-2-30 to 5A-2-33.<sup>3</sup> However, there are no proposed agreements for such exchanges between the CVP or SWP and Sites, and this element of the project is speculative. *See id.* at ES-10 (“exchanges of water *may* occur with the CVP and SWP”) (emphasis added); *id.* at 2-35 (acknowledging that the Sites Reservoir Authority is in discussions with the U.S. Bureau of Reclamation (“Reclamation”) and the California Department of Water Resources (“DWR”) regarding potential exchanges). Equally important, the RDEIR/SDEIS does not analyze the potential adverse effects that would result from such exchanges, including potential changes in river flows, redd dewatering, or reductions in juvenile salmon survival, and completely ignores the effects of exchanges with Folsom Reservoir. *See* RDEIR/SDEIS at 5-27; *id.* at 11-103 (admitting that the RDEIR/SDEIS needs to “better reflect the exchanges in the model,” that these exchanges are difficult to model,

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<sup>3</sup> Because these exchanges would be intended to “assist the CVP and SWP in meeting their regulatory obligations,” RDEIR/SDEIS at 2-35, these exchanges do not provide public benefits that justify public taxpayer expenditures for this project. These exchanges are effectively water supply benefits to the contractors of the CVP and SWP who are obligated to pay for meeting regulatory requirements of the CVP and SWP.



and that the RDEIR/SDEIS underestimates the extent of potential exchanges that could occur under the proposed project).<sup>4</sup>

Because the RDEIR/SDEIS fails to provide an accurate and stable project description, the document fails to model and analyze the environmental impacts of the proposed project and alternatives, in violation of CEQA and NEPA.

(B) The RDEIR/SDEIS Fails to Use an Accurate and Stable Project Description Because the Overall Project Design is Not Final and Major Project Components Have Not Been Designed at All

The RDEIR/SDEIS also fails to provide an accurate and stable project description because the overall project design is not yet final and major project components that will have significant environmental impacts have not been designed at all. The RDEIR/SDEIS states that, “[a]s with any large infrastructure project, the Project must and will continue toward final design. Project components will be refined as the Project moves toward final design and as parcels become accessible to survey.” RDEIR/SDEIS at 3-7; *see also id.* at 9-20 (explaining that estimates of acreage of impacts to plant habitats and wetlands is based on “preliminary engineering design”). While the RDEIR/SDEIS acknowledges that the overall project design is not yet final, it does not clearly describe what project components could change and how. It is impossible for the public to understand the environmental impacts of the project and to meaningfully comment when it is not yet clear what the project is.

In addition to vague statements about the lack of finality of the project’s design, the RDEIR/SDEIS highlights particular project components that have not been designed at all. For example, it appears that the locations for major sections of the project’s 46 miles of new paved and unpaved roads have not yet been determined. *See, e.g.,* RDEIR/SDEIS at 9-15 (“The exact locations of the realigned Huffmaster Road, new Comm Road South, and new South Road are not yet finalized.”); 9-44 (“exact locations of construction-related activities are not known for the new roads”). As the RDEIR/SDEIS acknowledges, these roadways could cause significant impacts to waterways, wetlands, and wildlife:

New roadways would create physical barriers or impediments for some wildlife, including amphibians and reptiles, which may have a difficult time crossing the roadways. There are numerous waterways and wetlands in the study area, and new or larger roadways could disrupt existing connections between aquatic and upland habitats, and result in increased habitat fragmentation, which could affect

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<sup>4</sup> The RDEIR/SDEIS also admits that Sites Reservoir cannot release water to GCID and other participants located between the Hamilton City Pump Station and Knights Landing, and that deliveries of water to those participants would be made by GCID and Reclamation. RDEIR/SDEIS at 2-34. The RDEIR/SDEIS does not appear to analyze the effects of additional Shasta Dam releases by Reclamation to fulfill such exchanges, which could be particularly impactful to the environment in drier years.

seasonal movements of amphibians and reptiles. Roadways may deter some larger animals from moving through those areas, even if they are able to physically cross the roadways. In addition, some of the roadways may be fenced, which would create a greater impediment to large animals attempting to cross the road. New roadways would also increase the potential for wildlife to be struck by vehicles of workers traveling to operations facilities or visitors traveling to recreation areas, and the presence of fences could trap animals in the roadway and make them more prone to being struck by vehicles.

RDEIR/SDEIS at 10-139. Yet there is no meaningful discussion of the impacts of specific roads to specific resources and no exploration of alternative routes that could minimize impacts because specific road locations have not been proposed.

The RDEIR/SDEIS suggests that the lack of information about roadway locations is not a problem because the lead agencies have estimated the maximum extent of impacts by assuming that resources within the broader “road alignment corridor” will be impacted and because “roads . . . will be designed, to the extent practicable, to avoid direct and indirect impacts . . . .” RDEIR/SDEIS at 9-45 to 9-46. This approach undermines core purposes of CEQA and NEPA. First, it fails to provide the public with an accurate assessment of the project’s impacts, and instead provides only an unrealistic overestimate of impacts that is not reflective of the actual project. Second, it deprives the public of an opportunity to comment on alternative alignments or approaches that could reduce the roadways’ environmental impacts, deferring the process of selecting roadway locations to an unspecified future date when there will be no opportunity for public input and review pursuant to the procedures set forth in NEPA and CEQA.

Basic details about other key project components that could significantly impact the environment are also unknown. Large recreation areas are not yet designed, depriving the public of an opportunity to understand a realistic picture of their impacts and comment on alternative designs that could reduce those impacts. RDEIR/SDEIS at 9-24 (“The permanent footprint of these recreation areas is currently at a conceptual design stage, and the actual location of facilities is not yet known.”). 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.” RDEIR/SDEIS at 9-14. Transmission line can have serious impacts to birds and the towers can destroy vernal pool wetlands and other important landscape features. Yet the RDEIR/SDEIS does not provide the public with an opportunity to understand the project’s impacts or suggest alternatives because it lacks basic information like the locations of transmission line towers. Similarly, the RDEIR/SDEIS discusses the need for upgrades to the GCID canal but indicates that the details will be worked out in the future. RDEIR/SDEIS at 2-9 (“The GCID system may require several upgrades to support the operation of Sites Reservoir. The specific details of these upgrades would be confirmed during future hydraulic modeling and assessment of system conditions.”). There are likely threatened giant garter snakes in the GCID system, and the location, timing, and method of construction matters greatly for avoiding and minimizing impacts to this sensitive species. Once again, the RDEIR/SDEIS fails to provide the public with a meaningful

opportunity to understand those impacts and suggest alternative approaches because the document omits the most basic planning details.

The RDEIR/SDEIS makes clear that the project's design is not yet complete, and that major, impactful decisions related to roads, recreation areas, transmission lines, canal modifications, and other project components will occur in the future. Shielding these decisions from public review deprives the public of a meaningful opportunity to understand the project's impacts and comment in violation of CEQA and NEPA. Accordingly, a revised draft EIS/EIR must once again be recirculated for public comment when project design is complete.

### **III. The RDEIR/SDEIS Fails to Accurately Analyze the Environmental Impacts of the Project in Light of the Effects of Climate Change that have Already Occurred and the Effects of Climate Change Over the Life of the Project**

CEQA and NEPA require that the analysis of potential environmental impacts address the full duration of the project, not just the environmental impacts at the very beginning of the project. The CEQA Guidelines explicitly require the consideration of "both the short-term and long-term effects." 14 Cal. Code Regs. § 15126.2(a). In *Neighbors for Smart Rail*, the California Supreme Court reiterated that an EIR must evaluate both the near-term and long-term environmental impacts of a proposed project. 57 Cal. 4th at 455. The RDEIR/SDEIS violates CEQA and NEPA because it fails to accurately assess the environmental impacts of the proposed project in the short term in light of the already observed effects of climate change, and because it wholly fails to consider the environmental impacts in the long term in light of the increasing effects of climate change.

First, the RDEIR/SDEIS fails to accurately assess the short-term effects of the project because the analysis of environmental impacts uses observed hydrology from 1922 to 2003 without considering the effects of climate change. *See, e.g.*, RDEIR/SDEIS at 3-5, 5A1-2. However, that historic hydrologic data do not account for the effects of climate change that have significantly altered hydrology from the historic baseline as observed over the past several decades. Inexplicably, the RDEIR/SDEIS fails to use hydrologic modeling data that have already been developed by DWR and Reclamation for CalSim II (and for CalSim III) which incorporate the near-term effects of climate change on hydrology and water temperatures.<sup>5</sup> As a result, the analysis of environmental impacts in the RDEIR/SDEIS uses outdated information that significantly underestimates the environmental impacts of the proposed project in combination with the effects of climate change.

For example, because the Sites Reservoir RDEIR/SDEIS excludes the observed effects of climate change in recent years, the environmental analysis estimates that temperature-dependent

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<sup>5</sup> This modeling data is used in the Climate Change appendix, but it is not used in the body of the RDEIR/SDEIS, making the analysis of environmental impacts in the RDEIR/SDEIS plainly inaccurate.

mortality of winter-run Chinook salmon in the Sacramento River under the No Action Alternative is 24.4 percent in critically dry years. RDEIR/SDEIS at 11O-6. In contrast, the Trump Administration’s final 2020 EIR on the long-term operations of the Central Valley Project and State Water Project concludes that temperature-dependent mortality of winter-run Chinook salmon in the Sacramento River under the biological opinions (the No Action Alternative in the Sites Reservoir RDEIR/SDEIS) is 61 percent.<sup>6</sup>

Similarly, Chapter 28 of the RDEIR/SDEIS shows that the effects of climate change with the proposed project and alternatives would cause greater reductions in Sacramento River flow at Wilkins Slough in critically dry years than when climate change is excluded. RDEIR/SDEIS at 28-16 (reductions in December flow at Wilkins Slough from the alternatives increase from 5-6 percent without climate change to 6-7 percent with climate change). And when the effects of climate change are included, the proposed project and alternatives result in much larger reductions in December Delta outflow. *See id.* at 28-24 to 28-25 (reductions in December Delta outflow in critically dry years are 4-5 percent excluding climate change and 7-8 percent when climate change is considered). Yet the impacts of the proposed project’s reduction in flow on fish and other resources in the lower river and the Bay-Delta, in light of the effects of climate change, are not analyzed—the cursory discussion about aquatic biological resources in section 28.5.5 focuses on benefits in spawning areas from “temperature exchanges” (which are entirely speculative and solely a mitigation measure); describes a benefit to fish from increased Delta outflow in October (while ignoring flow reductions in other months); and suggests that reduced groundwater pumping due to the additional surface storage would benefit fish by protecting riparian trees (without acknowledging that the project changes the hydrograph in ways that may harm native riparian trees). None of these supposed benefits are adequately documented, analyzed, or likely to materialize and no mitigations are offered for the likely negative effects (e.g., of reduced flows and harm to native riparian trees) that the RDEIR/SDEIS glosses over. *See id.* at 28-31.

The exclusion of the effects of climate change from the RDEIR/SDEIS also results in inaccurate modeling of the temperature of water released from the proposed project, given the current effects of climate change, as well as the effects anticipated in the coming decades. *See id.* at 28-4 (estimating that air temperatures in California could increase by 5.8°F by 2050 and up to 8.8°F by 2100, and that air temperatures in the Sacramento Valley in the months of July through September are likely to increase by 2.7°F to 10.8°F, as a result of climate change); *id.* at 28-27 (admitting that climate change is likely to increase occurrence of harmful algal blooms in the proposed reservoir).

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<sup>6</sup> *See* Final EIS, Appendix F, Attachment 3-8, Table 1-1, available online at: [https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc\\_ID=41744](https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=41744). As the table notes, “[a]ll scenarios are simulated at ELT (Early Long-Term) Q5 with 2025 climate change and 15 cm sea level rise.” *Id.* This document is incorporated by reference.

Second, the RDEIR/SDEIS entirely fails to evaluate the long-term environmental impacts of the proposed project because it only analyzes environmental impacts based on anticipated conditions in the year 2020, 2021 or 2030, depending upon which part of the document is reviewed.

*Compare* RDEIR/SDEIS at ES-7 (describing conditions in 2030) and *id.* at 3-5 (“Operations is assumed to begin in 2030 and would continue for the life of the Project.”) *with id.* at 5A-2-2 (“Planning Horizon” defined as the year 2021) *with id.* at 3-2 (“the existing conditions baseline under CEQA has been updated to capture conditions through 2020.”). Despite the clear mandate of CEQA to evaluate long-term impacts of the project, the RDEIR/SDEIS does not do so.

Excluding the effects of climate change in assessing environmental impacts<sup>7</sup> is particularly egregious and unlawful because: (1) analysis of the impacts of climate change was required in the quantification of public benefits of water storage projects under Proposition 1, as well as to comply with Executive Order B-30-15 (2015) and Assembly Bill 1482 (2015), which require state agencies to account for climate change in project planning and investment decisions; and (2) the longer-term effects of climate change are likely to have more severe impacts in terms of hydrological modification and increased air and water temperatures. Moreover, the RDEIR/SDEIS erroneously describes the 1922-2003 CalSim modeling as “current climate conditions,” *see* RDEIR/SDEIS at 5A-2, but state and federal agencies have repeatedly concluded that the 1922-2003 historical hydrologic information does not adequately represent current climate conditions given the change in the climate that has been observed in recent decades.

Because the RDEIR/SDEIS fails to consider the effects of climate change in the near term in determining the potential environmental impacts of the proposed project and alternatives, and because the RDEIR/SDEIS wholly fails to consider the long-term environmental impacts in a future with climate change, the document violates NEPA and CEQA.

#### **IV. The RDEIR/SDEIS Fails to Use an Accurate Environmental Baseline and Fails to Accurately Describe the Environmental Setting**

##### *(A) The RDEIR/SDEIS Fails to Use an Accurate Environmental Baseline*

The RDEIR/SDEIS also violates CEQA and NEPA because it fails to use an accurate environmental baseline. The environmental baseline is typically the conditions that exist when the Notice of Preparation is issued. Cal. Code Regs., tit. 14, § 15125(a). Here, however, the RDEIR/SDEIS improperly uses the following baseline that differ from conditions that existed when the Notice of Preparation was issued, including: (1) it uses the Trump Administration’s

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<sup>7</sup> While the RDEIR/SDEIS includes a separate chapter that includes some modeling of the proposed project and alternatives with climate change, the document excludes the effects of climate change in determining what constitutes an environmental impact under NEPA and CEQA, and thus fails to consider the near-term and long-term effects of the project under a lawful baseline.

2019 Biological Opinions for operations of the Central Valley Project and State Water Project as part of the baseline; (2) it omits the SWRCB's 2018 Update of the Bay-Delta Water Quality Control Plan; and (3) it ignores the pending revision of water quality standards for the Sacramento River and flows into, through and from the Delta to San Francisco Bay as the final part of the SWRCB's forthcoming update of the Bay-Delta Water Quality Control Plan. Instead the RDEIR/SDEIS assumes that other regulatory requirements would be identical in the future even as species spiral towards extinction because of unsustainable water diversions.

First, the RDEIR/SDEIS proposes to use the 2019 biological opinions for operations of the CVP and SWP as part of the environmental baseline, claiming that because these biological opinions were issued after the Notice of Preparation, they are anticipated to be implemented "into the future," and thus "an updated baseline is necessary to provide the most accurate picture of the Project's impacts." RDEIR/SDEIS at 3-2 to 3-3. However, even before the RDEIR/SDEIS was released to the public on November 12, 2021, the federal government formally reinitiated consultation on the long-term operations of the CVP and SWP on October 1, 2021, beginning the process to develop new biological opinions. In addition, the Biden Administration has agreed to not defend these biological opinions in court, and the state and federal administrations have proposed interim operations that would modify and not fully implement the biological opinions in 2022. As a result, at the time the RDEIR/SDEIS was released to the public, the federal government had agreed that the 2019 Biological Opinions were "not an accurate picture" of how the CVP and SWP would be operated in the near term, let alone "into the future," and it is arbitrary and capricious to conclude otherwise. Including these blatantly unlawful biological opinions in the environmental baseline of the RDEIR/SDEIS violates CEQA and NEPA because this environmental baseline is not an accurate reflection of environmental conditions that would be affected by the proposed project and alternatives, and the document must be revised to analyze operations with a lawful environmental baseline that accurately reflects how the CVP and SWP could lawfully be operated.

Second, the environmental baseline used in the RDEIR/SDEIS violates CEQA and NEPA because it does not include existing water quality standards adopted by the SWRCB in 2018. While the RDEIR/SDEIS's environmental baseline selectively updated some regulatory requirements to include the 2019 biological opinions, the document excludes the regulatory requirements adopted by the SWRCB in 2018 regarding water quality standards for Delta salinity and freshwater inflow from the Stanislaus, Tuolumne, Merced, and lower San Joaquin Rivers. *See* RDEIR/SDEIS at 5A2-20 to 5A2-22. The RDEIR/SDEIS fails to provide any reasoned explanation for excluding these regulatory requirements from the environmental baseline.

Finally, the environmental baseline is also unlawful because it assumes that regulatory obligations that affect diversions from the Bay-Delta will not change in the future, even as fish species continue to spiral towards extinction and regulatory processes to update standards are underway. The RDEIR/SDEIS asserts that "[t]he reasonably foreseeable future conditions under the No Project Alternative would not be materially different from the conditions under the

CEQA existing conditions baseline” because existing regulatory requirements, including the 2019 Biological Opinions, “would reasonably be anticipated to continue to be implemented into the future.” RDEIR/SDEIS at 3-2 to 3-3. The SWRCB began its process of updating the Bay-Delta Water Quality Control Plan in 2008, adopted new regulatory requirements for Phase 1 of the updated Water Quality Control Plan in 2018, issued a framework in 2018 for completing the update of the Water Quality Control Plan,<sup>8</sup> and has announced that it anticipates adopting new water quality standards for the Sacramento River and the Bay-Delta estuary as part of the updated Water Quality Control Plan in 2023.<sup>9</sup> There is no justification for entirely excluding consideration of the forthcoming updates to the Bay-Delta Water Quality Control Plan in the RDEIR/SDEIS, particularly since the document will purportedly be used by the SWRCB.

*(B) The RDEIR/SDEIS Fails to Accurately Describe the Environmental Setting*

In addition to the above-described inaccuracies in the environmental baseline, the RDEIR/SDEIS fails to provide basic information regarding the environmental setting, which makes it impossible for the public to understand and meaningfully comment on the project’s impacts. This is particularly true for the RDEIR/SDEIS’s discussion of vegetation, wetland, and wildlife resources. For these resources, the RDEIR/SDEIS relied on outdated, unreliable, and inaccurate habitat and species distribution information even though it was feasible to provide more accurate information, in violation of CEQA. *See Save Agoura Cornell Knoll v. City of Agoura Hills*, 46 Cal.App.5th 665, 692-94 (2020).

No new on-the-ground surveys regarding vegetation, wetland, or wildlife resources were conducted for preparation of the RDEIR/SDEIS. Rather, the RDEIR/SDEIS relies primarily on desktop modeling of land-cover types based on areal imagery to describe the location of plant communities and wetlands. RDEIR/SDEIS at 9-8. For wildlife resources,

[a]vailable literature was reviewed to identify known habitat associations and habitat requirements for each species. Habitat requirements were then compared with the existing land cover types mapped in the study area, and a series of assumptions were made regarding which land cover types could provide potentially suitable habitat for each species based on its habitat requirements.

RDEIR/SDEIS at 10-8. The RDEIR/SDEIS emphasizes multiple times that “[a]ll land cover type acreages are preliminary and subject to revision based on pedestrian surveys once access has been granted to the study area.” RDEIR/SDEIS at 10-8; *see also* DEIS.DEIR at 9-8 (same), 9-9 (“The acreages of wetlands and non-wetland waters presented are preliminary, as the aquatic resources delineation has not been completed with onsite surveys or jurisdictional review by the

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<sup>8</sup> *See supra* note 1.

<sup>9</sup> *See* State Water Resources Control Board, Upcoming Actions to Update and Implement the Bay-Delta Plan, December 8, 2021, available online at: [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/docs/20211207-slides-for-12-08-bay-delta-plan-inform-item\\_accessible.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/20211207-slides-for-12-08-bay-delta-plan-inform-item_accessible.pdf). This document is incorporated by reference.

USACE and State Water Board.”); 9-18 (“All land cover type acreages are preliminary and subject to revision based on pedestrian surveys once access has been granted to the study area, particularly for the wetland and non-wetland water types, which are subject to change pending field review and verification by the USACE and State Water Board.”).

Not only are the land cover type estimates that form the basis for the RDEIR/SDEIS’s analysis of impacts to vegetation, wetlands, and wildlife “preliminary” and seemingly subject to radical revisions based on future field survey, the RDEIR/SDEIS admits they are unreliable. Appendix 10-B provides information about the models and methods used for defining wildlife habitats in the project area. It describes “habitat model limitations” for each species or species group analyzed and explains that “[t]he model is limited primarily by the accuracy of aerial imagery interpretation and the inability to ground truth the land cover mapping.” RDEIR/SDEIS at 10B-3. For each species group, it then provides further details about the model’s limitations. For example, for vernal pool branchiopods, it explains:

Vernal pool habitat must be inundated sufficiently by rainfall at the appropriate time of year to allow vernal pool branchiopods to reach maturity and reproduce; if the availability of aerial imagery is limited or the resolution is poor, it may not be possible to accurately determine the sufficiency of ponding. Additionally, very small seasonal wetlands that could provide suitable habitat may not be visible on aerial imagery. Other parameters that affect the habitat suitability for vernal pool branchiopods that are not measurable using aerial imagery review include water quality, ponding depth, and water temperature (U.S. Fish and Wildlife Service 2005:xiii, xiv).

RDEIR/SDEIS at 10B-3. In combination, the descriptions of the modeling limitations make clear that the RDEIR/SDEIS’s modeling of vegetation, wetlands, and wildlife is extremely coarse, inaccurate, unreliable, and not verified with any on-the-ground survey information. Yet this modeling is the basis for the RDEIR/SDEIS’s description of the environmental setting and the basis for its analysis of impacts for these resource areas.

The coarse nature of the models used in the RDEIR/SDEIS obscures the existence, extent, and location of particularly sensitive habitats, denying the public the opportunity to understand and comment on the project’s true impacts. For example, the RDEIR/SDEIS groups vernal pools and alkali wetlands along with several other wetland types under a category called “seasonal wetlands” in the description of the environmental setting and associated maps. Vernal pools and alkali wetlands are special types of seasonal wetlands that are a high priority for conservation because so few remain. But the RDEIR/SDEIS only provides location information for the broader category of “seasonal wetlands” and does not show the specific locations of vernal pools or alkali wetlands. Instead, it notes that “[a]dditional refinement of the mapping, including the resource boundaries and types (e.g., seasonal wetlands that are vernal pools or alkali wetlands) will be developed in coordination with agencies and with onsite surveys during the permitting process.” RDEIR/SDEIS at 9B-10. Deferring mapping of habitat types that are of critical conservation concern until after the NEPA and CEQA process makes it impossible for the public to understand and meaningfully comment on the project’s impacts.



The RDEIR/SDEIS indicates that, in addition to the modeling based on areal imagery, information on the extent and location of vegetation, wetland, and wildlife resources is also based on surveys conducted in 1998 and 2003. *See, e.g.*, RDEIR/SDEIS at 9-3. However, we are unable to discern how the old survey data are integrated into the description of the environmental setting or the impacts analysis, and it is not clear that they are integrated at all. *See, e.g.*, RDEIR/SDEIS at 10-7 (suggesting that the previous surveys were too old and therefore not used). To the extent the old survey data were used, reliance on them is problematic for all of the reasons discussed in our comments on the 2017 DEIR/DEIS, including because climate change is altering temperature and hydrologic patterns in the Sacramento Valley in a manner that impacts wildlife habitat suitability. *See also* CDFW Comments on 2017 DEIR/DEIS at 19 (“Botanical surveys were conducted in 1998 and 1999 within the reservoir footprint, and in 2000 through 2003 for potential conveyance routes, recreation areas, and road relocations. These surveys are out of date. CDFW recommends resurveying all areas associated within the Project area that would be impacted.”).

The RDEIR/SDEIS’s reliance on coarse and inaccurate habitat modeling (and potentially also on old survey data) is particularly problematic because more accurate approaches were available. For example, the lead agencies could have conducted on-the-ground surveys. The RDEIR/SDEIS explains that the lead agencies had to rely on coarse modeling based on areal imagery because “[p]roperty access restrictions to most of the Project area precluded field investigations of vegetation and wetland resources in the study area.” RDEIR/SDEIS at 9-8. However, project proponents were able to gain access to survey 75 percent of the study area between 1998 and 2003, and the RDEIR/SDEIS indicates that they did so by seeking court orders to access properties. RDEIR/SDEIS at 9-8, 3-4. The lead agencies also “pursued targeted access in recent years to support environmental clearance for geotechnical investigations.” RDEIR/SDEIS at 3-4 to 3-5. It seems that the lead agencies could have found a way to access the project area to conduct meaningful surveys for vegetation, wetlands, and wildlife—as they have in the past and did recently for geotechnical investigations—but chose not to prioritize access to the project area for these surveys. *See City of Agoura Hills*, 46 Cal.App.5th at 692-93 (use of outdated plant surveys violated CEQA, where document discussed future surveys but there was no showing that it was infeasible to perform these surveys prior to project approval so that the document could provide an accurate assessment of impacts).

The proponents also failed to consider other approaches that could have yielded more accurate information about the environmental setting, in order to accurately assess the environmental impacts of the proposed project and alternatives. For example, the RDEIR/SDEIS discusses conducting helicopter surveys to assess nest occupancy for golden eagles in the future. RDEIR/SDEIS at 10-97 to 10-98. The lead agencies could have, but did not, conduct helicopter surveys to inform the analysis in the RDEIR/SDEIS for golden eagles and perhaps other species as well. There are also detailed habitat suitability maps for some species that overlap with the project area and that do not appear to have been considered in the RDEIR/SDEIS. For example, Attachment A to the *2015 Programmatic Formal Consultation for Bureau of Reclamation’s Proposed Central Valley Project Long Term Water Transfers (2015-2024) with Potential Effects on the Giant Garter Snake within Sacramento Valley, California* includes a habitat suitability

map and maps of priority habitat areas for giant garter snakes. Inclusion of relevant information from these maps—and similar information for other species—in the description of the environmental setting would have helped to provide a more meaningful understanding of the project’s likely impacts to giant garter snakes and other sensitive wildlife.

The coarse and inaccurate discussion of the presence and location of vegetation, wetlands, and wildlife in the project area render the discussion of the project’s environmental setting unreliable. As discussed further below, this undermines the analysis of impacts for these resource areas in a manner that makes it impossible for the public to understand the nature and extent of the project’s impacts and deprives the public of an opportunity to meaningfully comment on alternatives. For these reasons, the RDEIR/SDEIS violates CEQA and NEPA, and the lead agencies must recirculate a revised draft EIS/EIR for public comment after conducting accurate surveys of vegetation, wetlands, and wildlife in the project area.

**V. The CALSIM Modeling Used in the RDEIR/SDEIS to Analyze Potential Environmental Impacts Appears to be Significantly Flawed, Making all of the Analyses Questionable**

It appears that the CALSIM modeling that is used in the RDEIR/SDEIS is significantly corrupted and flawed, raising serious questions about the accuracy of the analyses in the RDEIR/SDEIS. For instance, the modeling shows that, as compared to the No Action Alternative, Alternative 1A results in diversions of Sacramento River flows greater than 1,000 cfs on average in January (in Wet and Above Normal water years), February (in Wet, Above Normal, and Below Normal water years), and March (in Wet, Above Normal, Below Normal, and Dry water years). RDEIR/SDEIS at Table 5B1-3-1c. Similarly, the modeling shows that these diversions for Sites Reservoir under Alternative 1A would reduce flows in the Sacramento River at Hamilton City by more than 1,000 cfs in January (in Wet and Above Normal water years), February (in Wet, Above Normal, and Below Normal water years) and March (in Wet, Above Normal, Below Normal, and Dry water years). RDEIR/SDEIS at Table 5B2-13-1c. Yet inexplicably, the modeling in the RDEIR/SDEIS shows that diversions to Sites under Alternative 1A would cause substantially less reduction in flows in the Sacramento River at Wilkins Slough, with reductions in flow greater than 1,000 cfs only in March (Above Normal and Below Normal water years). *Id.* at Table 5B2-14-1c. Similarly, there is much less of a reduction in flow in the Sacramento River at Freeport under Alternative 1A. *Id.* at Table 5B3-1-1c (showing flow reduction is greater than 1,000 cfs only in March (in Above Normal, Below Normal, and Dry water years). But Alternative 1A results in reductions in Delta outflow that are greater than 1,000 cfs in January (in Wet and Above Normal water years), February (in Wet, Above Normal, and Below Normal water years), and March (in Wet, Above Normal, Below Normal, and Dry water years). *Id.* at Table 5B3-5-1c.

	January (Wet year)	February (Wet year)	March (Wet year)
Total Sites Diversions	1,287	1,426	1,114

Hamilton City	-1,264	-1,418	-1,128
Wilkins Slough	-310	-254	-483
Freeport	-492	-454	-582
Delta outflow	-1,298	-1,332	-1,131

Sources: Table 5B1-3-1c (Total Sites Diversions), Table 5B2-13-1c (Hamilton City), Table 5B2-14-1c (Wilkins Slough), Table 5B3-1-1c (Freeport), and Table 5B3-5-1c (Delta outflow)

The modeling indicates that Alternative 1 reduces flows in the Sacramento River at Hamilton City and Delta outflow by similar amounts, but causes far lesser reductions in flow between these points. The modeling also shows that flows through the Yolo Bypass are reduced as a result of the proposed project and do not account for the change in flow between Freeport and Delta outflow. RDEIR/SDEIS at Table 5B3-3-1c. These results do not appear to be credible, and the RDEIR/SDEIS does not provide any explanation why the reduction in flow upstream caused by diversions under the proposed project and alternatives would not result in similar reductions in flow at other locations downstream.<sup>10</sup>

In addition, the RDEIR/SDEIS provides entirely inconsistent results of the effects of diversions to Sites under Alternative 1A on flows in the Sacramento River at Wilkins Slough. Compare RDEIR/SDEIS at Table 5B2-14-1c with *id.* at Table 5C-9-1c. These two tables should show identical results because they are comparing the same alternatives, but they do not.

**Table 5C-9-1c. Sacramento River Flow at Wilkins Slough, Alternative 1A 011221 minus No Action Alternative 011221, Monthly Flow (cfs)**

Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Probability of Exceedance</b>												
10%	0	-50	-273	-299	-236	-379	-1,461	-113	-252	79	98	-112
20%	-12	-350	-268	-1,180	-355	-290	-1,032	-36	116	359	39	84
30%	81	-42	-393	-1,087	-1,256	-1,020	-46	-41	-231	349	161	79
40%	132	-80	-563	-571	-815	-2,128	-87	-190	-239	267	91	37
50%	223	-109	-279	-454	-593	-1,520	-65	-58	-51	213	311	422
60%	351	-299	-390	-456	-517	-1,325	-29	-107	-10	511	132	371
70%	245	-200	-91	-35	6	-980	-119	-79	-62	53	114	182
80%	332	-31	-167	-99	-306	-626	-100	-74	16	164	80	224
90%	139	-65	-118	-254	-175	70	9	-158	-90	269	127	196
<b>Long Term</b>												
Full Simulation Period <sup>2</sup>	121	-106	-234	-403	-469	-774	-236	-201	-139	249	138	129
<b>Water Year Types<sup>3,c</sup></b>												
Wet (32%)	-165	-200	-176	-437	-391	-541	-490	-253	-201	-29	-119	-41
Above Normal (15%)	56	-162	-267	-726	-771	-1,286	-216	-98	-176	51	-33	24
Below Normal (17%)	155	-8	-112	-460	-710	-1,119	-175	-26	-163	133	60	117
Dry (22%)	220	-25	-219	-258	-407	-835	-69	-148	-71	689	634	370
Critical (15%)	617	-83	-494	-157	-148	-274	-24	-475	-38	524	217	251

<sup>10</sup> The RDEIR/SDEIS shows that this is not the result of releases from Sites, as there is on average only 1 cfs of releases from Sites in January, 0 cfs in February, and 2 cfs in March. See RDEIR/SDEIS at Table 5B1-6-1c.

**Table 5B2-14-1c. Sacramento River at Wilkins Slough Flow, Alternative 1A 011221 minus No Action Alternative 011221, Monthly Flow (cfs)**

Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Probability of Exceedance</b>												
10%	-62	39	-137	-432	-121	-1	-614	-564	-626	10	84	-15
20%	14	-638	6	-326	-482	-489	-185	123	-264	413	62	104
30%	54	-298	7	-1,282	-622	-892	1	32	0	326	201	87
40%	372	-144	141	-497	-815	-1,271	-48	-186	-2	256	168	-5
50%	398	21	-554	-583	-582	-1,812	122	-171	81	274	416	435
60%	221	-46	-4	-434	-551	-1,537	-27	-190	-277	578	190	376
70%	171	-187	-330	-198	-161	-631	143	-304	-207	37	90	180
80%	184	196	-37	-183	-243	-491	-187	-299	162	286	-11	349
90%	193	184	141	2	-75	-542	-59	-381	-217	326	28	125
<b>Long Term</b>												
Full Simulation Period <sup>a</sup>	108	-72	-124	-318	-351	-757	-193	-216	-121	278	142	146
<b>Water Year Types<sup>b,c</sup></b>												
Wet (32%)	-164	-334	-56	-310	-254	-483	-511	-200	-231	-11	-88	-30
Above Normal (15%)	69	-18	-134	-515	-367	-1,108	-90	-160	-213	57	-34	32
Below Normal (17%)	149	142	-86	-398	-618	-1,212	-105	-171	-173	163	52	129
Dry (22%)	193	53	7	-239	-387	-885	-5	-141	10	753	623	376
Critical (15%)	558	3	-595	-163	-182	-279	10	-472	75	545	201	315

Finally, the Daily Divertible and Storable Flow Tool fails to include any Above Normal years, which results in a failure to adequately analyze potential impacts to salmon. RDEIR/SDEIS Attachment 11P-1 (describing Daily Divertible Flow Tool). This tool uses 2009-2018 hydrology, a period which contains no Above Normal years. There are only two Wet years during this period, and the tool identified significant impacts to salmon in both of these years. RDEIR/SDEIS at 11P-4. While the RDEIR/SDEIS suggests that mitigation Measure FISH-2.1 could reduce impacts to salmon from the project diversions, it shows that the project's impacts are not fully mitigated in one of those two years (2011) and would still result in reduced salmon survival through the Delta. *Id.* at 11P-8. In addition, because hydrologic conditions in 2011 are similar to that of Above Normal years, it indicates that unmitigated impacts are likely to occur in Above Normal years and other years similar to 2011. The decision to exclude Above Normal years from the analysis means that possible significant impacts in Above Normal years are unknown, and the RDEIR/SDEIS fails to analyze the effectiveness of Project Mitigation Measure FISH-2.1 in Above Normal years. Therefore, the RDEIR/SDEIS must be revised to include analysis of Above Normal years, such as 2000, 2003, and 2005.

The CALSIM modeling in the RDEIR/SDEIS is internally inconsistent and limited, and appears to be flawed and corrupted. All analyses in the RDEIR/SDEIS that use CALSIM to assess the effects of the project are unreliable.

**VI. The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts and Fails to Disclose Significant Adverse Environmental Impacts of the Proposed Project and Alternatives**

*(A) The RDEIR/SDEIS Fails to Accurately Assess Environmental Impacts Because it Ignores Changes in Flow or Storage Less Than 5 or 10 Percent*

The RDEIR/SDEIS' analysis of significant environmental impacts violates NEPA and CEQA because it assumes that changes in flow or storage less than 5 percent and/or 10 percent are insignificant. However, changes in flow and/or storage less than 5 percent or 10 percent

frequently results in these levels dropping below key thresholds relating to the survival of native fish species, including species listed under the California Endangered Species Act (“CESA”) and the federal Endangered Species Act (“ESA”). As a result, even changes in flow or storage levels that are a less than 5 percent change from the baseline clearly can and do cause significant adverse impacts to native fish species. Moreover, for salmon and other species, reductions in flow less than 5 percent have synergistic impacts that can be devastating for these species, as reduced flows reduce survival in multiple reaches of the Sacramento River and through the Delta, resulting in cumulatively significant reductions in survival. As a result, the RDEIR/SDEIS fails to disclose significant impacts of the proposed project and alternatives to species listed under CESA and the ESA, for which mandatory findings of significance are warranted. The RDEIR/SDEIS must be revised to eliminate the assumption that changes in flow or storage less than 5 percent and less than 10 percent are insignificant.

The RDEIR/SDEIS claims that the CALSIM model is not accurate enough to assess changes in flow or storage less than 5 percent, stating that,

Incremental flow and storage changes of 5% or less in modeled results are generally considered within the standard range of uncertainty associated with model processing. Therefore, for the purposes of the impact analysis, flow changes of 5% or less were considered to be similar to the NAA for comparative purposes. Changes in flow exceeding 10% were considered to represent a potentially meaningful difference.

RDEIR/SDEIS at 11-57. These 5 percent and 10 percent thresholds of significance are arbitrary, inconsistent with other NEPA/CEQA documents prepared by Reclamation, and not supported by substantial evidence. Moreover, to the extent that CALSIM 2 fails to accurately assess impacts, the RDEIR/SDEIS fails to explain why it does not use the CALSIM 3 model, which has been publicly released by DWR and incorporates more recent hydrological data.

First, the RDEIR/SDEIS provides no justification for why changes in flow less than the 10 percent threshold would not be considered a potentially meaningful difference. The lack of any explanation for this assumption regarding the 10 percent threshold makes it plainly arbitrary and capricious.

Second, the justification for the 5 percent threshold is also irrational and not supported by substantial evidence. Because CALSIM modeling is used in a comparative manner (meaning that it is used to model conditions under both the environmental baseline and action alternatives), there is no need for the 5 percent or 10 percent thresholds. Importantly, there is no basis to conclude that Sacramento River flow reductions due to diversions to storage under the proposed project are an illusory modeling artifact; instead, reduced flow in the Sacramento River is an inevitable and necessary consequence of diverting water from the Sacramento River to fill Sites Reservoir. While the CALSIM model does have significant flaws, failing to disclose changes in flow that are 5 percent (or 10 percent) or less as a significant impact misleads the public and

decisionmakers. In fact, other CEQA/NEPA documents that use CALSIM modeling do not use a 5 percent or 10 percent thresholds for determining whether changes in flow or storage constitute a significant impact. For instance, the final CEQA/NEPA documents for the California WaterFix project did not use these thresholds, and the RDEIR/SDEIS provides no reasoned explanation why these assumptions are necessary since they have been omitted from other CEQA/NEPA analyses where CALSIM is used.

Third, the RDEIR/SDEIS does not consistently employ these thresholds. If a 5 percent change is significant, then to avoid impacts the project could simply limit diversions to levels that produce a less than 5 percent change in flow, yet it fails to do this. In addition, changes in Delta outflow from the proposed project are generally less than 5 percent, *see* RDEIR/SDEIS at Table 5B3-5-1a, yet as the RDEIR/SDEIS admits, the reduction in abundance of Longfin Smelt that results from reduced Delta outflow would be a significant impact requiring mitigation, *see id.* at 11-271.

Fourth, using these 5 percent and 10 percent thresholds results in the RDEIR/SDEIS failing to disclose significant environmental impacts for which mitigation is required. For instance, the RDEIR/SDEIS claims that the project and alternatives would cause a significant impact to winter-run Chinook salmon if diversions by the proposed project or alternatives caused flows in the Sacramento River to drop below 10,700 cfs. RDEIR/SDEIS at 11-130 to 11-131. However, because the RDEIR/SDEIS assumes that a 5 percent reduction in flows in the Sacramento River is simply a modeling artifact and not a real change, the RDEIR/SDEIS would not identify operations that reduce flows by 4 percent, but drop below 10,700 cfs, as a significant effect. Similarly, although the IOS life cycle model used in the RDEIR/SDEIS finds that on average, winter-run Chinook salmon escapement is 3 percent lower under Alternative 1A and 4 percent lower under Alternative 1B, with greater reductions in escapement in wetter water year types, *see* RDEIR/SDEIS at 11-128, the RDEIR/SDEIS wrongly concludes this is a less than significant effect.<sup>11</sup>

Similarly, the use of arbitrary thresholds for identifying significant impacts is inconsistent with the CEQA guidelines, which require a mandatory finding of significance if a project would “cause a fish or wildlife population to drop below self-sustaining levels” or “substantially reduce the number or restrict the range of an endangered, rare or threatened species.” Cal. Code Regs., tit. 14, § 15065(a)(1). Where, as here, populations of winter-run Chinook salmon, Longfin Smelt, Delta Smelt, and other species are below self-sustaining levels, any further impacts that causes those populations to further drop below self-sustaining levels is a per se significant impact

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<sup>11</sup> As the RDEIR/SDEIS admits, the OBAN model does not account for the flow: survival relationship in the Sacramento River, RDEIR/SDEIS at 11-129 to 11-130, and therefore the OBAN model does not provide an accurate assessment of the effects of the proposed project and alternatives on salmon. Similarly, the SALMOD model does not accurately assess the effects of the proposed project and alternatives, including because it does not account for the flow: survival relationships in the Sacramento River and through the Delta; SALMOD is an outdated and discredited model should not be relied upon.

under CEQA requiring mitigation.<sup>12</sup> As one example, the RDEIR/SDEIS finds, using the IOS life cycle model, that Alternative 1A would reduce the long-term abundance of winter-run Chinook salmon by 3 percent on average, as a result of reducing survival through the Sacramento River by 1 percent and through the Delta by 1-2 percent. RDEIR/SDEIS at 11-128 to 11-129. The population of winter-run Chinook salmon is not self-sustaining under baseline conditions, and the impact of Alternative 1A is therefore per se a significant impact requiring mitigation. Cal. Code Regs., tit. 14, § 15065(a)(1).

The RDEIR/SDEIS fails to accurately analyze environmental effects and disclose significant environmental impacts because of the use of these arbitrary 5 percent and 10 percent thresholds. The RDEIR/SDEIS must be revised to exclude these improper assumptions regarding the effects of the proposed project and alternatives.

*(B) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Winter-Run Chinook salmon and Fails to Disclose Significant Impacts of the Proposed Project*

The RDEIR/SDEIS erroneously claims that the proposed project and alternatives will not cause significant environmental impacts to winter-run Chinook salmon; however, this conclusion is based on flawed and internally inconsistent analyses that fail to accurately assess the likely impacts of the proposed project and alternatives. The proposed mitigation measure FISH-2 fails to mitigate impacts to winter-run Chinook salmon, and the proposed project and alternatives will cause reduced survival and abundance of winter-run Chinook salmon, which is a significant impact in light of the fact that the species is declining and is not self-sustaining under baseline conditions. Cal. Code Regs., tit. 14, § 15065(a)(1). The RDEIR/SDEIS must be revised to accurately characterize impacts to winter-run Chinook salmon and to identify adequate mitigation measures that eliminate significant impacts to winter-run Chinook salmon.

*(i) The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon Caused by Reduced Flows in the Sacramento River Due to Incorrect Assumptions Regarding Migration Timing*

Although the RDEIR/SDEIS acknowledges the scientific evidence demonstrating that reduced flows in the Sacramento River as a result of diversions to fill Sites Reservoir will reduce the survival of migrating juvenile salmon, the RDEIR/SDEIS concludes that mitigation measure FISH-2 will reduce these impacts to a less than significant level. See RDEIR/SDEIS at 11-130 to 11-131. This conclusion is arbitrary and capricious because mitigation measure FISH-2 applies only in the months of March to May, whereas winter-run Chinook salmon juveniles migrate past the diversion points for Sites Reservoir from October to May.

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<sup>12</sup> In addition, we note that CESA requires that the impacts of the project on listed species be fully mitigated and not jeopardize the continued existence of the species, see Cal. Fish and Game Code § 2081, regardless of whether those impacts are designated as significant under CEQA.

The RDEIR/SDEIS admits that diversions to Sites Reservoir that reduce flows in the Sacramento River at Wilkins Slough below 10,700 cfs would reduce the survival of winter-run Chinook salmon and constitute a significant environmental impact. *Id.* at 11-130 to 11-131. Numerous peer reviewed scientific studies have demonstrated a strong flow: survival relationship for juvenile salmon migrating down the Sacramento River, such that reduced flows as a result of diversions by Sites Reservoir would reduce the survival of juvenile salmon. *See, e.g.,* Michel et al. 2015; Cordoleni et al. 2017; Notch 2017; Henderson et al. 2018; Michel 2018; Michel et al. 2021).

The RDEIR/SDEIS claims that mitigation measure FISH-2, which prohibits diversions for Sites Reservoir when Sacramento River flows are less than 10,700 cfs at Wilkins Slough between March to April, would reduce these impacts to a less than significant impact while salmon are rearing or migrating downstream toward the Delta. RDEIR/SDEIS at 11-130 to 11-131 (“Mitigation Measure FISH-2.1 will limit the potential for negative flow-survival effects to winter-run Chinook salmon during their dispersal to rearing habitat and/or migration downstream toward the Delta”). However, as the RDEIR/SDEIS admits, winter-run Chinook salmon migrate past the diversion points for Sites Reservoir (at the Red Bluff Diversion Dam and at Hamilton City) and past Wilkins Slough well before the month of March, which is when the protections provided by FISH-2 would begin, and they are generally migrating out of the Delta between December and May. *See* RDEIR/SDEIS at 11-79 to 11-80 (noting that half of the annual migration of juvenile winter-run Chinook salmon have passed the Red Bluff Diversion Dam before late October and 90 percent before January 1; noting that winter-run Chinook salmon are caught in Knights Landing rotary screw traps between mid-September to mid-March, with the bulk of the run (90 percent) generally passing between early October to mid-March; noting that winter-run Chinook salmon are generally caught in the Chipps Island trawls between December 1 and May); *see id.* at 11-124 (“the main period of juvenile winter-run Chinook salmon occurrence in the Delta (i.e., December–April”). Indeed, most migrating juvenile Chinook salmon, including nearly all juveniles of the winter-run and late-fall run, will not be protected by this bypass flow requirement as most of these fish have migrated downstream of Knights Landing before March. *See* Williams 2006; NMFS 2019 BiOp at 67-68, 83-84; Munsch et al. 2019 at Figure 3; RDEIR/SDEIS at 11-120.

In other words, mitigation measure FISH-2 will limit pumping that reduces flows in the Sacramento River below 10,700 cfs only *after* winter-run Chinook salmon have already migrated downstream to the Delta, and as a result this mitigation measure wholly fails to protect juvenile winter-run Chinook salmon from the harmful effects of the proposed project and alternatives as they migrate down the Sacramento River. The RDEIR/SDEIS’ conclusion that the proposed project and alternatives will not cause significant environmental impacts to winter-run Chinook salmon is arbitrary and capricious, and the document must be revised to include adequate mitigation measures that apply when winter-run Chinook salmon are migrating down the Sacramento River.



(ii) *The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon Caused by Reduced Flows in the Sacramento River Because it Misapplies Recent Scientific Studies*

Citing recent research demonstrating strong and positive flow-survival relationships for juvenile Chinook salmon, the RDEIR/SDEIS acknowledges that diversions to Sites Reservoir have the potential to reduce Sacramento River instream flows and survival of juvenile salmonids, including winter-run Chinook salmon (RDEIR/SDEIS at p. 11-119). The proposed project includes Mitigation Measure FISH-2.1 which would prevent project diversions from reducing Sacramento River flow below 10,712 cfs at Wilkins Slough during March, April, and May. Above this flow, survival of juvenile Chinook salmon studied by Michel et al. (2021) averaged just over 50 percent in a particular reach of the Sacramento River; below this threshold survival dropped dramatically to 18.9 percent in the same reach.

Michel et al. (2021) measured the effect of flow on survival for a subset of migrating Chinook salmon through a portion of their freshwater life cycle. They measured survival rates downstream of where egg-to-fry survival is measured and upstream of the lower Sacramento River and Delta, where additional mortality occurs; their study focused on juvenile Chinook salmon that are larger than 75mm long. To put their results in context, typical freshwater survival (from egg stage to the outmigrating smolt stage) for Chinook salmon across their range is approximately 10 percent (Quinn 2005; SEP 2019). In the Sacramento River, egg-to-fry survival between 2002 and 2018 averaged 24.4 percent for winter-run Chinook salmon and 13.7 percent for fall-run Chinook salmon (Voss and Poytress 2020). Thus, under current conditions, attaining species-typical survival rates for Chinook salmon is challenging in many years even if survival is 50 percent in the reach that contains Wilkins Slough. It is therefore essential to the viability of Sacramento River Chinook salmon runs that survival in this reach be maximized whenever possible.

However, the proposed flow threshold in this mitigation measure is inadequate to prevent significant impacts to Sacramento River Chinook salmon runs.

First, diversions that reduce Sacramento River flows to the proposed threshold may reduce survival of migrating juvenile Chinook salmon in the size class studied by Michel et al. (2021). Although this study found strong evidence of decreased survival at flows <10,712 cfs, very few observations were made for flows between 14,000 and 21,000 cfs (Figure 3); the effects of reducing flow on survival are less certain in this range and it is quite possible that survival benefits of flows above 10,712 cfs were not detected by Michel et al. (2021). The best available science (including Michel et al. 2015; Henderson et al. 2018; Michel 2019; Munsch et al. 2020; Notch et al. 2020) suggests that decreasing flows in this reach of the Sacramento River (by diverting water to Sites Reservoir) when flows are between 10,712 and approximately 20,000 cfs will reduce survival of Chinook salmon juveniles.

Second, the bypass flow requirement is based around the success of relatively large migrating juvenile Chinook salmon. Diverting flows above the proposed threshold may cause significant negative effects for the much larger portion of the juvenile Chinook salmon population that measures less than 75mm in fork length. Michel et al. (2021) used sonic tags to track survival and movements of the fish they studied; their flow results apply only to fish large enough to carry a sonic tag. Migration behavior and habitat use of juvenile salmon varies with size (Quinn 2005; Williams 2006), so it is highly likely that increasing flow rates benefit smaller fish in ways and at levels that differ from those detected among the large fish studied by Michel et al. (2021). In fact, several other recent studies have documented continuous increases in survival and abundance as Sacramento River flows increase (Michel 2019; Notch et al. 2020); similar continuous positive relationships have been found among Chinook salmon in the San Joaquin River and its tributaries (SEP 2019). Furthermore, Munsch et al. (2019) identified a Sacramento River flow threshold associated with high likelihood of detection of small juvenile Chinook salmon (“fry”; greater than 55mm) in the Delta; they also found that abundance of fry increased continuously with increasing flows. Therefore, it is likely that reducing Sacramento River flows in a range above ~10,712 cfs will reduce survival rates among a significant portion of migrating juvenile Chinook salmon.

Third, the proposed flow bypass mitigation allows no margin for error and is thus likely to result in frequent loss of real survival benefits ascribed to the greater than or equal to 10,712cfs flow threshold. The bypass requirement allows flows to be reduced to exactly the threshold identified by Michel et al. (2021), despite known levels of uncertainty around this parameter estimate. Whereas the benefit of flows above 10,712 cfs is believed to be all-or-nothing (i.e., it is a threshold), errors in estimating that threshold, measuring actual flows in the river, or changes in the threshold from year-to-year or among salmonid populations (e.g., spring-run v. fall-run) could lead to the elimination of all positive effects of this proposed mitigation. In fact, Michel et al. (2021) estimate uncertainty around their flow threshold (at p. 9, Figure 4), and, as with any ecological study, the results are drawn only from a limited number of real-world situations that may not fully characterize natural variability in the flow-survival relationship. As the RDEIR/SDEIS acknowledges (at 11-130): “There is some uncertainty in the modeled flow-survival effects and in the ability to limit potential effects with real-time operational adjustments.” These uncertainties must be factored into bypass flow mitigation by raising the threshold by a safety factor that accounts for environmental variability and measurement error.

In addition, the RDEIR/SDEIS’ analysis of riverine survival of salmon is flawed and fails to accurately assess environmental impacts because it does not model or analyze the effects of the proposed project and alternatives. First, the RDEIR/SDEIS’ analysis of the effects of reduced flows on salmon survival only considers the effects of water diversions on salmon survival in the Sacramento River between January 1 to May 31. *See* RDEIR/SDEIS at 11P-3. However, the vast majority of winter-run Chinook salmon have migrated past Red Bluff Diversion Dam (the upstream diversion point for Sites Reservoir) before January 1 in many years. *See id.* at 11-79 to 11-80. Thus, the analysis in the RDEIR/SDEIS ignores the effects of reduced flows caused by diversions for the proposed project and alternatives that affects the vast majority of winter-run

Chinook salmon, even though the proposed project and alternatives can divert water during these months. Second, the RDEIR/SDEIS' analysis of the effects of reduced flows on salmon survival includes operational restrictions (such as a prohibition on diversions when Delta outflow is less than 44,500 cfs during the months of March to May) that are more protective than, and not included in, the proposed project and alternatives. *Compare* RDEIR/SDEIS at 11P-2 to 11P-3 *with id.* at 2-31, 5A1-29 to 5A1-30, 5A2-28 to 5A2-33. Third, the RDEIR/SDEIS' analysis in Appendix 11P assumes that the proportion of salmon migrating down the Sacramento River on a daily basis is the same proportion that passed the Red Bluff sampling station, but acoustic tag data shows a wide variation in the speed of juvenile salmon migration between Red Bluff and Knights Landing (Klimley et al. 2017); without this assumption, the analysis shows significantly greater reductions in survival of juvenile salmon. *See* RDEIR/SDEIS at 11P-5. As a result of these flawed assumptions, the RDEIR/SDEIS fails to accurately analyze the effects of the proposed project and alternatives.

(iii) *The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon Caused by Reduced Flows in the Lower Sacramento River and Delta*

The RDEIR/SDEIS' analysis of the effects of the proposed project and alternatives on the survival of juvenile winter-run Chinook salmon through the lower Sacramento River and Delta also fails to accurately assess impacts and fails to disclose significant impacts from the proposed project and alternatives. As the RDEIR/SDEIS acknowledges, there is a strong flow:survival relationship in several reaches in the Delta, and reductions in instream flow results in reduced survival of juvenile salmon. Perry et al. 2018; *see* RDEIR/SDEIS at 11-123 to 11-124. The RDEIR/SDEIS claims that diversions to Sites Reservoir under the proposed project would result in small changes in survival of salmon migrating through the Delta. RDEIR/SDEIS at 11-124 to 11-125. However, this analysis is misleading to the public and decisionmakers, and it fails to disclose significant environmental impacts to winter-run Chinook salmon that would result.

First, because the RDEIR/SDEIS' modeled effects of the proposed project and alternatives on flows in the Sacramento River at Freeport is inaccurate (estimating smaller reductions in flow than would actually occur under the proposed project and alternatives), *see supra* Section V, the assessment of effects on survival of salmon through the Delta is likewise inaccurate, underestimating the adverse impacts to winter-run Chinook salmon that are likely to occur.

Second, the RDEIR/SDEIS analyzes the reductions in survival through the Delta using the Perry et al. 2018 model, averaged by month and water year type. RDEIR/SDEIS at 11-124. This analysis is misleading because it does not present the annual results – the effects of reduced survival over the course of the year for juvenile salmon that are migrating downstream. The RDEIR/SDEIS also shows that juvenile winter-run Chinook salmon survival through the Delta would be reduced by 1-2 percent under Alternative 1A, based on the IOS model. RDEIR/SDEIS at 11-129. In light of the status of the species, this constitutes a significant impact under CEQA that is not disclosed in the RDEIR/SDEIS.

Equally important, the effects of the proposed project in reducing survival of juvenile winter-run Chinook salmon migrating through the Delta can be far greater when Sites diverts more water from the Sacramento River than in an average water year, which is what is disclosed in Table 11-16. Unlike the analysis of riverine survival in the RDEIR/SDEIS, the analysis of through-Delta survival of salmon only evaluates effects using average water diversions from the Sacramento River by water year type. RDEIR/SDEIS at Table 11-16; id. at Table 11J-1. Annual water diversions by the proposed project and alternatives used in the RDEIR/SDEIS are approximately 344,000 acre feet in a Wet year and 354,000 acre feet in an Above Normal water year type. See RDEIR/SDEIS at Table 5B1-3-1c. Yet in wetter water years like 2017, Sites can divert more than 1 million acre feet of water under the proposed operating criteria. See Sites Reservoir Project, 2021 Water Estimate, May 28, 2021, at 8 (attached hereto as Exhibit 1). The RDEIR/SDEIS fails to analyze the effects of diversions greater than the average for that water year type, where the reductions in survival through the Delta are likely to be substantially higher as a result of greater reductions in flow at Freeport. See Perry et al. 2018; RDEIR/SDEIS at Fig. 11J-1. Reduced survival is the clear consequence of the flow: survival relationship and inadequate operational criteria that are proposed.

The RDEIR/SDEIS' analysis of the effects of the proposed project and alternatives on the survival of winter-run Chinook salmon through the Delta must be revised to incorporate accurate modeling of project operations and to disclose the higher reductions in survival that result in years with greater than average levels of water diversions.

(iv) *The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon*

Taken together, the RDEIR/SDEIS shows that the proposed project and alternatives will reduce the abundance of winter-run Chinook salmon, which are listed as endangered under CESA, and will cause winter-run Chinook salmon to drop further below self-sustaining levels. This constitutes a significant impact under CEQA. Cal. Code Regs., tit. 14, § 15065(a)(1).

The RDEIR/SDEIS finds, using the IOS life cycle model, that Alternative 1A causes an average 3 percent reduction in adult abundance (escapement) of winter-run Chinook salmon, as a result of Alternative 1A reducing juvenile survival through the Delta by 1-2 percent and reducing juvenile survival through the Sacramento River by 0-1 percent. RDEIR/SDEIS at 11-128 to 11-129. As described above, these are likely substantial underestimates of the project's impacts; however, even assuming for the sake of argument that they are accurate, in light of the fact that winter-run Chinook salmon are listed as endangered and their population is below self-sustaining levels, these additional reductions in survival and abundance are per se significant impacts requiring mitigation. Cal. Code Regs., tit. 14, § 15065(a)(1). The RDEIR/SDEIS must be revised to disclose this significant impact and to identify adequate mitigation measures that eliminate significant impacts.

(C) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Spring-Run Chinook Salmon and Fails to Disclose Significant Impacts of the Proposed Project

As with winter-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts of the proposed project and alternatives on spring-run Chinook salmon and fails to disclose significant impacts that are likely to occur under the proposed project and alternatives.

First, proposed mitigation measure FISH-2 fails to adequately protect spring-run Chinook salmon from the significant impacts of diversions by Sites Reservoir because substantial numbers of spring-run Chinook salmon would have already migrated down the Sacramento River and into the Delta each year before this mitigation measure would be implemented, resulting in substantial reductions in survival of these migrating juvenile salmon. Significant proportions of spring-run Chinook salmon generally migrate downstream of Hamilton City as early as December, and spring-run Chinook salmon are frequently found in the Delta (in both surveys and salvage) by March. RDEIR/SDEIS at 11-132 to 11-134; *id.*, Appendix 11A at 1-13 to 1-21; 2019 NMFS BiOp at 82-83. More than half (50 percent) of the spring-run Chinook salmon population in the Sacramento Basin migrated past the Knights Landing before March 1 in many years (including Brood Years 2015, 2014, 2012, 2010, 2007, 2005, and 2003). RDEIR/SDEIS, Appendix 11A at 1-15. None of the spring-run Chinook salmon that migrate to the Delta before March would be protected by mitigation measure FISH-2, meaning that in many years less than half of the population would be protected by the proposed mitigation measure. As a result, the proposed project and alternatives would cause significant impacts by reducing survival of these migrating salmon.

Second, the proposed flow threshold of 10,712 cfs used in Mitigation Measure FISH-2 is inadequate for the same reasons identified with respect to winter-run Chinook salmon. *See supra*. And as with winter-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts to riverine or Delta survival because it uses flawed CALSIM modeling that underestimates the reduction in flows into the Delta and fails to analyze impacts to riverine survival before January 1, despite the fact that significant numbers of spring-run Chinook salmon migrate past Red Bluff and even Hamilton City before that date. *Id.* Finally, because spring-run Chinook salmon populations are listed under CESA and are not currently viable, even small reductions in survival caused by the proposed project and alternatives that cause this population to fall further below self-reproducing levels constitute a significant impact under CEQA. Cal. Code Regs., tit. 14, § 15065(a)(1).

(D) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Fall-Run Chinook Salmon and Fails to Disclose Significant Impacts of the Proposed Project

Like the flawed analysis of impacts to winter-run and spring-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts of the proposed project and alternatives on fall-run Chinook salmon and fails to disclose significant impacts that would result.

First, a substantial proportion of the fall-run Chinook salmon population migrates down the Sacramento River by March 1, before mitigation measure FISH-2 limits diversions by the proposed project and alternatives. *See* RDEIR/SDEIS at 11-157 to 11-164, 11-189; *id.*, Appendix 11A at 1-22 to 1-30. For instance, according to the RDEIR/SDEIS more than half of the fall-run Chinook salmon population that migrates past Red Bluff does so before March 1 in most years. *Id.*, Appendix 11A at 1-22 (50 percent passage at Red Bluff Diversion Dam before March 1 for all Brood Years 2019, 2018, 2015, 2014, 2013, 2012, 2010-2004). Similarly, more than half of the run was estimated to have passed Knights Landing before March 1 in most years. *Id.*, Appendix 11A at 1-24 (Brood Years 2019, 2018, 2016, 2015, 2014, 2012-2003). And the RDEIR/SDEIS asserts that the majority of fall-run Chinook salmon are already in the Delta between January and May. *Id.* at 11-189. As a result, a significant proportion of the fall-run Chinook salmon population has already migrated downstream and is not protected by mitigation measure FISH-2, and the proposed project and alternatives would cause significant environmental impacts by reducing the survival of these juvenile salmon down the Sacramento River and through the Delta.

Second, the proposed flow threshold of 10,712 cfs in Mitigation Measure FISH-2 is inadequate for the same reasons identified with respect to winter-run Chinook salmon. *See supra*. And as with winter-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts to riverine or Delta survival because it uses flawed CALSIM modeling that underestimates the reduction in flows into the Delta and fails to analyze impacts to riverine survival before January 1, despite significant numbers of fall-run Chinook salmon migrating past Red Bluff Diversion Dam and even Hamilton City before that date. *Id.*

*(E) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Longfin Smelt and Fails to Disclose Significant Impacts of the Proposed Project*

The RDEIR/SDEIS ignores or underestimates potentially significant impacts to the San Francisco Estuary's Longfin Smelt population. Longfin Smelt are listed under CESA as a threatened species because they have experienced dramatic declines in abundance over several decades. Abundance of this population is strongly correlated with Delta outflow (Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; Kimmerer et al. 2009; Thomson et al. 2010; Mac Nally et al. 2010) as is juvenile recruitment/productivity (Nobriga and Rosenfield 2016) and distribution (Dege and Brown 2004; CDFG 2009; Lewis et al. 2019b). Entrainment-related mortality is positively correlated with exports, and negatively correlated with Delta outflows and prior abundance indices (CDFG 2009; Grimaldo et al. 2009; Rosenfield 2010).

*(i) The RDEIR/SDEIS Fails to Accurately Analyze Impacts from Entrainment*

The RDEIR/SDEIS ignores the likely significant impact of additional Longfin Smelt entrainment arising from the proposed project. Given its precarious conservation status, any increase in entrainment-related mortality is likely to threaten the viability of Longfin Smelt in the San Francisco Estuary. This is particularly true given that entrainment of Longfin Smelt has historically been highest when population numbers are low and environmental conditions lead to

low Longfin Smelt production (Rosenfield 2010). Despite these known patterns, the RDEIR/SDEIS inappropriately ignores increases in entrainment-related mortality that are likely to occur as a result of increased water exports and decreased Delta outflow. To the extent that Delta Smelt and Longfin Smelt are similar (both smelt have experienced significant declines, are pelagic swimmers, and spawn, at times, in the zone of influence of CVP and SWP export facilities), recent findings on the effects of entrainment-related mortality on Delta Smelt apply, in general, to Longfin Smelt. Smith et al. (2021) state:

In a population in which recruitment success rates cannot sustain the population, no additional mortality is sustainable . . . No additional mortality can be sustained by the population, but that does not mean that entrainment mortality of 0 will result in its recovery

Smith et al. 2021 at p. 14.

The existing CDFW conceptual model for Longfin Smelt life history finds that combined CVP/SWP exports is a significant predictor of combined CVP/SWP salvage of adult Longfin Smelt (Rosenfield 2010). Also, Delta outflow in January-March is significantly and negatively correlated with total annual Longfin Smelt entrainment (Rosenfield 2010 at Figure 9); salvage consists mostly of juvenile Longfin Smelt and occurs mainly during April-June (Grimaldo et al. 2009). This led CDFW to suggest that Delta outflow in the winter affects the distribution of Longfin Smelt and the subsequent juvenile cohort (CDFG 2009; Rosenfield 2010). Entrainment of larval Longfin Smelt (which is not measured at CVP/SWP fish salvage facilities) is believed to be positively correlated with X2 and increasingly negative values of Old and Middle River (OMR) flow. The RDEIR/SDEIS fails to estimate changes in entrainment to larval Longfin Smelt or to connect such changes in mortality to overall Longfin Smelt population dynamics.

The RDEIR/SDEIS fails to describe any safe level of Longfin Smelt entrainment, much less acceptable increases in that entrainment caused by the project – it simply categorizes negative directional changes in conditions that promote entrainment as “small.” Average X2 increases under all project alternatives – increasing the risk of entrainment for all life stages of Longfin Smelt (CDFG 2009; Rosenfield 2010) in every month from December-May of Critically Dry years when Longfin Smelt are at significant risk of entrainment mortality (Appendix 6B3: Tables 6b3-1-1c, 2c, 3c, and 4c). Because the X2 values reported are averages, it is extremely likely that some years will experience a greater shift of X2 towards the export pumps, resulting in greater entrainment risk to all Longfin Smelt life stages. The assertion that the modeled changes in X2 are “small” is arbitrary and capricious – relatively small changes in Delta outflow or X2 are all that is required to produce large changes in entrainment risk for Longfin Smelt (Rosenfield 2010).

Combined with increasing X2 (which places more Longfin Smelt at risk of entrainment), more negative OMR flows expected under the proposed project and alternatives increase the likelihood of Longfin Smelt entrainment at levels that would pose significant risk to the overall population.

Average OMR is projected to be more negative in December, March and April during Critically Dry years under all project alternatives (OMR is also more negative in January of Alternative 1A; Appendix 5B3, Tables 5B3-6-1c, 2c, 3c, and 4c) – more negative OMR is correlated to the logarithm of Longfin Smelt salvage meaning entrainment-related mortality increases very rapidly as OMR becomes more negative (Grimaldo et al. 2009). Dismissing persistent and directional negative effects on an imperiled species by asserting, without evidence, that they are “small” is arbitrary and capricious. For example, with respect to endangered salmonids, NMFS has repeatedly warned that “[s]mall reductions across multiple life stages can be sufficient to cause the extirpation of a population” and that a “1% to 2% mean reduction in survival is a notable reduction for an endangered species, especially if it occurs on a consistent (e.g., annual) basis” (NMFS 2017 at 736). Similarly, while commenting on Delta Smelt entrainment-related mortality, Kimmerer cautioned against dismissing small but persistent losses to fish productivity and stated that mortality related to export pumping “. . . can be simultaneously nearly undetectable in regression analysis, and devastating to the population. This also illustrates how inappropriate statistical significance is in deciding whether an effect is biologically relevant.” (Kimmerer 2011 at p. 7). Thus, conditions under the proposed project that facilitate increased entrainment-related mortality (increasing flow towards the export facilities, increased X2) may have a significant negative effect on Longfin Smelt population viability and the likelihood that this species will recover in the wild.

Entrainment of larval Longfin Smelt has never been effectively monitored, but we know that larval Longfin Smelt (a) are more abundant and weaker swimmers than juvenile or adult Longfin Smelt, (b) associate with the low salinity zone (Dege and Brown 2004; CDFG 2009; Hobbs et al. 2010) and are thus located closer to export facilities in drier years than in years with high Delta outflow, and (c) remain abundant into the late spring and early-summer, at least (as evidence by continued recruitment to the Bay Study’s nets well into the summer and fall; Rosenfield and Baxter 2007). Thus, it is likely that entrainment mortality of larval Longfin Smelt follows the same general pattern as entrainment of older life stages -- increasing with increasing X2 and export rates – and that larval entrainment-related mortality much larger than for juvenile and adults, in absolute and relative terms. Also, entrainment of Longfin Smelt larvae likely continues from January through spring and into early summer, as larval fish are abundant throughout this period. The RDEIR/SDEIS must be revised to analyze the effect of the proposed project on entrainment of larval Longfin Smelt and to link the effect of any changes in entrainment-related mortality to overall Longfin Smelt population dynamics.

(ii) *The RDEIR/SDEIS Fails to Adequately Analyze Impacts on Longfin Smelt Abundance*

The best available science indicates that reductions in Delta inflow and Delta outflow during the winter and spring months under the proposed project will result in decreased Longfin Smelt productivity and overall declines in abundance, which constitute a significant impact under CEQA. Longfin Smelt abundance indices are strongly correlated with Delta outflow (Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; CDFG 2009; Kimmerer et al. 2009;



Thomson et al. 2010, MacNally et al. 2010; Nobriga and Rosenfield 2016). The RDEIR/SDEIS analysis of Aquatic Biological Resources states: “Winter-spring diversions for Alternatives 1, 2, and 3 would reduce Delta inflow and Delta outflow.” RDEIR/SDEIS at 11-269. The best available science demonstrates that the proposed project and alternatives will have a negative effect on Longfin Smelt recruitment and overall abundance, constituting a significant impact under CEQA.

Longfin Smelt viability is already severely impaired by reduced abundance. Even maintenance of the population at current levels exposes the population to high risk; further persistent declines in abundance of this CESA-listed fish’s population that are projected under the proposed project would contribute significantly to the risk of Longfin Smelt extirpation from the San Francisco Estuary. Furthermore, the status quo for Longfin Smelt represents continued decline towards extinction. Maintenance of Delta outflows at levels permitted under the state’s CESA incidental take permit for operation of the State Water Project are expected to result in declines in abundance of the Longfin Smelt population (DWR 2020 Final EIR at p. 5-135, Tables 5.3-8 and 5.3-9) and even that level of decline assumes that Delta outflow will be augmented in April and May of certain years; however, April-May Delta outflow augmentation is not reasonably likely to occur and the biologically important outflow period is December to May (Nobriga and Rosenfield 2016), not March to May. For example, flows were not augmented in April 2021 as low Delta outflows violated D-1641 standards; the state also petitioned to waive Delta outflow requirements in February-April of 2022 despite acknowledging that reductions in Delta outflows below levels set in D-1641 will likely to harm the Longfin Smelt population (Reclamation and DWR 2021). Even prior to being weakened under the state CESA permit and waivers of Bay-Delta water quality control plan standards, status quo protections were demonstrably inadequate to protect Longfin Smelt; this is why the SWRCB (SWRCB 2010, 2017) previously concluded that Delta outflows need to increase in order to protect Longfin Smelt adequately. Thus, the proposed project anticipates degrading environmental conditions from a status quo that is already expected to cause Longfin Smelt population declines.

The RDEIR/SDEIS’s characterization of the proposed project’s effects on Longfin Smelt understate the true impact of reductions in Delta outflow on this population because it relies on erroneous interpretation and misrepresentation of different models of Longfin Smelt population biology. Furthermore, neither of the analyses of flow effects on Longfin Smelt abundance incorporates potential persistent increases in entrainment-related mortality of Longfin Smelt adults, larvae, or juveniles, described above. Rather, the RDEIR/SDEIS relies on historical relationships between flow and adult abundance, ignoring the likelihood that abundance for any given outflow may decline if entrainment mortality is higher than it has historically been.

Using a computer code that is intended to replicate a population model developed by Nobriga and Rosenfield (2016), the RDEIR/SDEIS concludes that there will be “small” negative effects on Longfin Smelt (RDEIR/SDEIS at 11-270) – these negative effects are visible in all year types (RDEIR/SDEIS Tables 11-69, 11-70; *see also* Table 11-70). However, the RDEIR/SDEIS’s implementation of Nobriga and Rosenfield’s (2016) population model and its interpretation of

model results are unjustified and invalid (the RDEIR/SDEIS references DWR's 2020 implementation and interpretation of the same model, which were similarly flawed and invalid; *see* Appendix A: Critique of CDWR's modeling of Longfin Smelt abundance and productivity under different operational alternatives for the SWP March 12, 2020 (attached hereto as Exhibit 2)). As a result, the RDEIR/SDEIS's assertion that the differences between project alternatives and no action alternatives are "uncertain" is without merit. Specifically, the RDEIR/SDEIS applies Nobriga and Rosenfield's (2016) model inappropriately – the original model was designed to evaluate different conceptual alternatives of Longfin Smelt population dynamics, not to predict or compare changes in population abundance under different water management regimes. Nobriga and Rosenfield (2016) found that Longfin Smelt juvenile recruitment was powerfully affected by changes in Delta outflow – and Delta outflow was the only abiotic variable that produced a significant effect. As a result, their model will show lower recruitment of Longfin Smelt for management alternatives that reduce Delta outflow – contrary to the RDEIR/SDEIS's implication, there is no uncertainty associated with this modeling result. The analysis in the body of the RDEIR/SDEIS obscures this certainty by inappropriately comparing all possible outcomes under different management alternatives rather than analyzing year-by-year pairwise differences between NAA and alternatives. In other words, the RDEIR/SDEIS confounds all the variability associated with the estuary's Longfin Smelt populations through time (including a 2-3 order of magnitude decline and that related to natural variation in Delta Outflow from year-to-year) with variation among operational alternatives that differ only in their annual winter-spring Delta outflow. For example, by categorizing years into year types (each of which includes great variation in Delta outflow, *see* Exhibit 2), the RDEIR/SDEIS mistakes natural variability that has nothing to do with project alternatives for "uncertainty" in the outcomes of these alternatives. As a result, RDEIR/SDEIS Figures 11-36 and 11-37 are not valid and are extremely misleading regarding the certainty of persistent negative effects on Longfin Smelt that should be expected from implementation of any of the project alternatives. By presenting the high variation in model estimates of Longfin Smelt abundance across years and across decades as if it represented uncertainty about outcomes under different alternatives, the RDEIR/SDEIS's presentation undermines the entire purpose of comparing alternatives, which is to contrast differences that arise from different water management operations rather than background variation that is not related to the alternatives. In a prior analysis of a version of the underlying code used in the RDEIR/SDEIS, we found that the Longfin Smelt population response to changing Delta outflow is disproportionately high; for example, a 5 percent reduction in Delta outflow produces a greater than 5 percent reduction in projected Longfin Smelt abundance (*see* Exhibit 2). Given that population size in one generation affects abundance in the next generation (Nobriga and Rosenfield 2016), these differences among alternatives would be expected to compound over time (until the system's carrying capacity is reached). To emphasize: Nobriga and Rosenfield (2016) demonstrated that Delta outflow was extremely well correlated, over 5 decades, with Longfin Smelt juvenile productivity – their model predicts that lower Delta Outflow as proposed under the proposed project and alternatives will result in lower Longfin Smelt productivity; the RDEIR/SDEIS's representation of that model and interpretation of its outputs are egregiously flawed and highly misleading.

The RDEIR/SDEIS also estimates changes in population abundance based on regressions between X2 and Longfin Smelt abundance. This estimate is very coarse and should be used to evaluate only the likely relative effects of project alternatives. This analysis reveals significant negative effects on Longfin Smelt abundance as a result of project alternatives in every year type; in fact, this analysis reveals that Longfin Smelt abundance under project alternative 1A will be lower relative to the NAA in over 70 percent of years analyzed in the RDEIR/SDEIS (Compare Appendix 11F Table 11F-7 to Table 11F-8). Here again, the RDEIR/SDEIS inappropriately treats mean abundance differences as though they are static, ignoring deviations from the reported mean difference in each year type (i.e., declines relative to the NAA will be greater in some years) which further increase the risk of irreparable harm to the population, and the compounding effect of abundance declines across multiple generations (Thomson et al. 2010; Nobriga and Rosenfield 2016). Furthermore, this regression approach assumes that Longfin Smelt abundance is a function of outflow alone – in this model, prior abundance plays no role in subsequent abundance. Thus, if this regression approach showed that the population was extirpated, it could magically resurrect the population in subsequent years with higher flows. This obviously underestimates and ignores the permanent harm that can arise from persistent degradation of environmental conditions on Longfin Smelt populations under the proposed project.

*(iii) The RDEIR/SDEIS's Proposed Mitigation Measures Fail to Reduce Impacts to Longfin Smelt to a Less than Significant Level*

The RDEIR/SDEIS claims to mitigate anticipated negative impacts to Longfin Smelt arising from reduced Delta outflow by requiring 11-13 acres of tidal habitat restoration (negative effects of increased entrainment on Longfin Smelt abundance are ignored). There is no credible evidence to support the RDEIR/SDEIS's claim that tidal habitat restoration (especially such a tiny acreage) will benefit this population or mitigate for the expected (and understated) negative effects of the proposed project. Because there is no known effect of tidal habitat restoration on Longfin Smelt abundance and even the presumed mechanisms are highly uncertain and poorly defined, there is no scientifically supported methodology for calculating the amount of such habitat required to mitigate for the proposed project's effects.

Despite significant tidal marsh habitat restoration in the Delta, the Napa estuary, and the South Bay, there is no evidence yet to demonstrate that these areas provide net benefits for the San Francisco Estuary's Longfin Smelt population (i.e., that they act as a "source" as opposed to a "sink"). Despite the restoration of several thousand acres of shallow tidal habitat that has occurred over the last several decades, Longfin Smelt abundance and productivity have not increased -- the flow-juvenile abundance relationship remains unchanged and survivorship from juveniles to adults has declined (Rosenfield and Baxter 2007; Nobriga and Rosenfield 2016). In fact, Longfin Smelt abundance has declined despite massive investment in shallow tidal habitat restoration.

Although recent research has documented Longfin Smelt occurrence in marshes outside of the Delta-Suisun Bay region (Lewis et al. 2019a), there is no direct evidence that Longfin Smelt detected in these areas contribute to the adult population. Results of a preliminary otolith chemistry “fingerprinting” study concluded, “. . . of the adult fish that were classified with moderate confidence (e.g., 75%), nearly all appeared to have reared in the northern [San Francisco Estuary] . . .” (Lewis et al. 2019b at p. 9 and Figures 17 and 18 at p. 75 of the PDF). Indeed, it is not clear that Longfin Smelt found in shallow tidal habitats downstream of Suisun Bay originated in those habitats or reproduce successfully as a result of those habitats. For example, although researchers have detected substantial numbers of Longfin Smelt west of Suisun Bay, this occurred primarily during the exceedingly wet years 2017 and 2019 (Lewis et al. 2019b) and even then it was not clear that the fish detected were produced in local marshes; Lewis et al. stated (2019b at p. 6) : “. . . it is valuable to consider whether, with high Delta outflows, it is feasible and probable that larval and juvenile Longfin Smelt found in high numbers in San Pablo Bay, and even Lower South San Francisco Bay, could have been transported from Delta and Suisun Bay spawning sites by currents, tides, and winds.” Although these same researchers caught pre-reproductive adult and larval Longfin Smelt in shallow tidal habitats downstream of Suisun Bay and the Delta, they were circumspect regarding the importance of spawning and rearing in these habitats, stating that their value “remains unknown.” (Lewis et al. 2019b at p. 2; see also at p. 6).

The notion that shallow tidal habitat restoration can mitigate declines in Longfin Smelt caused by reduced outflow is entirely speculative. Among other things, this concept presumes that larval production is limited by spawning and incubation habitat area; juvenile and adult Longfin Smelt are generally not found in shallow habitats (Rosenfield and Baxter 2007; Rosenfield 2010). The underlying hypothesis that the Longfin Smelt population is limited by production of larvae requires that the RDEIR/SDEIS demonstrate that (a) measurable numbers of additional larvae and juveniles will be produced by the required acres of shallow tidal habitat mitigation, and (b) this number of larvae and juveniles exceeds the significant decreases in Longfin Smelt production that can be expected as a result of reductions in Delta outflow. The RDEIR/SDEIS fails to make that comparison, at least in part because the benefit to Longfin Smelt of restoring a certain acreage of shallow tidal habitat is unknown, highly uncertain, and not currently estimable. Additionally, the RDEIR/SDEIS problematically calculates the proposed acreage of mitigation based on differential entrainment of Longfin Smelt expected under the project alternatives versus under the NAA. This is inappropriate and arbitrary because (a) the RDEIR/SDEIS has concluded (without evidence) that entrainment of Longfin Smelt under the proposed project and alternatives “would be similar to the NAA” (at p. 11-268), (b) because the methods used to identify significant reductions in Longfin Smelt abundance under the project do not account for impacts arising from increased entrainment that are additional to the flow impact being mitigated, and (c) because the mitigation calculation assumes (without evidence) some equivalence between acreage of tidal marsh restoration and acreage in which Longfin Smelt are affected by entrainment. Thus, the proposed mitigation calculation is without scientific support and is not relevant to the significant negative effect (reduced Longfin Smelt productivity resulting from reduced Delta outflow) that it is supposed to mitigate.

Far from being a substitute for the well-described negative effects of reduced Delta outflow on Longfin Smelt abundance and productivity, the benefits of restoring putative Longfin Smelt spawning and rearing habitats in shallow tidal environments are highly uncertain, if they have any beneficial effect at all (Lewis et al. 2019b at pp. 44-45 of PDF). Clearly, more research is needed to demonstrate what, if any, value restored shallow tidal habitats have for the Longfin Smelt population in this estuary. Until such research is completed, it will not be possible to determine (a) that constructing these habitats actually benefits the Longfin Smelt population, and if it is beneficial, (b) how much of this habitat is necessary to mitigate impacts of the proposed project. Furthermore, there is no evidence that we know how to “restore” tidal habitats such that they benefit rather than harm Longfin Smelt. Although some shallow habitats where Longfin Smelt are now detected have been the subject of marsh restoration efforts (e.g., the South Bay Salt Ponds), historical records suggest that these fish occurred in these areas prior to restoration (Rosenfield 2010). There is no evidence to assess whether fish in these “restored” habitats do better or worse following habitat restoration. Certainly, there is no evidence to support the RDEIR/SDEIS’s calculation of a precise acreage to mitigate for the persistent negative effects the proposed project is expected to have on Longfin Smelt abundance.

Finally, even if Longfin Smelt do reproduce and rear successfully in tidal habitats that have been restored, evidence suggests that any benefits will be limited to years when local stream flows and Delta outflows are high. Indeed, Lewis et al. (2019b at p. 6) write: (a) “It is unlikely that in dry, normal, or possibly even above normal years that such conditions would exist in each of these bay tributaries [west and south of the Carquinez Straights] sufficient enough to support substantial spawning and rearing. Thus in most years, the majority of suitable spawning and rearing habitats would likely occur in Suisun Bay/Marsh and the Delta,” and (at p. 11) (b) “. . . given the prevalence of drought conditions and limited outflows from the Napa River and Coyote Creek watersheds due to upstream catchment and diversion, suitable conditions for spawning appear to only occur in years of anomalously high precipitation.” This pattern suggests that even if it is effective, restoring shallow tidal habitats in these areas will only counter the proposed project’s negative effects during wetter years, whereas declines in Longfin Smelt abundance (and increases in Longfin Smelt entrainment) are expected in drier year types, when the population is at greatest risk. Furthermore, regardless of any mitigation that might occur as a result of the proposed habitat restoration, the benefits of this activity cannot possibly occur until the habitat is actually constructed and functioning. Tidal habitat restoration generally takes many years or decades to complete; therefore, under the very best scenario, negative effects of the proposed project will not be mitigated for several Longfin Smelt generations.

(F) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Delta Smelt and Fails to Disclose Significant Impacts of the Proposed Project

The RDEIR/SDEIS incorrectly concludes that the proposed project and alternatives would not cause significant adverse impacts on Delta Smelt, because it fails to analyze important aspects of

the problem and because it unlawfully assumes that changes less than 5 percent cannot constitute a significant impact.

First, the RDEIR/SDEIS ignores the effects of reductions in spring outflow on Delta Smelt recruitment. *See* Polansky et al. 2021; IEP MAST 2015. As Reclamation and DWR explained in the recent Temporary Urgency Change Petition submitted to the SWRCB,

Subsequent analysis in a peer review journal using a nonlinear state space model by Polansky et al. (2021) found statistical support for both a negative effect of March through May X2 and Export:Inflow (E:I) ratio on recruitment of delta smelt. Thus the most recent analysis from Polansky et al. (2021) suggests the TUCP could result in negative effects to delta smelt, based on higher March through May X2 under the TUCP and TUCP with DCC options (~88.3 km) and TUCP with Collinsville X2 option (~82.3 km) relative to the base case (~81.1 km).

Reclamation and DWR 2021. While the RDEIR/SDEIS discusses potential impacts of reduced Delta outflow on zooplankton, *see* RDEIR/SDEIS at 11-260 to 11-262, the document completely ignores Polansky et al. 2021 and the adverse impacts from reduced outflow on the recruitment and subsequent abundance of Delta Smelt.

Second, while the RDEIR/SDEIS acknowledges that diversions by the proposed project and alternatives could reduce abundance of zooplankton prey for Delta Smelt in the low salinity zone, it improperly concludes this would not be a significant impact because the changes in abundance of *P. forbesi* would be less than 5 percent. RDEIR/SDEIS at 11-260 to 11-261, 11-266. However, given the dire status of Delta Smelt, even a very small reduction in prey abundance could constitute a significant impact. *See* Cal. Code Regs., tit. 14, § 15065(a)(1). Moreover, in years when Sites Reservoir would divert more water and cause greater reductions in Delta outflow, there is likely to be greater reductions in Delta Smelt prey abundance as a result of the proposed project and alternatives.

Similarly, the RDEIR/SDEIS finds that diversions by the proposed project and alternatives could reduce sediment loading to the Delta by up to 5 percent. RDEIR/SDEIS at 11-265. Reduced turbidity would significantly harm Delta Smelt, but the RDEIR/SDEIS finds that this impact is less than significant, based on the magnitude of the change and potential mitigation measures. *Id.*; *see id.* at 11-266. However, even a small reduction in sediment supply that reduces turbidity in the Delta may be a significant impact given that could further reduce Delta Smelt below self-sustaining levels, Cal. Code Regs., tit. 14, § 15064(a)(1). Moreover, other agencies have previously concluded that any reduction in sediment supply to the Delta and San Francisco Bay should be considered a significant impact. *See* Bay Conservation and Development Commission, comments on the Bay-Delta Conservation Plan, July 29, 2014 (attached hereto as Exhibit 3). In addition, the potential mitigation measure unlawfully defers mitigation, because it does not describe specific performance metrics that would be used. *See id.*, Appendix 2D, at 2D-

46 (stating that performance criteria will be established in the future--analysis of sediment entrainment impacts is deferred until after “at least 5 years” of project operation, and implementation of sediment reintroduction is deferred another 5 years, for at least a decade of unmitigated operation). For comparison, Delta Smelt live only 1 year; so this mitigation will not be implemented for at least 10 generations of Delta Smelt. The failure to identify specific performance standards that the mitigation measure must achieve is unlawful. Cal. Code Regs., tit. 14, § 15126.4(a)(1)(B). In addition, the RDEIR/SDEIS fails to evaluate, let alone demonstrate, that such potential mitigation measures are feasible, particularly since prior analyses (by ICF for the California WaterFix project) found that the vast majority of entrained sediment could not be reused. The RDEIR/SDEIS must be revised and recirculated with: (1) an accurate analysis of impacts from sediment entrainment; (2) analysis of the feasibility of sediment mitigation measures; (3) specific mitigation measures and performance standards identified to ensure that impacts are reduced to a less than significant level; and (4) proposed monitoring to evaluate the implementation of mitigation measures and adaptively modify the measures as needed. Developing mitigation measures a decade after the impact is already occurring is unlawful and imposes unacceptable impacts on the multiple endangered species that depend on turbidity in the Estuary.

Finally, the RDEIR/SDEIS relies on an unlawful mitigation measure (FISH-8.1) to address potentially significant impacts to Delta Smelt from water released from Sites Reservoir, which does not describe specific performance criteria to avoid impacts but instead defers development of these performance criteria to a future process. RDEIR/SDEIS at 11-266 to 11-267 (“Dissolved oxygen and temperature criteria for determining effects will be developed in collaboration with the fishery agencies and will maintain existing DO and temperature levels suitable to delta smelt that will not exceed recognized critical physiological thresholds.”). The failure to identify specific performance criteria makes this mitigation measure unlawful. Cal. Code Regs., tit. 14, § 15126.4(a)(1)(B).

*(G) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Fish Below Golden Gate Dam and Sites Dam and Fails to Disclose Potentially Significant Impacts of the Proposed Project*

Flows required for maintaining fish in good condition below Golden Gate Dam and Sites Dam have not yet been identified or incorporated into the project design or mitigation measures. The lack of information on Funks Creek and Stone Corral Creek flow needs (fish assemblage, geomorphic flows, etc.) makes it impossible to understand and comment on the proposed project’s environmental impacts. Studies have yet to be conducted on basic hydrology and fish needs. RDEIR/SDEIS at 2-38. The RDEIR/SDEIS must be revised to include sufficient information so decision-makers can evaluate if stream ecosystem needs downstream of the reservoir can be met or will be degraded by the project design. Concerns that should be analyzed in a revised environmental document include:

- valve capacities of only 100 cfs (RDEIR/SDEIS at 2D-40), when Stone Corral Creek flows exceeding 500 cfs are common in wet years;
- effects of emergency releases of up to 2,500 cfs on Stone Corral Creek; and
- sediment and fish passage needs, which should be evaluated earlier than “prior to construction of dams” (hydrogeomorphic technical study described on RDEIR/SDEIS at 2D-42) so they can be incorporated into the project design.

We recommend using the tools and following the approach described in the California Environmental Flows Framework (CEFF; <https://ceff.ucdavis.edu/>) to conduct this analysis. Steps 1-10 of the Framework should inform the RDEIR/SDEIS, including “propose mitigation measures to offset impacts” as described in CEFF Step 10.

*(H) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Wetlands and Terrestrial Wildlife and Fails to Disclose Significant Impacts of the Proposed Project*

*(i) The RDEIR/SDEIS Fails to Adequately Analyze Impacts to Wetlands and Terrestrial Wildlife Because the Analysis is Based on Inaccurate Species Distribution Information*

The coarse and inaccurate description of the environmental setting with respect to vegetation, wetlands, and wildlife resources, discussed *supra*, undermines the RDEIR/SDEIS’s analysis of the proposed project’s impacts to these resources. Without an accurate understanding of where specific resources are located, which the RDEIR/SDEIS fails to provide, it is impossible to understand the nature and extent of the project’s impacts. Yet those impacts are likely to be profound, among other reasons because 33 special-status wildlife species are likely to occur in the study area. See RDEIR/SDEIS at 10-16.

The RDEIR/SDEIS suggests that the inaccurate assessment of impacts is acceptable for two reasons, neither of which is legally valid. First, the RDEIR/SDEIS suggests that, because detailed on-the-ground surveys will occur in the future, the lack of detailed and accurate information in the RDEIR/SDEIS is acceptable:

After land acquisition and prior to construction actions, the Authority would complete additional biological surveys to confirm mapped habitat types and the presence/absence of biological resources including, but not limited to, special-status species, state and federal waters, sensitive plant communities and other applicable resources identified as sensitive by state, and/or federal agencies and discussed in Chapter 9, Vegetation Resources; Chapter 10, Wildlife Resources; and Chapter 11, Aquatic Biological Resources, of this document. The Authority would use this information regarding occupied habitat to fulfill the permitting and consultation requirements of the federal and state resource agencies (USFWS, CDFW, U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board, and State Water Board).



RDEIR/SDEIS at 2-48. However, deferring this important analysis until after the NEPA and CEQA process fails to comport with the foundational informational purposes of those laws and deprives the public of a meaningful opportunity to understand the project's impacts and provide input. *See City of Agoura Hills*, 46 Cal.App.5th at 692-94. For example, the public cannot understand how the project will impact vernal pools and the wildlife they support and cannot suggest alternatives to reduce any impacts because the RDEIR/SDEIS fails to provide accurate information about the location of vernal pools in the project area.

Second, the RDEIR/SDEIS suggests the lack of accurate and detailed information about impacts to vegetation, wetlands, and wildlife is not a problem because the RDEIR/SDEIS overestimates the project's impacts. For example, with respect to special status species, the RDEIR/SDEIS claims that,

[i]n general, permanent and temporary impacts on potential habitat for special-status species are overestimated because surveys to assess habitat suitability of land cover types could not be conducted in the study area due to access limitations. Consequently, the entirety of the land cover is considered affected even when specific habitat requirements may be absent (e.g., elderberry shrubs, which are host plants for valley elderberry longhorn beetle, in riparian land cover types).

RDEIR/SDEIS at 10-29. Yet providing only an unrealistic overestimate of the project's impacts that is disconnected from reality fails to provide members of the public and decision makers with an accurate understanding of the project and leaves them unable to meaningfully assess alternatives that could reduce the project's impacts in violation of CEQA and NEPA.

(ii) *The RDEIR/SDEIS Fails to Adequately Analyze Impacts to Wetlands and Terrestrial Wildlife Because Key Information and Analysis is Missing*

The coarse and inaccurate description of the environmental setting and cursory impacts analysis makes it difficult to meaningfully comment on specific information gaps and flaws in the analysis. Nevertheless, it is clear that the impacts analysis suffers from several additional deficiencies.

First, the RDEIR/SDEIS fails to analyze impacts to wildlife that utilize Sacramento Valley wildlife refuges and private lands surrounding the refuges that are enrolled in U.S. Fish and Wildlife Service ("FWS") and Natural Resources Conservation Services ("NRCS") easement programs. The project area is in close proximity to units of the Sacramento National Wildlife Refuge Complex that are essential for migratory birds and other wildlife, including threatened and endangered species. Project construction and operation could impact wildlife that rely on the refuges, including impacts related to construction-related noise and traffic and addition of transmission lines that could impact migratory pathways. Yet the RDEIR/SDEIS does not appear to discuss how the project will impact wildlife that exist within and migrate to and from the refuges. Additionally, as we mentioned in our comments on the 2017 DEIR/DEIS for the project, there are USFWS and NRCS conservation easement lands in and surrounding the project

area that are important for migratory birds and other wildlife. Yet the RDEIR/SDEIS fails to identify these easement lands and does not discuss how the wildlife that depend on these important habitats will be impacted by project construction and operation.

Second, the RDEIR/SDEIS's discussion of impacts to particular species is exceedingly cursory and lacking in detail. For example, giant garter snakes are listed under both CESA and the ESA, and they are known to occur in several parts of the project area. Yet for construction impacts from Alternatives 1 and 3, the RDEIR/SDEIS dedicates only one exceedingly brief paragraph to giant garter snake impacts. RDEIR/SDEIS at 10-79. The description is vague and fails to provide basic information about where, when, and how the impacts are expected to occur. Without this basic information, it is not possible to understand the nature and extent of the project's impact, or to suggest alternative approaches that could reduce those impacts. The RDEIR/SDEIS also fails to discuss giant garter snake impacts in the context of FWS's 2017 Recovery Plan for the Giant Garter Snake. Parts of the project area fall with the Colusa Basin Recovery Unit, and the recovery plan describes specific recovery criteria for that unit. *See* Final GGS Recovery Plan at II-15 to 16. Yet the RDEIR/SDEIS does not describe how the proposed project could impede recovery efforts and does not explain how mitigation for giant garter snake impacts will advance the goals that the final recovery plan establishes. Impacts to other wildlife species are discussed in a similarly cursory manner and are lacking details that are essential for understanding and commenting on the project's impacts.

*(iii) The RDEIR/SDEIS Fails to Adequately Describe Measures to Completely Avoid Take of Fully Protected Species*

The RDEIR/SDEIS discusses likely project impacts to several State fully-protected species, including golden eagles and bald eagles. In its comments on the 2017 DEIR/DEIS, CDFW explained that “[t]ake of fully protected species is unlawful and subject to enforcement under the Fish and Game Code. The only way for a project to obtain incidental take authorization for any fully protected species is through the development of a Natural Community Conservation Plan (NCCP) (Fish and G. Code, § 2800 et seq.)” Accordingly, CDFW “recommend[ed] the DEIR/DEIS include a discussion of potential for take of fully protected species, and identify measures to completely avoid take of these species.”

However, for golden eagles and other fully-protected species, the RDEIR/SDEIS indicates that take may occur, and it fails to describe measures that will completely avoid take. For example, the RDEIR/SDEIS describes the potential for mortality of golden eagles, bald eagles, and white-tailed kite through electrocution or collision with new transmission lines but does not explain how the proposed mitigation measures would ensure complete avoidance of mortality or other forms of take. *See, e.g.*, RDEIR/SDEIS at 10-95 to 10-97. Take of fully protected 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.

*(iv) The RDEIR/SDEIS Fails to Propose Adequate Mitigation Measures for Significant Impacts to Wetlands and Terrestrial Wildlife*

The RDEIR/SDEIS makes clear that proposed project is likely to have significant, negative impacts on a substantial number of wildlife species, including golden eagles, bald eagles, Western pond turtles, and giant garter snakes, among many others. Because the impacts to these species are potentially significant, the SDEIR/SDEIS must describe feasible mitigation measures that could minimize the significant adverse impacts. CEQA Guidelines § 15126.4(a)(1). Generally, the formulation of mitigation measures may not be deferred until a later time. *Id.* § 15126.4(a)(1)(B). If an agency chooses to defer formulation of specific measures in a CEQA document, it must “commit itself to specific performance criteria for evaluating the efficacy of the measures implemented.” *POET, LLC v. California Air Res. Bd.*, 217 Cal. App. 4th 1214, 737-38 (2013). The mitigation measures described in the RDEIR/SDEIS fail to meet these standards and the document’s claims that significant impacts will be mitigated to a less-than-significant level are unsubstantiated.

First, the RDEIR/SDEIS impermissibly defers formulation of mitigation measures. This problem is created, at least in part, by the document’s failure to accurately describe the environmental setting and its relatedly inadequate analysis of impacts to vegetation, wetlands, and wildlife. In fact, for most wildlife species, the RDEIR/SDEIS includes analysis of the project’s impacts as a mitigation measure. *See, e.g.*, Mitigation Measure WILD-1.1, RDEIR/SDEIS at 10-37 (“Once property access is granted and prior to the start of construction, the Authority will retain qualified biologists to assess habitat suitability and conduct surveys for vernal pool branchiopods in the Project area . . .”). By impermissibly deferring the impacts analysis until the project’s mitigation phase, the RDEIR/SDEIS fails to include information about the nature and extent of impacts to vegetation, wetlands, and wildlife, which makes it impossible to describe how impacts will be mitigated with any particularity.

Second, proposed mitigation ratios seem inadequate to reduce the project’s impacts to a less-than-significant level. For example, the RDEIR/SDEIS appears to propose a 1:1 mitigation ratio for vernal pools. RDEIR/SDEIS at 9-47. For these rare and ecologically important wetlands, and in light of uncertainties surrounding the efficacy of vernal pool mitigation, this mitigation ratio seems substantially too low. Further, for occupied vernal pool branchiopod habitat, the RDEIR/SDEIS proposes a 2:1 mitigation ratio. RDEIR/SDEIS at 10-38. And “[f]or non-mitigation bank compensation, the performance standard for occupancy of the created/restored pools by listed vernal pool branchiopods is 5% of the total number of created/restored pools supporting listed vernal pool branchiopods over a 10-year monitoring period.” RDEIR/SDEIS at 10-39. A 2:1 mitigation ratio for vernal pools occupied by ESA-listed wildlife is too low at the outset, and setting a performance standard for occupancy of restored or created pools at only 5 percent is unreasonable.<sup>13</sup> With such a low mitigation ratio and low expectation of success with

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<sup>13</sup> Mitigation Measure WILD-1.3 is also confusing. It states that “[d]irect and indirect effects on occupied habitat will be mitigated by preserving occupied habitat at a 2:1 ratio (habitat preserved : habitat directly or indirectly affected) or by an equivalent or greater amount as determined during ESA Section 7 consultation with USFWS. In addition, direct effects on occupied habitat will be mitigated by creating or preserving occupied habitat at a 1:1 ratio (habitat created : habitat directly affected) or by an equivalent or greater amount as determined during ESA Section 7 consultation with USFWS.” RDEIR/SDEIS at 10-38. Does this mean that, for direct

respect to occupancy, this measure is inadequate to minimize a significant, adverse impacts. The same combination of unacceptably low mitigation ratios and low performance standards emerges for several other species. *See, e.g.*, RDEIR/SDEIS at 10-48 (Mitigation Measure WILD-1.8 includes a mitigation ratio for elderberry longhorn beetle habitat at 3:1 for riparian habitat and 1:1 for non-riparian habitat, and establishes a performance standard of 60 percent survival over a five-year period for initial elderberry and native associate plantings).

Third, some mitigation measures are so vague that it is unclear whether the protective measures will actually be implemented. For example, for giant garter snakes, the RDEIR/SDEIS states that,

[w]hen possible, all construction activity in suitable giant gartersnake aquatic habitat, and upland habitat within 200 feet of suitable aquatic habitat, will be conducted during the snake's active period (between May 1 and October 1). For work that cannot be conducted between May 1 and October 1, additional protective measures, such as installing exclusion fencing or additional biological monitoring, or other measures determined during consultation with USFWS and CDFW, will be implemented.

RDEIR/SDEIS at 10-80. What does "when possible" mean? Must construction occur during the active season so long as it is physically possible? Or can construction occur outside of the snake's active period to avoid additional costs or inconvenience, which would be problematic? For work that must occur during the snake's inactive season, a few examples of possible protective measures are mentioned, but formulation of a plan for minimizing impacts to this threatened species is improperly deferred until a later date.

*(I) The RDEIR/SDEIS Fails to Accurately Analyze Cumulative Impacts and Fails to Disclose that the Project Will Cause Cumulatively Significant Impacts*

Finally, the RDEIR/SDEIS fails to acknowledge that the impacts of the proposed project and alternatives are cumulatively significant. The RDEIR/SDEIS admits that despite requirements of the ESA and CESA, "the cumulative impact of past modifications and other past and present projects has contributed to the continuing decline in Central Valley and Delta fish populations and their habitats." RDEIR/SDEIS at 31-34. However, the RDEIR/SDEIS fails to conclude that "[t]his overall cumulative impact is significant," unlike DWR's final CEQA document for long term operations of the State Water Project which included the same sentence. *See* DWR, Final EIR, at 4-318 ("Despite these protections, the cumulative impact of past Delta modifications and other past and present projects has contributed to the continuing decline in Delta fish populations and habitat of protected species. This overall cumulative impact is significant.").

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effects on occupied habitat, the mitigation ratio is actually 3:1, with an opportunity for one acre of mitigation to occur through creation of occupied habitat?

Here, the RDEIR/SDEIS asserts that the proposed alternatives 1 and 3 “would not result in an incremental contribution to impacts on aquatic biological resources in the Sacramento River, its major tributaries and flood bypasses, and the Delta,” *id.* at 3-36, because the proposed project and alternatives would only cause small changes less than 2 percent, *see id.* at 3-38. However, as shown above the proposed project and alternatives, even with the proposed mitigation measures, would cause significant impacts, and these impacts would cumulatively also be significant. Moreover, given the dire status of native fish populations, particularly Delta Smelt, winter-run Chinook salmon, Longfin Smelt, and other species listed under CESA and/or the ESA, the proposed project’s contribution to cumulative impacts are likely to be significant.

For example, state and federal agencies have identified the need to significantly increase Delta outflow in the winter and spring months to prevent the extinction of Longfin Smelt, Delta Smelt, and other species (*see, e.g.*, the State Water Board’s 2010 Public Trust flows report, the State Water Board’s 2018 Framework), but the proposed project and alternatives would reduce Delta outflow in the winter and spring months. Even assuming for the sake of argument that these reductions in Delta outflow would not cause significant impacts from the proposed project by itself, the reduction in Delta outflow during these months would be cumulatively significant and the proposed project would make a considerable contribution to the reduction in Delta outflow. *See, e.g.*, RDEIR/SDEIS at Table 5B3-5-1a to Table 5B3-5-1c (showing that Alternative 1A would reduce Delta outflow in March of Above Normal years by more than 5 percent, from 23,170 cfs to 21,860 cfs).

The RDEIR/SDEIS must be revised to adequately address the cumulative impacts of the proposed project and alternatives.

## **VII. Recirculation of a Revised EIS/EIR is Required**

Because of the above-described deficiencies and because the RDEIR/SDEIS fails to disclose that the project and alternatives will cause significant environmental impacts and that the proposed mitigation measures are inadequate to reduce impacts to a less than significant level, recirculation of a revised RDEIR/SDEIS is legally required. *See, e.g., Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal.4th 412, 447-449 (2007).

## **VIII. Conclusion**

The RDEIR/SDEIS clearly fails to comply with the requirements of CEQA and NEPA. Among other flaws, it fails to consider a reasonable range of alternatives, fails to articulate a stable and accurate project description, fails to adequately account for climate change, fails to adequately analyze impacts to wide range of aquatic and terrestrial species, and fails to propose mitigation to reduce significant impacts to a less-than-significant level. For these reasons and because the RDEIR/SDEIS is riddled with significant errors, inadequacies, and omissions, the agencies must make substantial revisions to the document and recirculate the revised document for public review and comment.

Thank you for considering our comments.

Sincerely,



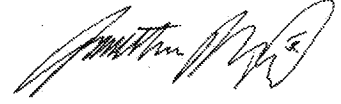
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Natural Resources Defense  
Council



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Rachel Zwillinger  
Defenders of Wildlife



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Jonathan Rosenfield  
San Francisco Baykeeper



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John McManus  
Golden State Salmon Association



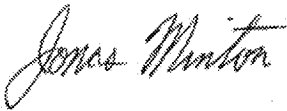
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Gary Bobker  
The Bay Institute



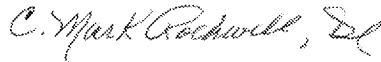
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Barbara Barrigan-Parrilla  
Restore the Delta



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Jonas Minton  
Planning and Conservation  
League



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Mark Rockwell  
Northern California Council  
Fly Fishers International



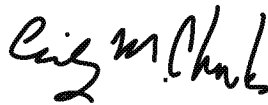
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Chris Shutes  
California Sportfishing Protection  
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Cindy Charles  
Golden West Women  
Flyfishers



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Mike Conroy  
Pacific Coast Federation of  
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# **CDWR’s modeling of the San Francisco Estuary Longfin Smelt population to evaluate new operational plans for the State Water Project and Central Valley Project: Critique**

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## **Introduction**

Longfin Smelt were once among the most abundant resident fish species in the San Francisco Bay Estuary (SFE). This population has experienced severe declines since sampling of the SFE’s pelagic fish assemblage began in the late 1960’s, including substantial declines in recent years. Other coastal populations of this species in California display low abundance and may have declined (CDFW 2009). Recent molecular evidence suggests that the SFE population may serve as a source of both genetic material and colonists for extant populations and unoccupied watersheds to the north (M. Finger. Personal communication, November 7, 2019). Thus, rapid reversal of declines in the SFE Longfin Smelt (LFS) population are important to the ecology of the SFE and may also be essential to the maintenance of this species throughout California.

Longfin Smelt are listed as a “threatened” species under the California Endangered Species Act. The SFE population of this species is “warranted but precluded” for federal listing. Given the well-established, strong, and persistent relationship between Delta outflow and Longfin Smelt abundance and productivity (Kimmerer 2002; Rosenfield and Baxter 2007. Kimmerer et al. 2009; Rosenfield 2010; Thomson 2010; Nobriga and Rosenfield 2016), current proposals to re-operate the Central Valley Project (2019 NMFS BiOp; 2019 USFWS BiOp; Reclamation 2019) and the State Water Project (CDWR 2019a,b) to increase exports and decrease Delta Outflow are likely to have a negative effect on the SFE Longfin Smelt population. Thus, CDFW needs tools that can help the Department evaluate the effects of Project operations on LFS viability.

## **Nobriga and Rosenfield’s population model**

Nobriga and Rosenfield (2016) developed a quantitative population model (N&R Model<sup>1</sup>) for the SFE LFS population. The purpose of this model was to “*evaluate alternative conceptual models of Longfin Smelt population dynamics to better understand the forces that may constrain the species’ productivity during different phases of its life cycle.*” (Nobriga and Rosenfield 2016 at p. 44). Contrasting variants of a generalizable population model were parameterized using data from IEP’s San Francisco Bay Study (Bay Study). These alternative models were evaluated for their ability to parsimoniously recreate historical LFS population dynamics, as reflected in the Fall Midwater Trawl (FWMT) time series. Results indicated that a

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<sup>1</sup> For clarity, I distinguish here between the research presented in Nobriga and Rosenfield (2016) versus the best-fit model variant (“2abc”) developed in that paper by referring to the latter as “N&R Model”. Furthermore, I distinguish between the N&R Model and the computer code intended to recreate that model -- developed by ICF and MWD -- by referring to the computer code as the “R-script”.

two-stage population model with density-dependent terms for both recruits-per-spawner and spawners-per-recruit was superior to other conceptual models of local population dynamics that they studied.

Consistent with existing conceptual models and statistical analyses (Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; Kimmerer et al. 2009; Rosenfield 2010; Thomson et al. 2010; Mac Nally et al. 2010), Nobriga and Rosenfield (2016) found that the effect of freshwater flow on relative abundance was statistically powerful and persistent – no other environmental variables contributed to the best-fit model. Nobriga and Rosenfield (2016) suggested that juvenile survival declined through the time series, but they could not demonstrate this conclusively or discriminate between a gradual, long-term decline in survival and a step-change in juvenile survival occurring in 1991.

#### Applying the N&R Model to compare outcomes among management alternatives

The N&R model was not designed or intended to be a predictive model of LFS population response to alternative management regimes. However, the model can be adapted to compare the relative impact of different management scenarios going forward. Properly applied, the N&R model can estimate (1) the relative differences in expected abundance among alternative operational scenarios; (2) the relative frequency of population growth under those scenarios; and (3) the relative frequency of quasi-extinction (a measure of extreme conservation risk) across scenarios. Also, certain aspects of the model that were of little consequence to Nobriga and Rosenfield's (2016) investigation could have important effects on model predictions in the context of comparing flow scenarios – the justification for these features should be investigated (see footnote 5, below).

#### Comparing outcomes from different management alternatives with the N&R model

Analyses of the outputs of the N&R model (or any quantitative model) must be valid and rigorous, especially when those outputs are used to evaluate proposed management alternatives. The use of the N&R model to compare alternative operational scenarios requires a different approach to analysis of model outputs than Nobriga and Rosenfield (2016) applied during their screening of conceptual models of LFS population biology. Because the N&R model was not designed to be predictive (in fact, it is known to under-estimate FMWT abundance indices; Nobriga and Rosenfield 2016), model outputs should be used for comparative purposes, to understand the relative difference between treatments. In this case, the appropriate basis for statistical comparisons are *differences* between alternatives *within* model runs (i.e., a paired analysis). By definition, sources of variance that are not related to Delta flow (e.g., randomization of model parameters or time trends that are not related to operational alternatives) should not affect the predicted *differences* among operational alternatives that only change Delta outflow. Consideration of non-flow sources of variance is not appropriate for evaluating the magnitude of differences among operational alternatives. Thus, even though the N&R model generates high variances in abundance indices under each operational alternative within model runs, this variance is of little consequence to the comparison between alternative

operational scenarios. On the other hand, the model’s predictions regarding the effect of changes to Delta outflow are expected to be highly consistent, all other non-flow related parameters being equal.

#### ICF/MWD R-script version of the N&R Model

In 2018, ICF International and Metropolitan Water District developed a version of the N&R model coded in R (the “R-script”; ICF/MWD, July 2, 2018). The R-script was originally developed to analyze the effects of the CA WaterFix project. Several other variants of this model exist, including one that formed the basis of DWR’s 2018 CESA ITP application (CDWR 2018); another that produced results found in DWR’s 2019 CESA ITP application (CDWR 2019a), and one used to support the CEQA analysis of proposed SWP re-operation alternatives (CDWR 2019c)<sup>2</sup>. Some of these variants compare LFS population dynamics under alternative flow regimes that include historical Net Delta Outflow Index (NDOI), NDOI  $\pm$ 10%, NDOI  $\pm$ 5%, and NDOI + SWP exports (i.e., elimination of SWP exports). I had access to a variant of the R-script that performed this kind of comparison and I asked Dr. Levi Lewis, from UC Davis, to determine how it calculated and presented outputs.

#### Results from the R-Script: Recruits-per-Spawner and Relative Abundance

The R-script compares alternatives based on modeled median outcomes of each operational alternative within hydrological year-types. Comparing the predicted median RPS or median predicted abundance index under different flow alternatives is statistically questionable as is comparing those results within water-year type. The median is not a stable metric in this context; it likely represents a single year in each replicate and in each alternative\*year-type combination. This single year may vary across replicates and alternative\*year-type combinations, so comparing medians across alternatives does not necessarily provide a valid comparison of expected population performance in any given year. Also, the median is intended to reflect the central tendency (“average” or “typical” value) of a population. But, median abundance does not represent a “typical” result when the population is known to be declining. The SFE LFS population has declined by orders of magnitude over the past several decades and is very responsive to Delta outflows, which are highly variable; there is no “typical” RPS or abundance in this situation, the median depends on the starting value, the length of the period studied, and the sequence of Delta hydrologies.

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<sup>2</sup> I have not been able to identify metadata that would indicate which of these model variants is the most recent and what, if any, differences exist among the variants. The Bay Institute attempted to run the DWR variant of the R-script unsuccessfully (B. Bennett, personal communication). TBI contacted one of the model’s authors (C. Phylliss) for assistance and received some modifications to the code in mid-June 2019. TBI passed this model revision to me but it still did not function until small modifications were made to (a) fix a miss-specified selection and (b) source all of the function scripts directly; (Levi Lewis, personal communication, December 2019). I make no claim that this version of the R-script is identical to other variants; however, like the original R-script, it does appear to recreate some of Nobriga and Rosenfield’s (2016) results. Model results presented here are intended to illustrate general patterns among operational variants and presentation flaws (which appear common to all the variants I have seen) that indicate invalid statistical comparisons.

Furthermore, it is not appropriate statistically to compare medians (or differences between medians) to estimates of variance around the mean (e.g., standard error); the ITP makes this mistake (CDFW 2019a e.g., footnote 2 of Table 4-10 at p. 4-59<sup>3</sup>), as do all the previous applications of the ICF/MWD R-script that I have reviewed. This error is particularly misleading when medians and mean values are widely divergent, as they are in the case of the R-script's projections of LFS abundance (Figure 1). If the median values are much smaller than the mean values (as they are in this case), then dividing the median by the error around the mean will erroneously suggest that the difference in medians is "small" relative to the variance (see, for example, CDWR 2019a e.g., at p. 4-57).

Not only does the ITP (and other applications of the R-script) compare the wrong estimate of differences between alternatives to the wrong estimate of variance, the R-script grossly overestimates this variance by incorporating sources of variability that are not relevant to the comparison of operational alternatives (e.g., CDWR 2019a e.g., at p. 4-57). The R-script does not appear to track the differences in predicted recruits-per spawner (RPS) or abundance indices among model variants *within* model runs (randomized replicates). Instead, the R-script lumps together the results for each alternative across model runs (replicates) for all years in a water-year type. This conflates several sources of variance, including that associated with variation in flow (which is very large, even within water year types, Figure 2), randomization of non-flow related parameters (e.g., density dependence), and the orders-of-magnitude historical decline in the LFS population. Variance due to these sources is not related to that caused by *differences* among flow alternatives and it is inappropriate to imply that differences among the alternatives are small because the variance in model outputs is artificially high.

The R-script displays modelled outputs using pre-set graphics (i.e., the graphics are part of the script). These graphics are extraordinarily misleading. The graphics produced in the ITP and ICF/MWD (2018) illustrate the underlying flaw in the way that the R-script estimates variance for the alternatives and compares the alternatives. For example, we know from Table 4-10 of the ITP (also Table 4-12) that decreases in Delta outflow under the proposed project lead to consistent decreases in median abundance; yet, the decline is difficult to see because it is compared to an estimate of variance that has nothing to do with the *differences* between alternatives (Figure 3)<sup>4</sup>. I was not able to make the R-script run a paired comparison of alternatives, but I was able to determine the relative size of the differences predicted among alternatives considered by this R-script variant.

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<sup>3</sup> The approach described in the table footnote is inappropriate, in general. In particular, the decision to divide "by the Existing 95% confidence interval" is ambiguous, arbitrary, and misleading. The 95% confidence interval is roughly twice as large as the denominator value used in a t-test and other standard statistics (i.e., 1 standard deviation), so, use of the "95% confidence interval" has the effect of making the difference in medians seem even "smaller" compared to the variance.

Scaling the differences among alternatives in water-year median recruitment as a percentage change from median recruitment under the “NDOI” scenario allows one to see the relative magnitude of the effect of different alternatives; this is the essence of what it means to compare alternatives. When the erroneous error estimates described above are removed from the graphics, the R-script output reveals that the operational alternatives will produce large proportional changes in recruitment (Figure 4, bottom panel). In fact, the proportional changes in recruitment are larger than the proportional changes in flow represented by the operational alternatives (Figure 5). In other words, the population response to changing Delta outflow is disproportionately high. The precise median values generated by the R-script are unimportant in this context (and, as described above, the median is a suspect metric); what is relevant is that median recruitment is higher than the status quo under alternatives with higher Delta outflows (NDOI + 5%, NDOI +10%, and NDOI + SWP) and lower than the status quo in alternatives with lower flows. Predicted increases in median recruitment under the NDOI + SWP alternative (Net Delta Outflow equals actual NDOI for a given year plus SWP exports that year) as compared to NDOI alone were 9%, 36%, 25%, 30%, and 34% in wet<sup>5</sup>, above normal, below normal, dry, and

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<sup>5</sup> The lower percentage increase related to adding flows in wet years is counterintuitive and may not be justified. Where the R-script predicts counter-intuitive or largely unprecedented outcomes, the proper approach is to investigate what model attributes drive those outcomes and then explore the basis for those elements. Here, the counterintuitive predictions are likely linked to assumptions underlying two functions in the N&R model; these same two functions are likely responsible for Nobriga and Rosenfield’s findings that their model was (a) “too strongly density dependent” and (b) underpredicted the historical FMWT time series. In the context of evaluating supplementing Delta outflows during very wet years, the strength of assumptions underlying these functions should be investigated.

- (1) Both the N&R model/R-script assume a “Ricker” density dependence function – this is a very strong form of density dependence. Nobriga and Rosenfield (2016) did not explore different forms of the density dependent function (e.g., Beverton-Holt) because (a) finding the best representation of density-dependence was not necessary to their research and (b) there were not sufficient data to discriminate among density-dependent functions. The Ricker term in the N&R model may artificially reduce the difference between flow alternatives when LFS abundance is relatively high, as it is following wet years – i.e., the Ricker term is an equalizer, but there is not sufficient evidence to know whether this degree of density dependence occurs in nature.
- (2) The N&R model describes the relationship between recruits-per-spawner (RPS) and Delta outflow as a quadratic equation -- this causes RPS to decline at extremely high Delta outflows (Figure 6). As a result, the model sometimes predicts declines in abundance during very wet years and declines for operational alternatives that increase Delta outflows in very wet years (e.g., in 2017). But empirical data reveal high variance of RPS at high flows and the decision to use a quadratic RPS-flow relationship (as opposed to a linear relationship, for example) is driven by only one year in the data set (1983; Figure 6, lower panel). Again, Nobriga and Rosenfield (2016) could not investigate the best shape of the RPS-flow relationship because of limited data under very high flow conditions. Correcting or at least describing this function (e.g., by bounding it with results of a sensitivity analysis) will improve understanding of how the population behaves under different flow scenarios.

Across a vast range of flows, the N&R model identifies large population-level benefits to increasing outflow; these results are consistent with empirical observations (i.e., the actual data from various fish population monitoring programs). If further investigation reveals that the two features of the N&R model identified above are justified, such that the R-script predicts declines in LFS abundance when additional flows are added to already very high Delta outflows (e.g., NDOI+SWP in a year like 2017), then DFW should consider this specific finding as it evaluates SWP and CVP operations *in years with very high outflows*.



critical year types, respectively. Given that population size in one generation affects population size in the next generation (Nobriga and Rosenfield 2016), these differences among alternatives would be expected to compound over time (until the system's carrying capacity is reached).

#### Results from the R-script: Quasi-Extinction

The difference in extinction probabilities across flow management alternatives has obvious relevance for evaluating the effects of alternative operational scenarios on LFS conservation status. The R-script attempts to compare alternative futures by assessing the rate of LFS quasi-extinction using the N&R model. This is an entirely different exercise than Nobriga and Rosenfield (2016) presented; they used quasi-extinction only to assess the ability of different models to recreate a known data series. The question CDWR asks the R-script to explore (how often is population abundance expected to drop below a level of extreme concern, aka "quasi-extinction"?) requires a different approach to the quasi-extinction frequency metric. For example, the "seed" value employed in the R-script is many times higher than recent index values for LFS. Because it overestimates the starting population, the R-script will tend to underestimate quasi-extinction frequency. This may generate the erroneous impression that the current LFS population is not at grave risk of extinction. Also, Nobriga and Rosenfield (2016) defined quasi-extinction as  $FMWT_{LFSindex} = 1$  because they wanted to evaluate model stability. But, the R-script is trying to evaluate conservation status of the LFS population, so higher thresholds of quasi-extinction thresholds ( $FMWT > 1$ ) are warranted. Using a quasi-extinction threshold value that is relevant to DFW's management responsibilities will result in higher rates of predicted quasi-extinction.

As with the evaluation of predicted future abundance under different operational alternatives, the key comparison of interest in this case is the *relative difference* in quasi-extinction rates among scenarios. Regardless of adjustments to model seed or quasi-extinction threshold values, the R-script is only capable of describing *relative differences* in the frequency of extinction. ICF/MWD (2018) compares the proportional frequency of quasi-extinction under various flow alternatives rather than presenting the *difference* in quasi-extinction rates among alternatives. Again, in order to compare differences in the relative likelihood of extinction (or quasi-extinction), a paired analysis must be employed.

Performing a valid analysis of quasi-extinction probabilities across management scenarios will require adjustments to the R-script described in this appendix and to its quasi-extinction tracker, in particular. To be clear, recent analysis by The Bay Institute confirms that the probability of extirpation of the SFE LFS population is extremely high (see attachment to NRDC 2020), even absent the additional adverse impacts of proposed SWP.

Despite these problems with the ICF/MWD analysis of quasi-extinction it is possible to illustrate the proper application of the modeled quasi-extinction rate. I compared the R-script's quasi-extinction estimate for each operational alternative to the "background" quasi-extinction rate represented by the NDOI scenario. The results indicate that quasi-extinction rates are ~11%

higher in the “NDOI minus 5%” flow scenario (Figure 5). This is a large increase to the probability of extinction, which is already very high.

### **Summary**

The major analytical issues identified above notwithstanding, the R-script analyses available to me at this time reveals that the flow scenarios under consideration generate substantial differences in LFS productivity (RPS), abundance, and rates of quasi-extinction. In general, scenarios with lower Delta outflows, such as those considered in CDWR 2019a and 2019c, result in lower RPS, lower recruitment, and higher probability of extinction. Modeling reveals that the effect of changing flows produces a disproportionate response in recruitment of Longfin Smelt. This outcome is not surprising because Delta outflow is the only environmental variable that corresponds strongly to LFS population dynamics (Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; CDFG 2010; Mac Nally 2010; Thomson 2010; Nobriga and Rosenfield 2016) and Delta outflow is the only environmental variable that warranted inclusion in Nobriga and Rosenfield’s (2016) best fit model (the N&R Model).

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## Figures

### Mean vs Median Predicted Age0

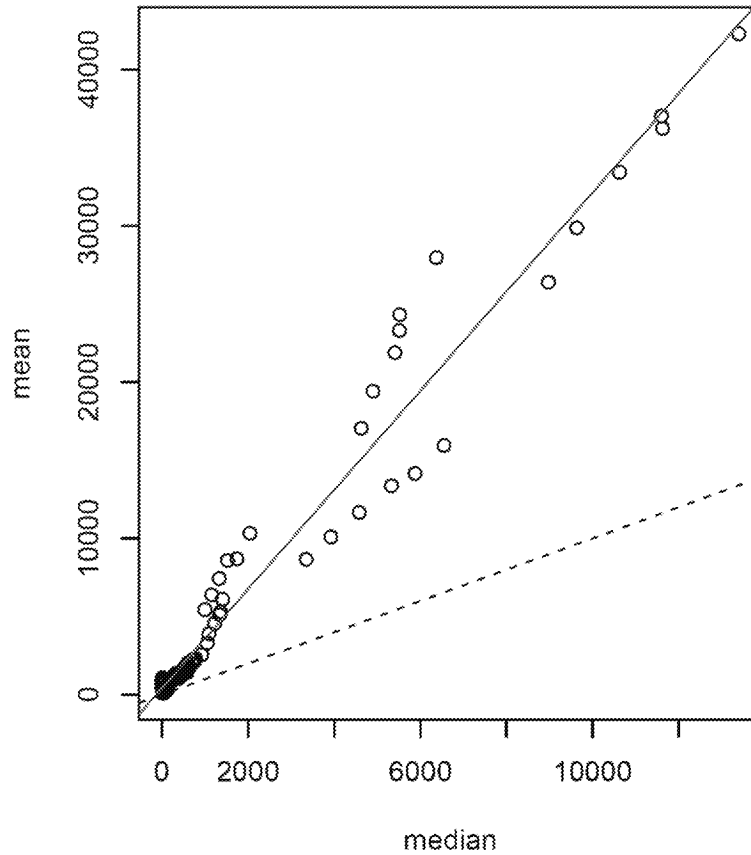
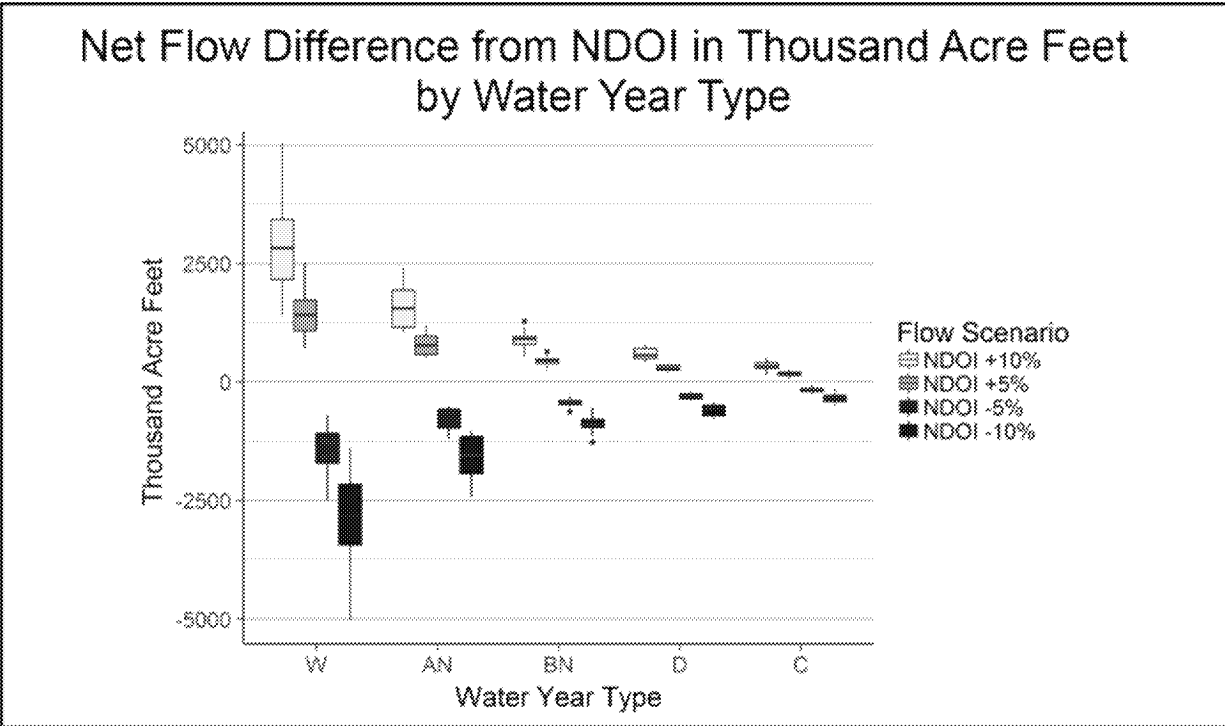


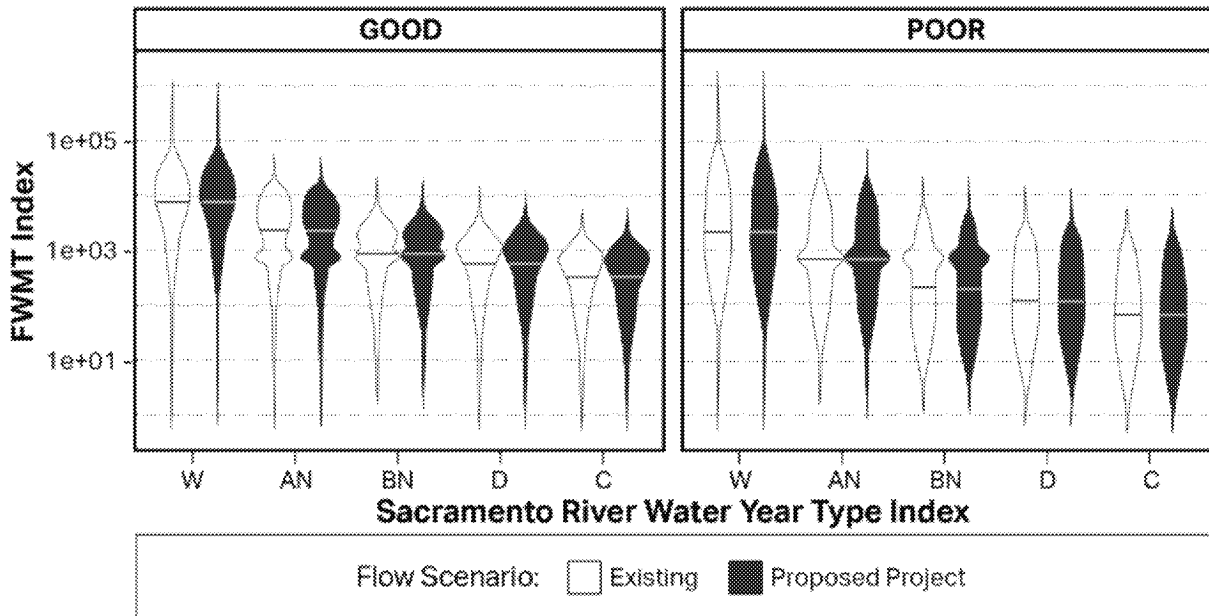
Figure 1: Median versus mean predicted Age 0 Longfin Smelt abundance as projected by the ICF/MWD 2018 R-script. The red-line is the best fit relationship between median and mean values; the dashed line represents a 1-to-1 correspondence between the two types of average. Note that mean values modelled by the R-script are many times larger than corresponding median projections.



**Figure 4-5. Box Plot Summary of Net Total December-May Delta Outflow Difference Between the NDOI Scenario and the Remaining Scenarios By Water Year Type**

Figure 2: Differences in total December-May Delta outflow across different water year types and under different operational scenarios (colors of the boxes) as compared to NDOI (the status quo), which equals 0 on the y-axis, as modelled by CDWR (2018). Boxes and whiskers represent different boundaries on the variability of outflow in different water-year\*operational scenario combinations. Note that outflow in wetter year-types is much more variable than in drier year types; variability of outflows within year-types contributes to high variability in LFS recruitment modeled by the ICF/MWD R-script. Copied from CDWR 2018 Figure 4-5 at p. 6.

**Longfin Smelt Index by Water Year Type  
Survival Scenario:**



Note: Median is indicated by the horizontal line.  
FWMT = Fall Midwater Trawl

**Figure 4-54. Violin Plots of Predicted Longfin Smelt Fall Midwater Trawl Index by Water Year Type**

Figure 3: CDWR’s portrayal of modelled differences in Longfin Smelt FMWT index values between existing and proposed operational alternatives for the SWP relative to modelled variance in those predictions. The consistent decline in predicted Longfin Smelt abundance under the proposed project versus existing conditions is obscured because medians (horizontal lines within the violin shapes) are inappropriately plotted in the context of total variance in predicted index values. Note that, viewed on this scale presented by the R-script, even doubling recruitment (for example) might be called a “small” change – but such a conclusion would be erroneous. Copied from CDWR 2019a Figure 4-54 at p. 4-58.

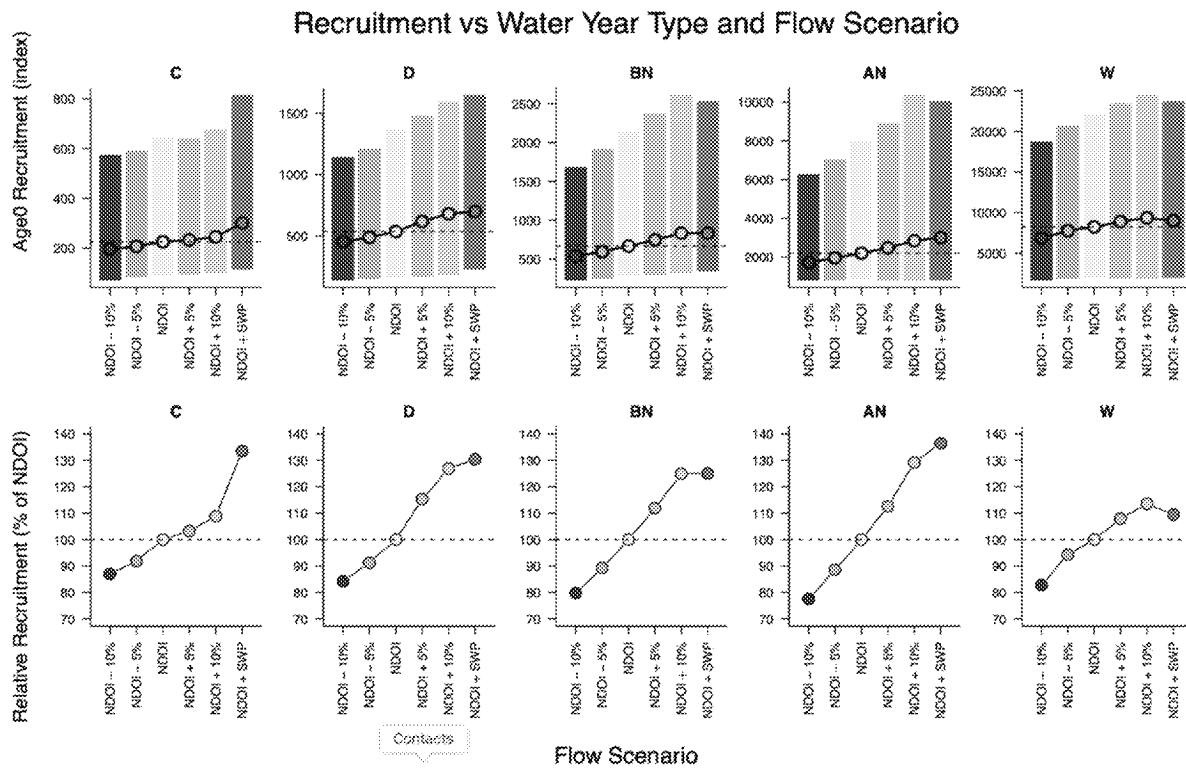


Figure 4: Longfin Smelt recruitment estimated by the ICF/MWD (2018) R-script for different water year types (C=Critically Dry; D=Dry; BN= Below Normal; AN=Above Normal; W=Wet) and operational scenarios (NDOI = net Delta outflow as it occurred in particular years). Top panel shows the median (circles) and variance across all model runs (colored bars) for each combination of year-type and operational scenario. Bottom panel shows the medians as a percentage of the NDOI scenario (status quo) – circles above the dashed line show higher median LFS recruitment than NDOI; circles below the dashed line show reduced LFS recruitment as compared to the status quo.



## Recruitment vs Water Year Type and Flow Scenario

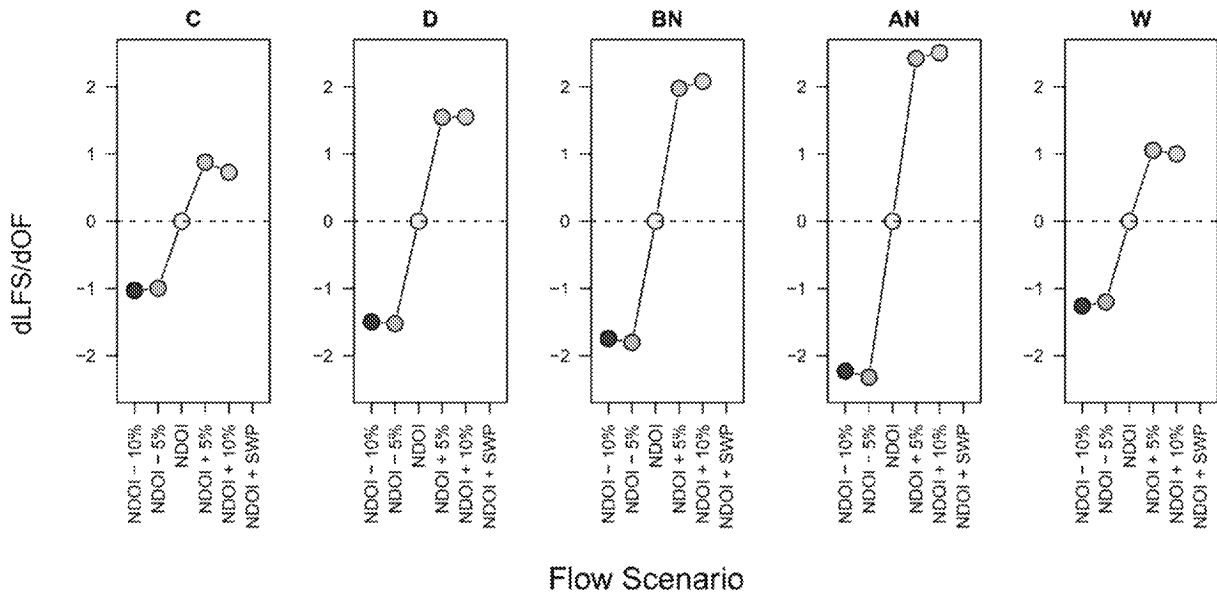


Figure 5: Relative change in Longfin Smelt recruitment (as predicted by the ICF/MWD 2018 R-script) under different operational scenarios. Scores reflect the percentage change in LFS recruitment (see figure 4) divided by the percentage change in the Net Delta Outflow Index for each scenario. Results are presented by water-year type. The status quo scenario (NDOI) is set to zero on the y-axis (i.e., it is the baseline). Values above the horizontal dashed line indicate positive changes in Longfin Smelt recruitment under a given scenario. Y-axis values greater than 1 indicate that the projected percentage change in Longfin Smelt recruitment under a given scenario was greater than the percentage change in flow under that scenario. (Values for the NDOI + SWP scenario are not shown because NDOI+SWP does not represent a consistent change in proportional outflow).

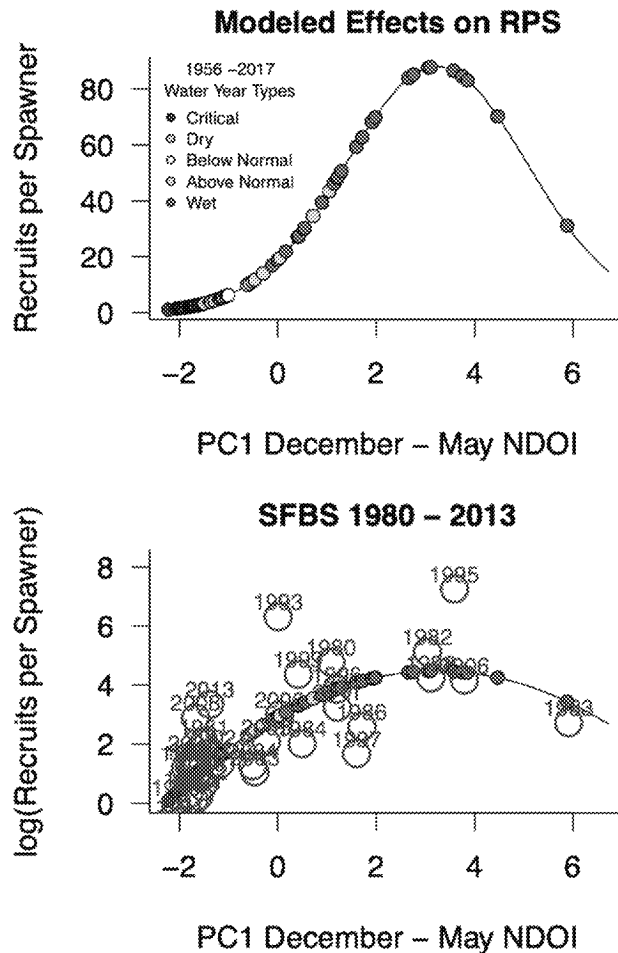


Figure 6: (referenced in footnote 5 of this appendix). Response of Longfin Smelt recruits per spawner (RPS) as a function of December through May NDOI, as modelled in the R-script (top panel) and as seen in actual data (open circles in the bottom panel). In years with the highest winter-spring outflows, the model forces a decline in RPS (top panel). When scenarios that add or subtract flow from NDOI are considered, scenarios that add Delta flows in very wet years (e.g., 1983, 2017) force the model to reduce Recruits-per-Spawner. However, this modeled decline in productivity is supported only by results in one year (1983). Nobriga and Rosenfield (2016) did not explore other forms of the RPS-flow relationship because they were evaluating conceptual models by their ability to recreate historic patterns in LFS abundance; they were not using the model to predict future outcomes of different operational scenarios.

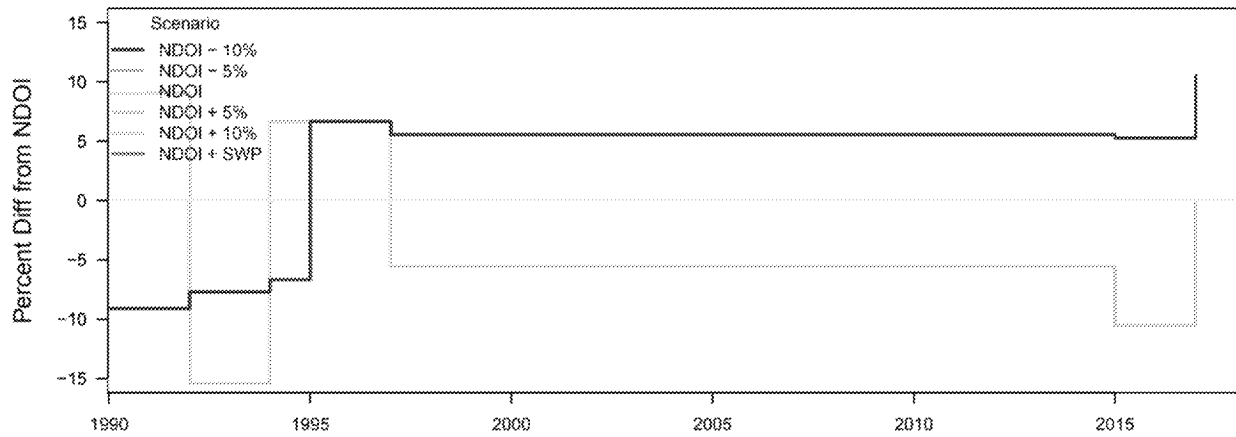


Figure 7: Percentage difference in the cumulative quasi-extinction of 100 replicates during modelled years 1990-2017, as estimated by the ICF/MWD (2018) R-script under different flow scenarios. Because the R-script is not designed to predict *actual* extinction events, but may be able to portray *relative* frequency of quasi-extinction, cumulative quasi-extinction events in each scenario are expressed relative to the NDOI baseline scenario (yellow line). Negative numbers indicate that cumulatively fewer model runs ended in quasi-extinction for a given scenario than for the baseline scenario, in the year indicated. This example is provided only to illustrate the appropriate use and comparison of quasi-extinction events among scenarios. More model runs ended in quasi-extinction in the lower outflow scenarios (after ~1995) compared to the status quo; by the last year of the scenario, quasi-extinctions occurred in ~11% more model runs under the NDOI-minus-10% outflow scenario than under the baseline scenario.

**File Provided Natively**

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**From:** Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Sent:** 1/31/2022 9:25:03 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]  
**Subject:** FW: Sites Project EIS/EIR comments  
**Attachments:** SitesProjectEIR\_OEHHACommentsLetterhead\_final.pdf

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**From:** Stanton, Rebecca@OEHHA <Rebecca.Stanton@oehha.ca.gov>  
**Sent:** Monday, January 31, 2022 9:09 AM  
**To:** Fisher, Linda <Linda.Fisher@hdrinc.com>  
**Cc:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites Project EIS/EIR comments

Thanks for following up and considering my comments. The un-signed PDF is attached. Let me know if that is sufficient.

Thanks  
Becky Stanton  
MS teams phone # 1-279-895-5927  
[Rebecca.stanton@oehha.ca.gov](mailto:Rebecca.stanton@oehha.ca.gov)

---

**From:** Fisher, Linda <Linda.Fisher@hdrinc.com>  
**Sent:** Monday, January 31, 2022 9:05 AM  
**To:** Stanton, Rebecca@OEHHA <Rebecca.Stanton@oehha.ca.gov>  
**Cc:** Laurie Warner Herson <laurie.warner.herson@phenixenv.com>  
**Subject:** RE: Sites Project EIS/EIR comments

EXTERNAL:

Hi Becky,

We received your comment letter on Friday, Jan. 28<sup>th</sup>. It appears that the pdf is password protected. Would it be possible to send us an unprotected pdf? We are compiling comments as part of the development of the Final EIR/EIS and we are unable to save and combine the protected pdf.

Thank you, Linda Fisher

Linda Fisher, M.S.  
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---

**From:** Stanton, Rebecca@OEHHA <Rebecca.Stanton@oehha.ca.gov>  
**Sent:** Friday, January 28, 2022 8:12 AM  
**To:** [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)  
**Cc:** Klasing, Susan@OEHHA <Susan.Klasing@oehha.ca.gov>; Murphy, Shannon@OEHHA <Shannon.Murphy@oehha.ca.gov>; VanDyke, Marisa@Waterboards <Marisa.VanDyke@waterboards.ca.gov>; Nilson, Carly@Waterboards <carly.nilson@waterboards.ca.gov>; Rinde, Jenna@Wildlife <Jenna.Rinde@Wildlife.ca.gov>  
**Subject:** Sites Project EIS/EIR comments

Please see attached comments on the Sites Project EIS/EIR.

Thanks

Beckye

Beckye Stanton, Ph.D. [*she/her*]

Staff Toxicologist

Fish, Ecotoxicology, and Water Section

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[Rebecca.stanton@oehha.ca.gov](mailto:Rebecca.stanton@oehha.ca.gov)

<https://oehha.ca.gov/risk-assessment/harmful-algal-blooms-habs>

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Gavin Newsom, Governor  
Jared Blumenfeld, Secretary for Environmental Protection  
Lauren Zeise, Ph.D., Director

January 28, 2022

Sites Project Authority  
P.O. Box 517  
Maxwell, CA 95955

Dear Alicia Forsythe:

Please see below comments submitted by Office of Environmental Health Hazard Assessment's (OEHHA) Fish, Ecotoxicology, and Water Section on the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the Sites Reservoir project.

#### Scope of review

- OEHHA's review focused on potential freshwater (cyanobacterial) harmful algal blooms (HABs). OEHHA's Fish, Ecotoxicology, and Water Section staff contribute time and expertise to HABs statewide through the California Cyanobacterial and HAB (CCHAB) Network and the Interagency HAB-related Illness Workgroup as well as other regional and interstate technical efforts.

#### Comments:

##### *Chapter 2: Project Description and Alternatives*

- *Section 2.5.2.4. Operations and Management Plans*
  - o We recommend that Recreation and Reservoir Management Plans explicitly include the following:
    - Monitoring for both planktonic and benthic HABs including: (1) frequent visual assessments (such as weekly year-round) and (2) sampling for cyanobacteria and cyanotoxins (such as every two weeks during recreational season and monthly during winter) as well as any time year-round when visual indicators of HABs are present, with samples collected from shore at shoreline recreational sites and in open water areas likely used for boating or fishing.
    - Actions necessary to address potential HAB-related human and animal impacts such as through posting general awareness or potential advisory signage for HABs at recreational areas,

education on Healthy Water Habits, and the use of personal protective equipment (as needed) for Reservoir personnel.

#### Chapter 6: Surface Water Quality

- *Section 6.2.2.3. Nutrients, Organic Carbon, and Dissolved Oxygen*
  - o The text states, “*The initial filling of a new reservoir results in the release of nutrients from newly flooded soil and decomposing flooded vegetation. This release declines somewhat as the reservoir ages (Gunnison et al., 1984; Maavara et al., 2020:108).*”
    - This influx of nutrients into water that is being held in a reservoir, where increased light availability, reduced flow, and increased temperatures are likely, may overall enhance opportunities for HABs to occur.
- *Section 6.2.2.6. Harmful Algal Blooms*
  - o The description of environmental factors that influence HABs does not account for the wide variety of planktonic and benthic cyanobacteria that can occur in California waters. While many planktonic species do favor the temperature, light, and flow conditions noted, there are planktonic (such as *Planktothrix*) and benthic taxa (such as *Microcoleus*, *Phormidium*, and *Anabaena*) that occur in lower water temperatures, lower light, or higher flow than noted (see Section 3.3; ITRC 2021).
  - o The description of cyanobacteria focuses on characteristics related to planktonic cyanobacteria, particularly *Microcystis*. As noted above, numerous planktonic and benthic cyanobacteria may occur, including some that grow attached to benthic substrates, aquatic plants, and natural or artificial structures within the water column as well as some that are present in sub-surface layers with lake stratification. This variety should be addressed when considering potential HAB occurrence and necessary monitoring, management, and public health actions.
  - o We recommend noting that OEHHA has developed Notification Level Recommendations for Four Cyanotoxins in Drinking Water as well (<https://oehha.ca.gov/water/cnr/notice-availability-notification-level-recommendations-four-cyanotoxins-drinking-water>).
- *Section 6.3.2.2. Temporal Shift*
  - o The temporal shift between time of diversion and time of release could also contribute to release of water with a higher likelihood of HABs.
- *Section 6.3.2.8. Harmful Algal Blooms*
  - o It is unclear how the likelihood of HABs occurring within Sites Reservoir during operations is assessed based on the information presented in this section. Please provide more rationale for what the comparison of intake and water surface elevations is expected to show. As noted above,



- cyanobacteria and cyanotoxins can be found in deeper sub-surface waters depending on type, genus, water conditions, etc.
- See Section 9.1 Optimizing The Location And Depth For The Offtake (Chorus and Welker, 2021; Chapter 9) for context of vertical distribution and consideration of discharge depth. This variability is also shown with real-time profiling to a maximum of 75-90 meters in Detroit Lake, a drinking water source for Salem, Oregon ([https://or.water.usgs.gov/projs\\_dir/habs/lakeprofiler.html?site=444306122144600](https://or.water.usgs.gov/projs_dir/habs/lakeprofiler.html?site=444306122144600)). Department of Water Resources' Pacheco Pumping Plant monitoring data also provides a useful example of monitoring for HABs at depth for water intake management (<http://cdec4gov.water.ca.gov/dynamicapp/QueryF?s=PPP>).
  - *Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation*
    - The discussion about cyanotoxin degradation is primarily applicable for extracellular cyanotoxins, while most cyanotoxins (with the exception of cylindrospermopsin) are primarily intracellular while the cell is intact. As shown with the Klamath River, long-distance transport of cyanobacterial cells and intracellular cyanotoxin can occur following planktonic HABs in reservoirs (Otten et al., 2015). As far as the statement about dilution of discharges, these are living organisms that grow, reproduce, can act as source population, and for some taxa, change their buoyancy, not chemicals that can equally distribute within the water column.
    - As noted above, occurrence of HABs with elevated cyanotoxins (including Danger advisory levels) have occurred in California water bodies during winter (see, [https://mywaterquality.ca.gov/habs/where/freshwater\\_events.html](https://mywaterquality.ca.gov/habs/where/freshwater_events.html)) and cells/toxins may occur in deeper waters.
    - Native and invasive aquatic plants can compete with cyanobacteria for light and nutrients. Actions to address aquatic plants should consider potential to alter conditions for cyanobacterial blooms as well.
    - In addition to HAB advisory signage (when warranted), ongoing outreach efforts about potential HABs through general awareness signage and other communication media (e.g., social media, newsletters) would be helpful in increasing public awareness and potentially reducing HAB exposure.
    - As noted above, some cyanobacteria taxa bloom in sub-surface layers during water body stratification and can then move to the surface with water body turnover.
    - Cyanobacterial cells can senesce and die-off with associated drop in dissolved oxygen at times other than late fall. There can be a seasonal succession as different taxa become dominant (Nwosu et al., 2021).

- As noted above, some cyanobacteria taxa grow in water at cooler temperatures (including under ice) so, the 66°F minimum noted is not applicable across all water bodies and all cyanobacteria taxa.
- Potential transport of cyanobacterial cells or cyanotoxins in aerosols and human nasal exposure as shown in Florida (Schaefer et al., 2020) could extend potential HAB impacts beyond the reservoir.
- As noted above, response of cyanobacteria to water flow increases are specific to type (planktonic or benthic) and taxa of cyanobacteria. In addition, increased flow could flush cyanobacteria cells into downstream areas where potential impacts could occur.
- The HAB portal incident map only provides voluntarily reported HABs. Absence of reported HABs from Yolo Bypass to that map should not be interpreted as a lack of HAB occurrence. Direct contact with CDFW Wildlife Area or Yolo Basin Foundation staff about observations or monitoring for HABs would be potentially helpful in clarifying this.

*Chapter 27, Public Health and Environmental Hazards*

- *Sections 27.2.3.2 and 27.3.4, Harmful Algal Blooms*
  - As noted above, the environmental conditions identified for HABs do not address the variety of cyanobacterial types and taxa found in California water bodies that could occur in the future reservoir.
- *Impact HAZ-7: Result in an impact on public health due to an increase in harmful algal blooms*
  - Water depth, dilution, and toxin degradation may not be sufficient to prevent discharge of cyanobacteria and cyanotoxins given changes in buoyancy or presence of benthic cyanobacteria, the potential to act as a seed population, and the presence of more stable intracellular toxin (as well as other factors noted above).
  - We recommend that the recreational HAB monitoring plan include HAB monitoring year-round although the frequency could be reduced (such as changing from bi-weekly to monthly) for the winter period. Monitoring should consider the potential for benthic cyanobacteria, which may not be detected with surface water grab samples. Identification of cyanobacteria taxa present by microscopy can inform what toxins may be produced, and also help understand the overall dynamics in the system, such as cyanobacterial succession over time.
  - Real time monitoring for cyanobacteria at multiple depths from which water may be released has been successfully implemented at other West Coast reservoirs  
[https://or.water.usgs.gov/projs\\_dir/habs/lakeprofiler.html?site=444306122144600](https://or.water.usgs.gov/projs_dir/habs/lakeprofiler.html?site=444306122144600); <http://cdec4gov.water.ca.gov/dynamicapp/QueryF?s=PPP>). The assumption that the release of deeper water is sufficient to prevent

discharge of cyanobacteria and cyanotoxins is inconsistent with data from these other locations and published research on potential cyanobacterial occurrence at depth (see Section 9.1 Optimizing The Location And Depth For The Offtake in Chorus and Welker, 2021).

- Given our experience with HABs and HAB-related human and animal illnesses at other California reservoirs, it is unclear that the proposed monitoring and management actions are sufficient to prevent potential human or animal impacts from HABs. We recommend that potential HAB occurrence across a much broader range of environmental conditions and deeper water depths should be considered. A more robust monitoring and outreach program for HABs should be incorporated for any reservoir recreational use. Assessment of cyanobacteria and cyanotoxins at the appropriate water depths prior to discharge (or via ongoing real-time instrumentation data) would allow for more informed evaluation of potential downstream impacts.
- *Impact HAZ-8* mentions potential impacts to Reservoir personnel from mosquitos, but those staff are not identified in the evaluation of potential HAB impacts under HAZ-7. We recommend you consider potential occupational exposure to cyanobacteria/cyanotoxins for Reservoir personnel with direct water contact as well as those working nearby that could be exposed to HAB-related aerosols. HAB outreach and education, appropriate personal protective equipment (when needed), and advisory signage should be provided to Reservoir personnel, in addition to the recreating public.

#### References Cited:

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<https://doi.org/10.1016/j.hal.2020.101769>

Sincerely,

Beckye Stanton  
Staff Toxicologist

cc: Marisa Van Dyke and Carly Nilson  
FHAB Program co-leads  
State Water Resources Control Board

Jenna Rinde  
HAB coordinator  
California Department of Fish and Wildlife

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 1/31/2022 10:17:27 AM  
**To:** EIR-EIS-Comments [eir-eis-comments@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Fisher, Linda [linda.fisher@hdrinc.com]; Williams, Nicole [Nicole.Williams@icf.com]  
**Subject:** FW: EPA Comments on Sites Reservoir SDEIS 28 January 2022  
**Attachments:** EPA Comments on the Sites Reservoir SDEIS 1.28.2022\_signed.pdf

It looks like they sent these on Friday to Reclamation.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Project Authority | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Morgan, Joseph <Morgan.Joseph@epa.gov>  
**Sent:** Monday, January 31, 2022 10:15 AM  
**To:** Lisa Gibson (Lisa.M.Gibson2@usace.army.mil) <Lisa.M.Gibson2@usace.army.mil>; stephen.maurano <Stephen.Maurano@noaa.gov>; evan.sawyer@noaa.gov; Riddle, Diane@Waterboards <Diane.Riddle@waterboards.ca.gov>; Foresman, Erin@Waterboards <Erin.Foresman@Waterboards.ca.gov>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Cc:** Gordon, Stephanie (Skophammer) <GORDON.STEPHANIES@EPA.GOV>  
**Subject:** FW: EPA Comments on Sites Reservoir SDEIS 28 January 2022

Hello – please see the attached EPA comment letter on the Sites Reservoir SDEIS, sent last Friday. Please feel free to contact me with any questions – Stephanie Gordon will be returning to EPA on February 14<sup>th</sup>.

Cheers,  
Joe

--  
Joseph A. Morgan  
NEPA Reviewer  
Environmental Review Branch (on detail from Wetlands Section)  
Tribal, Intergovernmental, and Policy Division  
Environmental Protection Agency Region 9  
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**From:** Morgan, Joseph  
**Sent:** Friday, January 28, 2022 2:45 PM  
**To:** [EIR-EIS-Comments@SitesProject.org](mailto:EIR-EIS-Comments@SitesProject.org)

**Cc:** Dekar, Melissa D <[mdekar@usbr.gov](mailto:mdekar@usbr.gov)>; King, Vanessa M <[vking@usbr.gov](mailto:vking@usbr.gov)>

**Subject:** EPA Comments on Sites Reservoir SDEIS 28 January 2022

Hello,

Please see attached for the EPA's comments on the Sites Reservoir RDEIR/SDEIS. Please feel free to contact me with any questions.

Sincerely,  
Joe Morgan

--

Joseph A. Morgan  
NEPA Reviewer  
Environmental Review Branch (on detail from Wetlands Section)  
Tribal, Intergovernmental, and Policy Division  
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

January 28<sup>th</sup>, 2022

Ernest Conant  
Regional Director  
U.S. Bureau of Reclamation  
California-Great Basin Office  
2800 Cottage Way  
Sacramento, California 95825-1898

Subject: Supplemental Draft Environmental Impact Statement/Recirculated Draft Environmental Impact Report for the Sites Reservoir Project, Glenn and Colusa Counties, CA (EIS No. 20210172)

Dear Ernest Conant:

The U.S. Environmental Protection Agency has reviewed the Sites Reservoir Project Supplemental Draft Environmental Impact Statement (SDEIS) pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. The EPA is a cooperating agency for this SDEIS and provided comments on chapters of the Administrative SDEIS on April 21<sup>st</sup> and May 28<sup>th</sup>, 2021.

According to the SDEIS, the Sites Project Authority has modified their proposal to construct and operate a new off-stream surface storage reservoir ten miles west of Maxwell, California, and the Bureau of Reclamation continues to participate in the development of the project to consider the environmental impacts of coordinating the use of federal facilities that would be used to supply water to the reservoir. Reclamation is also examining the possibility of investing in Sites reservoir storage up to 25% to improve operational flexibility of the Central Valley Project (CVP). The EPA recognizes the need for improved water management in California and welcomes the opportunity to assist Reclamation in ensuring that federal decision making concerning new water storage facilities appropriately considers environmental impacts associated with siting, design, construction, and operation of such facilities.

The EPA has identified several topics or resource areas in the SDEIS that would benefit from additional information or analysis in the Final EIS, including project operations, scope of analysis, climate impacts and greenhouse gas emissions, impacts to streams and wetlands, sediment management, and surface water quality. We have enclosed detailed comments and recommendations on these and other resource topics, and we have included a brief summary below. Please note that because the SDEIS does not identify Reclamation's Preferred Alternative, our comments apply to all alternatives.

The EPA is concerned about the approach to project operations in the SDEIS, which have not yet been finalized but are critical to understanding the environmental impacts of Sites Reservoir. Operations are modeled using historical hydrology data that may not reflect current and future conditions, and diversion criteria are based on regulatory requirements that are currently being revised. While important components of the originally proposed project have been altered, none of these project changes explain why the Trinity River and lower Klamath basin were excluded from the scope of analysis. Finally, the

SDEIS uses a 2035 scenario for analysis of potential climate impacts; however, the project would not begin operating until at least 2030, making the 2035 scenario unhelpful to the analysis for operations.

Sufficient information on wetlands and other aquatic resources to support permitting under Section 404 of the Clean Water Act is not included in the SDEIS, and appropriate testing procedures and plans for sediment management and beneficial reuse have not been specified. The EPA has additional concerns about the effects of Sites Reservoir on water quality. The SDEIS identifies substantial adverse effects that can be expected from mercury methylation in the proposed reservoir; the EPA is concerned that this impact could disproportionately affect tribal and subsistence fishing communities. The SDEIS finds that evapoconcentration of aluminum, copper, and iron would likely contribute to exceedance of water quality objectives to protect aquatic life. The SDEIS also acknowledges that conditions in the proposed reservoir would be conducive to the formation of harmful algal blooms, but the EPA has concerns that the analysis presented may mischaracterize the likelihood and severity of blooms. Furthermore, the EPA believes that the proposed mitigation measures to manage these water quality concerns would not be effective and, in many cases, would conflict with each other. Finally, we have concerns about the modeling approach and presentation of results assessing the effects of Sites Reservoir operations and CVP exchanges on temperature-dependent mortality of listed fish species, including Chinook salmon.

EPA appreciates the opportunity to review this SDEIS. When the Final EIS is released for public review, please send one copy to the address above (mail code: TIP-2). If you have any questions, please contact me at 415-947-4167, or contact Joe Morgan, the lead reviewer for this project, at 415-972-3309 or [morgan.joseph@epa.gov](mailto:morgan.joseph@epa.gov).

Sincerely,

**JEAN  
PRIJATEL**

Jean Prijatel  
Manager, Environmental Review Branch

Digitally signed by JEAN  
PRIJATEL  
Date: 2022.01.28 14:36:38  
-08'00'

Enclosure: EPA's Detailed Comments

cc: Melissa Dekar, U.S. Bureau of Reclamation  
Vanessa King, U.S. Bureau of Reclamation  
Lisa Gibson, U.S. Army Corps of Engineers  
Stephen Maurano, NOAA Fisheries  
Evan Sawyer, NOAA Fisheries  
Diane Riddle, State Water Resources Control Board  
Erin Foresman, State Water Resources Control Board  
Alicia Forsythe, Sites Project Authority



**EPA's DETAILED COMMENTS ON THE SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE SITES RESERVOIR PROJECT, GLENN AND COLUSA COUNTIES, CALIFORNIA, JANUARY 28, 2022**

**Operations Modeling and Diversion Criteria**

As noted in our 2018 comment letter on the Draft EIS, important components of the Sites Project remain undefined pending outcomes of state funding processes, such as the California Proposition 1 Water Storage Investment Program, including a final Operations Plan. While the impacts of constructing the reservoir are significant, a thorough description of project operations is critical to guiding the environmental analysis presented in the SDEIS, as well as guiding other federal and state permit decisions. The analysis presented in the SDEIS is based on modeled project operations generated by the California Department of Water Resources CalSim-II model, which is modified to include the proposed Sites Reservoir and conveyance facilities operating under specified diversion criteria (p. 2-31). The EPA is concerned that the modeling approach presented in the SDEIS does not represent the best available information on project operations. CalSim-II only evaluates historical hydrology through 2003 and does not include the more recent severe 2012-2016 drought. CalSim-II was replaced by CalSim 3.0 in 2017, which includes historical data through 2015, improved supply and demand estimation, finer spatial resolution, and a daily rainfall-runoff model. These factors suggest that CalSim 3.0 may be more a more appropriate operations model, and better suited to assessing potential effects of climate change on the proposed Sites Reservoir. Additionally, the EPA has concerns that the operating criteria identified on p. 2-31 used to model diversions to Sites are based on state and federal requirements that are currently being revisited.

***Recommendations:***

In the FEIS, fully describe the finalized operations of the proposed project and ensure that any operations not contemplated in the diversion criteria or CalSim-II results are reflected in the water supply, surface water quality, and aquatic biological resources chapters. Consider using CalSim 3.0 (or most current version) to evaluate whether modeled operations are affected by a longer temporal scope and other improvements over CalSim-II. Conduct a sensitivity analysis to evaluate the sensitivity of operations model results to reasonably foreseeable climate change impacts such as reduced and altered timing of runoff and increased crop and vegetation evapotranspiration.

Consider modifying one alternative to include more stringent diversion criteria to meet Delta outflow objectives and protect Delta beneficial uses. In the 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan<sup>1</sup>, the State Water Resources Control Board states that existing requirements are insufficient to protect the Bay-Delta ecosystem and proposes new inflow-based Delta outflow objectives of 55% of unimpaired flow within an adaptive range of 45-65%.

Consider modifying the Bend Bridge Pulse Protection diversion criterion (p. 2-31) to initiate pulse protection proactively using leading indicators, such as river stage forecasts from the National Oceanic and Atmospheric Administration's California-Nevada River Forecast Center, rather than lagging indicators such as visual observation of fish migration.

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<sup>1</sup>[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/docs/sed/sac\\_delta\\_framework\\_070618%20.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf)

### **Scope of Analysis**

While the 2017 DEIS/DEIR analyzed potential impacts of the project on the Trinity River and lower Klamath River, the SDEIS states on p. 2-30 that “the Project would not affect or result in changes in operation of the CVP, [or] Trinity River Division [sic] facilities (including Clear Creek).” It is unclear how this statement is supported. As noted above, diversions and releases from Sites Reservoir would be coordinated with CVP operations, which include the Trinity River Diversion. Proposed CVP exchanges with Lake Shasta would alter CVP operations, which in turn could affect operations of the Trinity River Diversion. Reclamation investment in the project, as high as 25% in Alternative 3, could result in significant amounts of new north-of-Delta CVP storage, utilization of which would likely result in impacts to north-of-Delta CVP operations.

### ***Recommendations:***

In the FEIS, analyze and disclose how CVP exchanges could alter Trinity River Diversion operations, and how these changes may affect water supply, surface water quality, aquatic biological resources, and tribal trust resources in the Trinity River and lower Klamath basin.

Provide an update on consultation between Reclamation and Klamath Basin tribal governments. Discuss issues that were raised, how those issues were addressed in relation to the proposed project, and how impacts to tribal or cultural resources would be avoided or mitigated, consistent with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, Section 106 of the National Historic Preservation Act, and Executive Order 13007 *Indian Sacred Sites*.

### **Wetlands and Clean Water Act Section 404**

As noted in the EPA’s 2018 letter on the Sites Reservoir DEIS, the proposed project would require a permit for the discharge of fill material into waters of the U.S. under Section 404 of the Clean Water Act. The information in Chapter 9 (Vegetation and Wetland Resources) and Appendix 9B (Vegetation and Wetland Methods and Information) of the SDEIS indicates that the estimates of direct (fill) and indirect (inundation) impacts to waters of the U.S. were assessed primarily using interpretation of aerial imagery, and that a protocol-level aquatic resource delineation has not been conducted in the proposed reservoir footprint in over 20 years. Based on the information presented, construction of 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 (p. 9-19, 9-29). These impacts to waters of the United States are jurisdictional under Section 404 of the Clean Water Act and require analyses and findings, such as the determination of a least environmentally damaging practicable alternative (LEDPA), that cannot currently be supported without additional site-specific information which is not provided in Chapter 9. The EPA encourages concurrent analysis of alternatives under NEPA and CWA Section 404 to ensure that the LEDPA is included in NEPA alternatives and can be selected in the Record of Decision. Under the 2008 Mitigation Rule (40 CFR 230.91-98), avoidance, minimization, and compensation for impacts are required for compliance with Section 404 in that order, and compensatory mitigation should be sited properly using a watershed approach to ensure that impacts are appropriately offset. The extent of the impacts to aquatic resources from construction of Sites Reservoir would far exceed any other recent project in the Sacramento Valley; it may prove difficult to compensate for such impacts.

Chapter 9 does not present information on how project operations would affect wetlands along the Sacramento River downstream of water conveyance facilities and in the Sutter and Yolo bypasses other than to conclude that they would not be substantially affected. However, the bypass flow and weir spill

analysis in Appendix 11M (Inundated Floodplain and Side-Channel Habitat Analysis, including Yolo and Sutter Bypasses) suggests that project operations would reduce the area of inundated areas in both bypasses and in Sacramento side channel habitat. These areas also include extensive areas of riparian and floodplain wetlands, including pending and approved mitigation banks providing CWA Section 404 mitigation credits.

***Recommendations:***

In the FEIS, disclose steps taken to achieve compliance with Section 404 of the Clean Water Act and implementing regulations (40 C.F.R. Part 230).

- Using approved protocols, delineate all waters to be affected by the construction of Sites Reservoir and associated facilities, and work with the US Army Corps of Engineers and the EPA to obtain a formal jurisdictional determination.
- To support a LEDPA determination, conduct a formal and reproducible assessment of the condition of aquatic resources in the reservoir footprint using an approved conditional assessment such as the California Rapid Assessment Method (CRAM).<sup>2</sup>
- Identify potential opportunities for compensatory mitigation in the Sacramento River watershed to support development of a Mitigation Plan (40 CFR 230.94(c)) following LEDPA determination.

In the FEIS, update Chapter 9 to include a description of how changes in timing and reductions in bypass and side-channel inundation caused by project operations may affect wetland function outside of the construction footprint.

**Sediment Management**

As discussed in Chapter 6 (Surface Water Quality), a large proportion of total concentrations of metals and pesticides in Sacramento River water under high discharge conditions are associated with sediments. Construction of the reservoir, access roads, and recreational facilities is also likely to result in erosion and mobilization of sediments in runoff. Sediments from the Sites watershed and Sacramento River would likely accumulate in Sites Reservoir and conveyance facilities, requiring active management and removal of sediment deposits. Conversely, waterbodies such as the Colusa Basin Drain (CBD) used to convey Sites deliveries, would experience higher flows that may increase mobilization of contaminated sediments into sensitive waterbodies like the Yolo Bypass and lower Sacramento River. Movement and resuspension of contaminated sediments can result in longer term ecological impacts via several mechanisms: sediment bioaccumulation into the food web such as for methylmercury and some pesticides, and acute and chronic toxicity resulting from discrete flushes (e.g., fall flush of the CBD through the Yolo Bypass containing higher concentrations of heavy metals and pesticides would directly impact sensitive fish and other aquatic species). The SDEIS proposes best management practices in Appendix 2D (Best Management Practices, Management Plans, and Technical Studies) to ameliorate potential impacts from the project on water and sediment quality. Appendix 2D.3.3 (Metals) also discusses measurement of water quality metal concentrations; it does not specifically call for testing of metal concentrations in sediment or sediment elutriates. Appendix 2D.5 (Sediment Technical Studies Plan), discusses the sediment monitoring program but does not include background screening for potential contaminants of concern (PCOCs) and toxicity.

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<sup>2</sup> California Wetland Monitoring Workgroup (CWMW). 2019. Using the California Rapid Assessment Method (CRAM) for Project Assessment as an Element of Regulatory, Grant, and other Management Programs. Technical Bulletin – Version 2.0, 85 pp. [https://www.cramwetlands.org/sites/default/files/2019CRAM\\_TechnicalBulletin.pdf](https://www.cramwetlands.org/sites/default/files/2019CRAM_TechnicalBulletin.pdf)

The Delta Long Term Management Strategy<sup>3</sup> (LTMS) includes a goal of maximizing beneficial reuse of dredged material in the Delta. Appendix 2D includes dredged material testing and disposal commitments. BMP-11 (Management of Dredged Material) states “Prior to dredging, a chemical evaluation of Funks Reservoir water and sediment will be conducted to determine contaminant concentrations. This will help evaluate the suitability of dredged material for beneficial use and determine compliance with water quality standards.”

***Recommendations:***

In the FEIS, include additional design BMPs that hydrologically disconnect, on a permanent basis, the associated existing and proposed new roads from the immediate reservoir watershed to prevent sediment erosion runoff into the reservoir.

To inform the development of a sediment monitoring plan, include an initial screening of metal concentrations in sediments as part of the project’s assessment of the presence and movement of metals. Sediment monitoring in the Sacramento River at the Red Bluff Pumping Plant and Hamilton City Pump Station intakes should include a minimum level of sediment quality characterization for conventional contaminants, known PCOCs (especially bioaccumulative compounds), and baseline suspended sediment and solid-phase bioassays. Consider additional sediment monitoring locations at critical waterbody junctions along the project route to establish background levels, such as where Stony Corral Creek outflows and at the furthest downstream point of the CBD before entering the Yolo Bypass.

In the FEIS, set specific dredged material beneficial reuse goals consistent with the LTMS, and commit to placing material in accessible sites to promote beneficial reuse of material. Commit to testing sediment quality according to standardized and acceptable protocols, i.e., the Inland Testing Manual,<sup>4</sup> and evaluated against relevant sediment criteria, such as those used by the SF Bay Dredged Material Management Office for upland beneficial reuse sites. Discuss how placement of dredged material on peat soils would affect subsidence and levee stability. Proactively identify potential sites for dredged material acceptance, including already established sites such as Antioch Dunes, Montezuma Wetland Restoration Project, Cullinan Ranch Restoration Project, and Sherman Island (owned by DWR).

**Climate Change**

Climate change is already causing severe stresses on California’s water supply infrastructure and ecosystems, with hydrologic extremes (both floods and droughts) expected to worsen as storms become more infrequent and intense, and a higher proportion of precipitation occurs as rainfall in important source water basins in the Sierra Nevada mountains.

***Climate Effects on Project Operations***

While the SDEIS acknowledges the constraints California is already experiencing due to climate change, the EPA is concerned that the analysis in Chapter 28 (Climate Change) does not fully assess the effects of future climate change or support many of its assertions that climate change is likely to result in minor

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<sup>3</sup> Delta LTMS is an official Regional Dredging Team established to implement the National Dredging Policy:

<http://water.epa.gov/type/oceb/oceandumping/dredgedmaterial/aboutactionagenda.cfm>

<sup>4</sup> <https://dots.el.erdc.dren.mil/guidance.html>

changes in Sites Reservoir storage and operations. The analysis uses a model centered on 2035 for hydrology and sea level rise, which, while appropriate for assessing near-term climate effects for analysis of operations of existing water infrastructure, offers less relevant insights for a proposed reservoir which is not expected to begin operating until 2030.

**Recommendation:** In the FEIS, include an assessment of effects of climate change on project operations using a planning horizon that reflects the timeline of the project, such as the “mid-century” scenario (2045-2074, centered on 2060) analyzed by DWR’s Bay-Delta Office for California’s Fourth Climate Change Assessment.<sup>5</sup> As noted above, CalSim 3.0 is likely better-suited to assess impacts of climate change on project operations than CalSim-II.

### **Greenhouse Gases**

Man-made reservoirs are a globally important source of anthropogenic greenhouse gas emissions, particularly methane. Chapter 21 (Greenhouse Gases) of the SDEIS states that quantifying greenhouse gas (GHG) emissions generated from land use change to inundated areas requires site-specific assessments which are not available until the Sites Project Authority takes control of the lands. The EPA disagrees that insufficient information is available to estimate GHG emissions from land use change; these GHG emissions may be estimated in the absence of site-specific data, using default emission factors from the International Panel on Climate Change’s Guidance for National Greenhouse Gas Inventories and other publicly available data. The 2019 Refinement to the IPCC Guidance for National Greenhouse Gas Inventories<sup>6</sup> includes guidance on calculating carbon dioxide and methane emissions from land converted to flooded lands (Ch. 7.3.2, p.7.20), which can be compared to estimated emissions from land-cover types already known to exist in the reservoir footprint, including wetlands and grazing lands.

**Recommendation:** In the FEIS, include an estimate of greenhouse gas emissions generated as a result of inundating the lands in the reservoir footprint. If site access prevents collection of site-specific data to quantify net GHG emissions, estimate net emissions using default emissions factors and other available data.

### **Surface Water Quality**

The water quality analysis presented in Chapter 6 indicates that once constructed, Sites would likely experience impaired water quality conditions with high levels of metals, as well as warm and still water conditions conducive to the formation of harmful algal blooms (HABs).

### **Mercury and Other Metals**

Methylmercury production and bioaccumulation is likely in the reservoir, Funks Creek, and Stone Corral Creek; all three waterbodies are expected to exceed the California Office of Environmental Health Hazard Assessment’s 0.2 mg/kg wet weight sport fish objective (p. 6-73, 6-74). Modeling results presented in Appendix 6E suggest that Sites Reservoir concentrations of aluminum, copper, and iron would routinely approach or exceed water quality objectives for aquatic life protection, limiting the ability of Sites to provide environmental flows and benefits to receiving waterbodies as proposed. Mitigation measure WQ-1.1 outlines the proposed management of impacts of methylmercury on Sites

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<sup>5</sup> Wang, J., H. Yin, J. Anderson, E. Reyes, T. Smith, and F. Chung. 2018. *Mean and Extreme Climate Change Impacts on the State Water Project*. A report for California’s Fourth Climate Change Assessment CCCA4-EXT-2018-004. Accessed 21 January 2021 from [https://www.energy.ca.gov/sites/default/files/2019-12/Water\\_CCCA4-EXT-2018-004\\_ada.pdf](https://www.energy.ca.gov/sites/default/files/2019-12/Water_CCCA4-EXT-2018-004_ada.pdf)

<sup>6</sup> <https://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/>

Reservoir and receiving waters and relies on recommendations from a draft staff report<sup>7</sup> that has not yet been approved. Additionally, many of the proposed mitigation measures would conflict with other measures meant to adaptively manage HABs, such as adding nitrate to stimulate algal growth or releasing water from the epilimnion (upper reservoir). The SDEIS also proposes to delay fish stocking to mitigate methylmercury bioaccumulation in reservoir fish; however, we note that delays of planned fish stocking will likely not reduce bioaccumulation unless other measures are taken to significantly inhibit methylmercury production. We further note that unauthorized fish stocking is common in United States and may not be easily preventable once recreational facilities become operational.

***Recommendations:***

In the FEIS, consider the effects of higher methylmercury concentrations in Sites Reservoir and receiving waters on tribal and subsistence fisherpersons who may not be protected by the 0.2 mg/kg wet weight sport fish objective.

Consider actions under mitigation measure WQ-1.1 that would prevent or inhibit mercury methylation, such as minimizing the frequency of water surface fluctuations which are known to contribute to mercury methylation, or installation of oxygenation systems in the reservoir at construction to better enable hypolimnetic oxygenation.<sup>8</sup>

Provide information regarding the likelihood that Sites Reservoir would not thermally stratify due to low storage in a given year, limiting the ability to mitigate releases of methylmercury and other metals under mitigations measures WQ-1.1 and WQ-2.1

***Harmful Algal Blooms***

While the EPA concurs with Chapter 6's finding that construction and operation of Sites Reservoir is likely to create conditions conducive to the formation of HABs, the conclusion that there would be no adverse effect does not appear to be supported by the analysis of HAB risks. The SDEIS characterizes HABs as dependent on specific conditions (p. 6-24); we note that these conditions only represent the optimal conditions for planktonic HABs, which can occur outside of optimal conditions, in flowing waters, and can alter buoyancy to obtain nutrients from deep waters.<sup>9</sup> The SDEIS does not consider the potential for benthic HABs which could occur in a reservoir such as Sites.<sup>10</sup> In addition to human health risks, HABs may contribute to degradation of ecosystem structure and function by causing anoxia, bioaccumulation of cyanotoxins in organisms, or directly causing fish mortality.<sup>9</sup>

Table 6-20 presents unadjusted average monthly temperatures derived from CalSIM outputs to assess when warm reservoir temperature conditions would support HABs; we note that this data is inappropriately applied since stratification would support warmer surface temperatures from early summer well into the fall. The SDEIS also incorrectly asserts that microcystin and other cyanotoxins

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<sup>7</sup> *Draft Staff Report for Scientific Peer Review for the Amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, Mercury Reservoir Provisions – Mercury TMDL and Implementation Program for Reservoirs* (State Water Resources Control Board 2017b)

<sup>8</sup> Statewide methylmercury control program for reservoirs factsheet. California Water Boards 2013. [https://www.waterboards.ca.gov/water\\_issues/programs/mercury/reservoirs/docs/factsheet.pdf](https://www.waterboards.ca.gov/water_issues/programs/mercury/reservoirs/docs/factsheet.pdf)

<sup>9</sup> Graham, J.L., Dubrovsky, N.M., and Eberts, S.M., 2017, Cyanobacterial harmful algal blooms and U.S. Geological Survey science capabilities (ver 1.1, December 2017): U.S. Geological Survey Open-File Report 2016–1174, 12 p., <https://doi.org/10.3133/ofr20161174>.

<sup>10</sup> FAQ on toxic algal mats. My Water Quality: California Harmful Algal Blooms Portal. [https://mywaterquality.ca.gov/habs/resources/benthic\\_education.html](https://mywaterquality.ca.gov/habs/resources/benthic_education.html)

would undergo rapid photodegradation and would be unlikely to affect downstream waters (p. 6-92); cyanotoxins produced in reservoir HABs commonly persist for weeks or months, and cyanobacteria released into downstream waters can travel downstream to inoculate receiving waterbodies.<sup>11</sup> No separate mitigation measures are proposed to manage HAB impacts, although the Reservoir Management Plan (p. 2D-30) describes a general HAB monitoring plan and actions to be taken to protect public health if trigger criteria are exceeded, including releasing water from deeper in the reservoir. Throughout the bloom season, monitoring for cyanobacteria species and cyanotoxins is critical to ensure appropriate protective measures are in place to address the cyanobacteria species and cyanotoxin concentrations present.

***Recommendations:***

In Chapter 11 of the FEIS, update Impact FISH-18 to include an assessment of the effects of HABs and resulting anoxia on reservoir fish in Sites Reservoir.

Revise the Reservoir Management Plan to improve HAB monitoring. We recommend monitoring occur more frequently than monthly near the start of the bloom season to identify blooms, implement management measures as quickly as possible and extend monitoring until the bloom ends, usually occurring upon reservoir turnover in late fall/early winter (not October as speculated on p. 2D-31). Base the assessment of the presence of cyanobacteria on:

- cell density OR cyanotoxin concentrations as trigger levels (not “and” as is proposed).
- both planktonic (water column) and benthic HABs;
- other indicators of benthic HABs, beyond confirmation by microscopy, such as the observation of benthic HABs or detached mats, or the detection of cyanotoxins characteristic of benthic HABs (e.g., anatoxin-a).
- California Cyanobacteria and Harmful Algal Bloom Network Trigger Levels,<sup>12</sup> as amended, or updated. The California Water Quality Monitoring Council periodically updates the guidelines and trigger levels to reflect evolving understanding of HABs.

In the FEIS, identify criteria to determine the appropriate depth to avoid HAB releases and describe how these multiple factors will be balanced and prioritized if no single depth interval meets release criteria for temperature, HABs, and metals. Describe how appropriate depth levels for water releases from the Sites I/O works will be determined in a way that allows for providing warm epilimnetic water for rice production while avoiding releasing cyanobacteria and cyanotoxins (likely to occur in the epilimnion during rice growing season) and avoiding releases of methylmercury and other metals (likely to occur in higher concentrations in the hypolimnion).

**Temperature Effects on Native Salmonids**

As noted in the EPA’s 2018 letter on the Sites DEIS, operation of the proposed reservoir could affect temperature-dependent mortality of Endangered Species Act (ESA) listed fish species in the Sacramento River and its tributary streams, including Chinook salmon. Exchanges with Lake Shasta and Lake Oroville could help maintain the cold water pool needed to support salmonid spawning and rearing

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<sup>11</sup> Otten, T.G., Crosswell, J.R., Mackey, S. and Dreher, T.W., 2015. Application of molecular tools for microbial source tracking and public health risk assessment of a *Microcystis* bloom traversing 300 km of the Klamath River. *Harmful Algae*, 46, pp.71-81.

<sup>12</sup> California Guidance for Cyanobacteria HABs in Recreational Inland Waters, [https://mywaterquality.ca.gov/habs/resources/habs\\_response.html](https://mywaterquality.ca.gov/habs/resources/habs_response.html)

habitats, and a robust analysis of the project's potential effects on temperature-dependent mortality is critical for understanding potential benefits of improved temperature conditions for salmonids.

The EPA is concerned that the temperature analysis presented in Chapter 11 (Aquatic Biological Resources) and Appendix 11D (Fisheries Water Temperature Assessment) relies on models – Interactive Object-Oriented Simulation (IOS) and Oncorhynchus Bayesian Analysis (OBAN) – that are proprietary and not transparent and may not be as robust as other available models, such as NOAA's Winter Run Life Cycle Model (WRLCM). There also appear to be multiple instances where Appendix 11D gives apparently conflicting results with a higher number of days exceeding temperature thresholds yet lower or unchanged average temperatures, or vice versa (for example, see Tables 11D-3, 11D-80, 11D-86, 11D-164). As noted above, EPA also has concerns about the robustness and responsiveness of the CalSim-II operations modeling approach which underlies much of the analysis presented in the SDEIS. Understanding the effects of climate change on temperature-dependent mortality in ESA listed salmonids is critical to understanding the potential effects of the project, but CalSim-II modeling has a temporal scale ending in 2003, prior to the 2012-2016 drought and ongoing drought which have resulted in significant salmon mortality.

The SDEIS concludes that there would be no adverse effect on native salmonid species, which appears to be unsupported by the modeling results presented in Chapter 11 and Appendix 11D. The modeling results are presented as monthly averages, which may reduce the impact of high values and could suppress real temperature trends, in particular trends occurring across temperature transition months (e.g., April-May and October-November). We are also concerned that the modeling results are presented as single values without confidence intervals – all models have inherent uncertainty and knowing the range of plausible values is critical for risk evaluation and disclosure to the public and decision-makers.

Although the tables in Appendix 11D and the assessment in Chapter 11 consider the relative increase of thermal stress of the Alternatives, there does not appear to be a robust quantitative description of the level of thermal stress expected on salmon or the other fish species under the no action alternative. Such information provides critical context on the overall impact that would occur as a result of the alternatives. While it is useful to understand how project alternatives will affect temperature relative to the no-action alternative, understanding baseline and future temperature stress on native fish is crucial to contextualizing project impacts and evaluating potential tipping points.

***Recommendations:***

Clarify the apparently conflicting model results in Appendix 11D and consider analyzing temperature effects on fisheries using an alternative modeling approach, such as the WRLCM. The WRLCM's strengths include significant transparency (including documentation of stakeholder input on model development and applications), state of the art temperature dependent mortality modeling, highly detailed modeling of Yolo Bypass, and high frequency data of Delta tidal and export conditions in assessing passage and survival.

Conduct a temperature analysis over the period from 2003 to present, in addition to the period presented in Chapter 11 and Appendix 11D. This more recent hydrograph information is likely more representative of future conditions and could provide more accurate information on instream temperature and extent and frequency of temperature impacts. Additionally, given the greater resolution of a shorter period, analysis of 2003 to present would likely provide greater model response.



Present modeling results averaged over a shorter timeframe in the FEIS for April-May and October-November. Regardless of which biological models are used, include in the assessment results an analysis of uncertainty with confidence intervals or some other measure of the range of plausible output values.

Describe the level of thermal stress expected under the no-action alternative (NAA) as compared to known species life stage temperature thresholds used in the Appendix 11D. Such an analysis of existing thermal stress (i.e., comparison of the temperatures under the NAA to the temperature thresholds) should also be considered for the more recent period of 2003 to the present (see above comment).

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**From:** King, Vanessa M [vking@usbr.gov]  
**Sent:** 1/31/2022 5:18:11 PM  
**To:** Heydinger, Erin [erin.heydinger@hdrinc.com]  
**CC:** Spranza, John [john.spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Hunt, Shane D [shunt@usbr.gov]; Mosley, Michael I [mmosley@usbr.gov]; Sumer, Derya [dsumer@usbr.gov]  
**Subject:** Re: [EXTERNAL] BA Modeling Follow-Up

Hi Erin,

After reviewing the documentation that Steve recently provided, we still have some questions about how the exchanges are being modeled, so I'd like to set up a meeting with CVO and Jacobs to discuss this. Do you want to facilitate that, or should I work directly with Rob/Steve to schedule it?

Thanks,

Vanessa

Vanessa King  
Hydrologist and Interim Project Manager for Sites Reservoir Project  
Bureau of Reclamation, Interior Region 10 · California-Great Basin, Division of Planning  
Office: 916-978-5077

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**From:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>  
**Sent:** Wednesday, January 26, 2022 8:08 AM  
**To:** King, Vanessa M <vking@usbr.gov>  
**Cc:** Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Hunt, Shane D <shunt@usbr.gov>; Mosley, Michael I <mmosley@usbr.gov>; Sumer, Derya <dsumer@usbr.gov>  
**Subject:** RE: [EXTERNAL] BA Modeling Follow-Up

Hi Vanessa,

Good questions. Yes, the revised diversion criteria would be used in the analysis – I should have included that. For the storage allocation used in the modeling analysis, Reclamation would be allocated the percentages noted below, the State would be allocated 244 TAF based on the feasibility study, and the remainder would be allocated to other participants. This will still result in an overall reduction of storage for local participants, and exactly how the storage is allocated between the local participants outside the modeling effort will be worked through in the coming months.

Hope that helps, let me know if you have any other questions.

Erin

Erin Heydinger PE, PMP  
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**From:** King, Vanessa M <vking@usbr.gov>  
**Sent:** Tuesday, January 25, 2022 4:42 PM  
**To:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>  
**Cc:** Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Hunt, Shane D

<shunt@usbr.gov>; Mosley, Michael I <mmosley@usbr.gov>; Sumer, Derya <dsumer@usbr.gov>

**Subject:** Re: [EXTERNAL] BA Modeling Follow-Up

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Hi Erin,

Thanks for the information. I don't see the updated diversion criteria on the list, but I assume you're still planning to include that change, right?

Regarding the decreased deadpool, will the extra storage space be allocated among all storage partners in proportion to their investment level, or are you planning to use it in a different way?

I'll get back to you on these parameters as soon as possible, but we'd like to discuss it at our internally coordination meeting on Thursday, so I probably won't be able to respond before Thursday afternoon.

Thanks,

Vanessa

Vanessa King  
Hydrologist and Interim Project Manager for Sites Reservoir Project  
Bureau of Reclamation, Interior Region 10 · California-Great Basin, Division of Planning  
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**From:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>

**Sent:** Tuesday, January 25, 2022 1:45 PM

**To:** King, Vanessa M <vking@usbr.gov>

**Cc:** Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>

**Subject:** [EXTERNAL] BA Modeling Follow-Up

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Hi Vanessa,

Thanks so much for all the time you've taken to discuss Sites operations as we gear up for the BA modeling. Following up from our meeting last week, I wanted to provide an overview of the modeling parameters as discussed. We would like to give Jacobs the green light to start within the next day or two, so please let me know as soon as possible if there is anything here that gives you pause – I am sure we can figure out something that will work for all of us.

- Hydrology: 2035 CT
- Sea level rise: 15 cm
- Two runs using alternative 3:
  - 25% storage allocation for Reclamation

- 16% storage allocation for Reclamation (note, this will provide a mid-point between Alt 1 and Alt 3. Alt 1 will also be re-run for the Final EIR/EIS, so we will have a range covered).
- Operation: Alt 3BR Silver Bullet
  - Aligns with memo provided by Jacobs to Reclamation
  - Expanded exchanges for coldwater pool, spring pulses, and fall flow stability
- Updated baseline operations consistent with Reclamation's November 2021 published model
- We also would like to reduce the assumed deadpool from 120 TAF to 60 TAF. The 120 TAF was a carryover from the days of the Delevan Pipeline, and given the updated project infrastructure, we do not think this will be problematic. We did not discuss this last week, so please let me know if you have any questions or concerns.
- There are some other minor tweaks related to the local participants' operations that we would like to incorporate, such as the assumptions for when NOD participants might transfer water to SOD participants, and when SOD participants might demand water from Sites (i.e. including more year types). The purpose of this is to give the local Sites participants a better sense of when they might get water from the project. I don't think this will result in any substantial changes to the overall operations, but again please let me know if you have questions or concerns.

We will keep in close coordination as Jacobs completes the modeling to be sure we're all on the same page – I will ask John to add it to the meeting agenda he is putting together.

While we'd like to move forward with the modeling now, we will also plan to talk to NMFS about the various runs and what would be included in the BA as Shane and others suggested last week. Thanks and we're looking forward continued coordination on this!

Erin

**Erin Heydinger, PE, PMP**  
*Project Manager - Water*

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**From:** Thayer, Reed/SAC [Reed.Thayer@jacobs.com]  
**Sent:** 1/31/2022 8:47:58 PM  
**To:** Heydinger, Erin [erin.heydinger@hdrinc.com]  
**CC:** Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; steve.micko@jacobs.com; Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Model Assumptions Matrix  
**Attachments:** Sites\_BA\_AssumptionMatrix\_012622.xlsx

Erin,  
I have attached the BA assumption matrix with the changes that you requested. As we discussed last week, I did not include a row for "release allocation". Please let me know if you have any questions.

**Reed Thayer, PE (CA)** | Jacobs | Water Resources Engineering Technologist  
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**From:** Heydinger, Erin <Erin.Heydinger@hdrinc.com>  
**Sent:** Monday, January 24, 2022 4:24 PM  
**To:** Thayer, Reed/SAC <Reed.Thayer@jacobs.com>  
**Cc:** Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** [EXTERNAL] RE: Model Assumptions Matrix

Hi Reed,

Thanks for sending this over. Could you make a couple refinements based on our meeting with Reclamation last week?

- Hydrology = 2035 CT
- Sea level rise = 15 cm
- Two Alt 3s for BA:
  - 25% storage allocation for Reclamation
  - 16% storage allocation for Reclamation
  - Both of these calculated using a proportional decrease from Alt 1B participation levels
- Also, is there a separate row needed for "release allocation"? If I remember correctly, the model only attempts to move a portion of SOD storage, even in D and CD years. If possible, I'd like this allocation % to be higher based on comments from MBK. Let me know if I'm off base on this one.

Thanks!  
Erin

**Erin Heydinger** PE, PMP  
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**From:** Thayer, Reed/SAC <Reed.Thayer@jacobs.com>  
**Sent:** Friday, January 21, 2022 1:29 PM  
**To:** Heydinger, Erin <erin.heydinger@hdrinc.com>  
**Cc:** Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>  
**Subject:** Model Assumptions Matrix

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Erin,

I have attached a matrix of the assumptions that we are using for the preliminary BA modeling. Here are a few notes:

1. Per our discussion Wednesday, we have used the Alternative 3 storage account sizes and federal participation for the BA model assumptions
2. I have highlighted changes between 2021 RDEIR/SDEIS Alt 1B and 2022 BA Alternative 3

Please contact me with any questions.

**Reed Thayer, PE (CA)** | Jacobs | Water Resources Engineering Technologist  
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