SOMACH SIMMONS & DUNN
A Professional Corporation
ANDREW M. HITCHINGS (SBN 154554)
AARON A. FERGUSON (SBN 271427)
KELLEY M. TABER (SBN 184348)
MICHELLE E. CHESTER (SBN 300632)
500 Capitol Mall, Suite 1000
Sacramento, CA 95814
Telephone: (916) 446-7979
Facsimile: (916) 446-8199
ahitchings@somachlaw.com
aferguson@somachlaw.com
ktaber@somachlaw.com
mchester@somachlaw.com

Attorneys for Applicant/Petitioner
SITES PROJECT AUTHORITY

BEFORE THE

STATE WATER RESOURCES CONTROL BOARD

IN THE MATTER OF SITES PROJECT AUTHORITY WATER RIGHT APPLICATION A025517X01; PETITION FOR PARTIAL ASSIGNMENT OF STATE FILED APPLICATION A025517; PETITIONS FOR RELEASE OF PRIORITY OF STATE FILED APPLICATIONS A025513, A025514, A025517 (REMAINING), A022235, A023780, AND A023781 IN FAVOR OF THE PORTION OF STATE FILED APPLICATION A025517 ASSIGNED TO SITES PROJECT AUTHORITY.	**SITES PROJECT AUTHORITY'S DETAILED COMMENTS ON ADMINISTRATIVE HEARINGS OFFICE DRAFT DECISION AND DRAFT WATER RIGHT PERMIT**

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Applicant/Petitioner Sites Project Authority (Authority) hereby respectfully submits the following detailed comments on the Draft Decision and Draft Water Right Permit (Draft Permit) issued in this proceeding by the State Water Resources Control Board's (Board) Administrative Hearings Office (AHO) on March 20, 2026.

INTRODUCTION

The Sites Reservoir Project (Project) is an innovative water storage project critical to California's water supply strategy and achieving the State's goal of 4 million acre-feet (MAF) of additional water storage. It is also essential to meeting the State's recently updated planning target of 9 MAF of additional water, water conservation, or water storage capacity by 2040.[1] For several decades, both California and the federal government have emphasized the importance of a reservoir in the Project's location because of its unique ability to store water north of the Sacramento-San Joaquin Delta (Delta) in a way that does not impede fish passage. After decades of planning and millions of dollars expended working to advance the Project by the Project's participants, this long-sought-after reservoir is poised to become a reality. The Project has undergone extensive environmental review that was upheld by the State's appellate court, has received Incidental Take Permits (ITPs) from the California Department of Fish and Wildlife (CDFW), a Master Streambed Alteration Agreement from CDFW, and is conditionally awarded $1.094 billion by the California Water Commission (CWC). The Board should now issue an appropriately conditioned water right permit as requested by the Authority to allow the Project to advance the State's goal of maintaining a resilient water supply in the face of the increasing effects of climate change.

Unfortunately, the Draft Decision and Draft Permit issued by the AHO will not advance that goal. Instead, the proposed additional diversion criteria and Bay-Delta Plan compliance terms (as well as other requirements) unnecessarily constrain the capacity and performance of the Project, and greatly risk rendering the Project unaffordable and infeasible. The restrictive terms and conditions proposed for inclusion in the Draft Permit would prevent the Project's contribution to the State's long-term water supply planning targets in accordance with the 2023 California

[1] Wat. Code, §10004.6(f); Sen. Bill No. 72 (SB 72), approved by Governor, Oct. 1, 2025 (2025-2026 Reg. Sess.).)

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Water Plan and the planning direction for the 2028 California Water Plan update. In addition, the Draft Decision and Draft Permit also wrongly reject the requested inclusion of Funks Creek and Stone Corral Creek as authorized sources of supply for the Project (a critical aspect for local support), and inappropriately impose unnecessary and poorly supported terms for the Project's rediversion of water at the Delta export facilities.

These circumstances, and others as detailed in these comments, are inconsistent with the Board's fundamental obligation to allow the appropriation of water that will best develop, conserve, and utilize the appropriated water in the public interest. Accordingly, the Draft Decision and Draft Permit need to be revised, as requested below, to ensure that the permitted Project is indeed consistent with the public interest. With these revisions, the Project can productively utilize the overwhelmingly voter-approved Proposition 1 funding and additional participant resources in furtherance of the California Legislature's statewide goals and the Governor's Water Supply Strategy.

LEGAL STANDARDS

In issuing a water right permit, the Board must adhere to the procedural and substantive requirements of the California Constitution, the Water Code, and applicable regulations. The Board shall grant an application to appropriate water upon determining that unappropriated water is available, that the proposed appropriation will not injure existing lawful users of water, and is consistent with the public interest. (Wat. Code, § 1253.) In doing so, the Board must make findings regarding water availability, public trust resources, and beneficial and reasonable use. (See D-1652, pp. 8-9, 21; Cal. Const., art. X, § 2; Wat. Code, §§ 100, 1201-1202, 1243, 1243.5, 1375; 23 CCR § 695[2].)

In determining water availability, the Board considers the amount of water required to support instream beneficial uses and to protect public trust resources where appropriate. (Wat. Code, §§ 1243, 1243.5.) The Board has an affirmative and continuing duty to consider and protect public trust resources. (*Nat. Audubon Society v. Superior Court* (1983) 33 Cal.3d 419,

[2] References to title 23 of the California Code of Regulations are abbreviated as "23 CCR" followed by the section number.

425-447 (*Nat. Audubon*).) However, public trust interests are not absolute and do not categorically override other beneficial uses of water. (*Id.* at p. 443.) As the California Supreme Court has recognized, "the state may have to approve appropriations despite foreseeable harm to public trust uses," provided it considers those impacts and seeks "to preserve, so far as consistent with the public interest, the uses protected by the trust." (*Id*. at pp. 446-447.)

A proposed use is consistent with the public interest if it satisfies the independent constitutional requirements of both beneficial use and reasonable use. (Cal. Const., art. X, § 2; *Santa Barbara Channelkeeper v. City of San Buenaventura* (2018) 19 Cal.App.5th 1176, 1185-1185 (*Channelkeeper*).) The constitutional reasonable use doctrine provides that a water right does not include the right to waste water and requires that the State's water resources be put to beneficial use *to the fullest extent of which they are capable*. (Cal. Const., art. X, § 2; Wat. Code, § 100.) The rule of reasonableness applies to all uses of water and requires a fact-specific process of comparative balancing. (*Peabody v. Vallejo* (1935) 2 Cal.2d 351, 371-372 (*Peabody*).) All uses of water must be balanced under this rule. (*Nat. Audubon*, *supra*, 33 Cal.3d at p. 447, 454-455.)

Determining whether a use is reasonable and beneficial requires consideration of multiple factors and a comparison of competing uses. (Wat. Code, § 100.5; *Imperial Irrigation Dist. v. State Water Res. Control Bd.* (1990) 225 Cal.App.3d 548, 570.) The analysis is inherently case-specific and depends on the totality of the circumstances. (*United States v. State Water Res. Control Bd.* (1986) 182 Cal.App.3d 82, 129 (*Racanelli*); see also Wat. Code, § 100.5 [the reasonableness rule itself requires considering all circumstances].) As long recognized, "California courts have never defined … what constitutes an unreasonable use of water, perhaps because the reasonableness of any particular use depends largely on the circumstances." (*Channelkeeper*, *supra*, 19 Cal.App.5th at p. 1185, quoting *Light v. State Water Res. Control Bd.* (2014) 226 Cal.App.4th 1463, 1479.) "What may be a reasonable beneficial use, where water is present in excess of all needs, would not be a reasonable beneficial use in an area of great scarcity and great need." (*Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist*. (1935) 3 Cal.2d 489, 567.)

In determining the public interest, the Board must consider coordinated statewide water planning, including the California Water Plan, which guides the orderly and efficient development and utilization of the state's water resources. (Wat. Code, §§ 1256, 10005.) This includes consideration of the State's interest in maintaining reliable and sustainable water supplies to meet present and future demands, including domestic use and basic human needs. (*Id.*, §§ 106, 106.3.)

Because public trust interests are not paramount but must be balanced with competing uses, the Board's public interest determination, and its authority to impose permit conditions, is bounded by the constitutional rule of reasonableness. (*Nat. Audubon*, *supra*, 33 Cal.3d at p. 443.) Reasonableness under Article X, section 2, requires considering competing water uses and "cannot be resolved *in vacuo*, isolated from state-wide considerations of transcendent importance." (*Joslin v. Marin Mun. Water Dist.* (1967) 67 Cal.2d 132, 139-140 [holding that using flow to deliver gravel for commercial use unreasonable when weighed against proposed competing use of conserving Nicasio Creek flow for consumptive uses in Marin County].) Indeed, the Board would violate Article X, section 2, by imposing permit conditions that, when considering competing uses, require an unreasonable amount of flow to achieve. (*Racanelli, supra,* 182 Cal.App.3d at pp. 143-144.)

Although the Board must "attempt, so far as feasible, to avoid or minimize any harm to [public trust] interests," feasibility itself requires comparative balancing that accounts for coordinated statewide planning, existing and future demands, and the State's need for reliable, climate-resilient water supplies. (See *Nat. Audubon*, *supra,* 33 Cal.3d at p. 426.) California's population and economy have developed in reliance on appropriations that divert substantial quantities of water, even where such diversions may affect instream resources, and the Constitution and Water Code therefore emphasize efficient and beneficial use of limited water resources. (Cal. Const., art. X, § 2; Wat. Code, §§ 100, 104, 106, 106.3; *Nat. Audubon*, *supra*, at p. 446.) Accordingly, permit conditions must bear a reasonable relationship to demonstrated impacts and reflect a balanced accommodation of competing beneficial uses. Conditions that unnecessarily constrain or materially impair water supply reliability, frustrate coordinated

statewide planning, or undermine the State's ability to develop climate-resilient supplies do not advance the public interest but instead conflict with it.

Lastly, treating public trust uses as overriding all other uses, including substantial water supply reliability and drought resiliency benefits of the Project, contravenes the constitutional mandate of reasonable and beneficial use, and the Legislature's directive to promote the orderly and efficient development of the state's water resources, including meeting the goals of SB 72. (Cal. Const., art. X, § 2; Wat. Code, §§ 100, 1256, 10005.) Indeed, Article X, section 2, was politically aimed at encouraging water storage, and it is therefore unsurprising that early decisions interpreting the amendment largely involved promoting storage projects. (See *Gin S. Chow v. Santa Barbara* (1933) 217 Cal. 673, 677-680, 700-704; *Peabody, supra,* 2 Cal.2d at pp. 358-361, 366-369, 373-376; *Lodi v. East Bay Mun. Utility Dist.* (1936) 7 Cal.2d 316, 320-324, 335-340; *Meridian, Ltd. v. San Francisco* (1939) 13 Cal.2d 424, 432-436, 443-448.) This historical context underscores that California water law has never elevated a single use above all others but instead has required the careful accommodation and balancing of competing beneficial uses.

ARGUMENT

A. Revisions to the Draft Decision and Draft Permit Are Necessary to Best Develop, Conserve, and Utilize the Appropriated Water in the Public Interest

The Water Code directs the Board to impose permit terms that "best develop, conserve, and utilize" water "in the public interest." (Wat. Code, § 1253.) Water Code sections 1256, 1257, and 1259 expand on the scope of the public interest analysis requirements. Section 1256 requires consideration of statewide and coordinated water planning such as the California Water Plan; section 1257 requires evaluation of the relative benefit derived from all beneficial uses; and section 1259 requires the Board to consider the State goal of providing a "suitable living environment for every Californian." (*Id.*, §§ 1256-1259.) Moreover, under Water Code sections 1243 and 1243.5, the Board must contemporaneously consider whether fish and wildlife enhancement requirements are also in the public interest.

Consistent with the foregoing legal standards, the AHO should revise the Draft Decision and Draft Permit in accordance with the Authority's requested revisions below. These requested

revisions are presented in the order of most importance to ensure that the Project remains viable and feasible.

Specifically, as to Draft Permit Terms 23, 30, and 31,[3] and as explained in more detail below, the water supply impacts from the resultant reduced diversions under these terms would reduce the Project yield by approximately 50%, which would greatly risk rendering the Project infeasible. Remarkably, the Draft Decision includes no analysis of the effects of these permit terms on Project diversions, indicating that these terms did not receive the kind of thorough scrutiny necessary before being included in the Draft Permit. In contrast, the Authority's technical team has analyzed and modeled the impacts of these draft permit terms on Project diversions, and they have prepared technical memoranda setting forth their analysis and conclusions, which are appended to these comments as Attachments A and B hereto.[4]

Attachment A is prepared by Authority expert Mr. Chad Whittington, P.E. (Jacobs Engineering Inc.) and titled, "CalSim 3 Modeling Analysis of Sites Project Diversions Under Draft Water Right Terms 23, 30, and 31" dated May 22, 2026. The analysis summarizes the assumptions, approaches, and results of CalSim 3 modeling conducted to estimate the effects of Terms 23, 30, and 31 on Project diversions. Attachment B is a Technical Memorandum prepared by Authority expert Mr. Wesley Walker, P.E. (MBK Engineers) with the subject, "Technical Memorandum, Water Supply Effects of Draft Water Right Permit Terms 23, 30, and 31" dated May 22, 2026." The analysis provides a summary of the analytical approach taken to implement Terms 23, 30, and 31, along with the estimated effects to potential diversions resulting from these terms. To analyze the potential effects Mr. Walker incorporated the additional diversion criteria into the "Sites Historical Water Availability Analysis (WAA) Tool." (See SITES-025c, ¶ 20; SITES-311c, ¶ 3; AHO-045.)[5]

[3] Future references to Draft Permit Terms will be "Term" immediately followed by the Term number, including any subpart(s).

[4] The complete set of modeling files associated with Attachment A, and the Excel spreadsheet tool associated with Attachment B can be accessed at the following ShareFile site: https://somachlaw.sharefile.com/public/share/web-s561ba22d4de84f879de7e5d04136cff7.

[5] These technical memoranda are extensions of the WAA and CalSim 3 analyses submitted by the Authority on November 3, 2025, which were accepted into the evidentiary record. (See Draft Decision, p. 42, fn. 17.) Accordingly, the memoranda are consistent with evidence already in the evidentiary record and therefore do not

For ease of reference, and as explained in Attachments A and B, the estimated reductions in diversions that would occur as a result of imposing these draft permit terms are summarized in the following table:

Modeling Summary of Sites Diversions with the Draft Water Right Permit Terms. All values in 1,000 acre-feet, with changes shown relative to the Operations ITP Scenario.

Scenarios	Daily Historical WAA	CalSim 3
Operations ITP	**301 (-28% from ITP Application)**	**252 (-15% from ITP Application)**
ITP + Term 23	**-37 (-12%)**	**-38 (-15%)**
ITP + Terms 23 + 30a	**-121 (-41%)**	**-122 (-48%)**
ITP + Terms 23 + 30c	**-79 (-26%) to -89 (-30%)**	**-72 (-28%) to -86 (-34%)**
Max Term 30d Savings	**11 (4%)**	**N/A**
Terms 23 + 31a	**-84 (-28%)**	**-71 (-28%)**
ITP + Terms 23 + 30a + 31a	**-143 (-48%)**	**-139 (-55%)**

(Attachment B, p. 15.)

These impacts to the Project yield are plainly unreasonable and contrary to the public interest. It is also important to consider these additional diversion reductions in the context of the already significant reductions resulting from CDFW's issuance of its 2024 Operations ITP with its fully protective diversion criteria. As shown in the table above, the ITP's corresponding Conditions of Approval reduced the Project diversions by a range of approximately 15-28%[6] as compared to the Project's proposed diversions in the Authority's application (which itself already included proposed terms and conditions to protect fish and wildlife, and legal users of water).

"augment the record in any significant way." (Order WR 96-1, p. 9).) The memoranda provide impact analyses regarding the Draft Permit terms, which were not performed by the AHO nor included in the Draft Decision, and which critically address the balance of competing beneficial uses and public interest considerations. Accordingly, there is good cause for the AHO and Board to consider these technical memoranda in conjunction with the Authority's comments on the Draft Decision and Draft Permit and include them in the evidentiary record without otherwise reopening the evidentiary record. In this regard, the AHO has broad authority to manage the proceeding, including considering these memoranda without reopening the evidentiary record. (Wat. Code, § 1110; Gov. Code, § 11400 et seq.; 23 CCR § 648 et seq.) Nothing in the AHO's enabling legislation, the Board's regulations or guidance governing adjudicative proceedings, nor the Administrative Procedure Act interferes with this discretion.

[6] See also AHO-039, Table A-16, at p. 172; SITES-306c, fig. 13.

1. The Proposed Bay-Delta Plan Compliance Requirements Under Terms 29-31 Should Be Removed or Revised

The Authority continues to contend that Standard Permit Term 96 (Reserved Jurisdiction for Bay-Delta Plan Amendment) is sufficient to ensure the Project complies with any update to the Bay-Delta Plan. (AHO-025; see also Authority's Consolidated List of Proposed Permit Terms, Mar. 26, 2025.) Term 96 confirms that the season of diversion and the maximum amount authorized to be diverted under the permit "may be reduced to implement existing or revised water quality and flow objectives included in the Bay-Delta Plan." Considering that more Bay-Delta Plan triennial review periods will elapse before operation of the Project begins, Standard Permit Term 96 is sufficient to ensure the Project complies with current and future iterations of the Bay-Delta Plan. If the Board declines to utilize its already existing standard permit term approach to addressing Bay-Delta Plan compliance, the Authority requests revisions to the corresponding draft permit terms as described below.

a. Term 30

Term 30 is overbroad, impractical, premature, and not in the public interest, as explained further below for each subpart of the draft term. Moreover, when combined with Term 23, imposition of Term 30 (including all of its subparts) would result in a reduction to annual average diversions of approximately 41-48%. (Attachment A, p. 10; Attachment B, p. 6.) Given these unreasonable water supply impacts that would greatly risk rendering the Project infeasible with no verifiable corresponding ecosystem benefits, the Authority proposes the following revisions to Term 30[7]:

> 30. The following requirements apply to diversions under this Permit:
>
> a. Except as provided in part (d), diversions are not authorized when Sacramento River inflow and Sacramento River inflow-based Delta outflow is less than 55 percent of unimpaired ~~Delta outflow~~ calculated as a seven-day running average or if diversions would reduce Sacramento River inflow and Sacramento River inflow-based Delta outflow below 55 percent of unimpaired ~~Delta outflow~~ calculated as a seven-day running average.

[7] A compilation of the Authority's proposed redline revisions to certain terms in the Draft Permit is attached hereto as Attachment C.

b. The methodology and data sources in Attachment 4 shall be used to calculate the requirements of part (a) of this term. The Executive Director may amend Attachment 4 either at their election or upon request of the Permittee or any interested party to improve accuracy of the methodology or data sources. Notice of any change to Attachment 4 will be provided by the Board's email distribution list for Bay-Delta-related matters and to the Permittee and posted on the State Water Board's website at least 60 days in advance of any decision to amend Attachment 4 by the Executive Director.

c. If the Board updates the Bay-Delta Plan to include Sacramento River inflow and inflow-based Delta outflow requirements based on a percentage of unimpaired flow applicable to this Permit, and the Board takes regulatory actions to implement those requirements, then Permittee shall comply with those regulatory requirements in lieu of the requirements of parts (a) and (b) of this term. Applicable Sacramento River inflow and Delta outflow requirements do not include water supply adjustments or local cooperative solutions unless this Permit is ~~identified~~approved as qualifying for water supply adjustments or local cooperative solutions in accordance with the Bay-Delta Plan, or this term is modified pursuant to the Board's reservation of authority in Term 57.

d. If the Board updates the Bay-Delta Plan to include a VA Pathway and this Permit is subsequently approved by the Board for inclusion in the water rights list in Appendix B.1 of the Bay-Delta Plan in accordance with the applicable provisions of the Bay-Delta Plan, then Permittee shall comply with its commitments as described in and required under the VA Pathway in lieu of the requirements in parts (a) and (b) of this term so long as the VA Pathway is in effect under the Bay-Delta Plan and any future amendments thereto.

~~d. The conditions on diversion in this Term shall be subject to the following exception:~~

~~i. If Term 23 prohibits or limits diversions when all other conditions for diversion are met, the Permittee may quantify the additional volume of water it would have been able to divert absent the requirements of Term 23. The methodology for quantifying the volume shall take into consideration all relevant factors, including infrastructure capacity, and must be approved by the Executive Director.~~

~~ii. If, in the same water year, Term 30(a) prohibits or limits diversions but all other conditions for diversion are met, including but not limited to Term 23, the Permittee may divert up to the additional volume of water quantified under part (i). The Executive Director may suspend application of this part upon finding that the diversions authorized by this part would have an unreasonable effect on fish or other instream beneficial uses.~~

~~iii. If the Bay-Delta Plan is updated to include adaptive implementation provisions such as flow shaping, and the Board takes regulatory actions applicable to this Permit to~~

~~implement Delta outflow requirements, then the procedures described in the Bay-Delta Plan shall apply in lieu of part (ii).~~

~~iv. Annually, the Permittee shall report to the Board the volume of water quantified under part (i) of this Term, the dates water was diverted under part (ii) of this Term, and the volume of water diverted under part (ii) of this Term.~~

i. Rationale for Revisions to Terms 30(a) and (b)

Imposition of Terms 30(a) and (b) would result in approximately 41-48% reduction to annual average diversions. (Attachment A, p. 10; Attachment B, p. 6.) These terms have a large effect in all years, but effectively eliminate diversions in Dry and Critical years and dramatically reduce diversions in Below Normal years. (Attachment A, p. 10.)

In any event, there is no support in the evidentiary record for imposing the proposed 55% unimpaired Delta outflow requirement solely on the Project prior to the adoption and implementation of the Bay-Delta Plan, or that any such imposition on one water right holder would reasonably protect beneficial uses in the Bay-Delta watershed. Moreover, there are technical and equity concerns regarding how watershed-wide Delta outflow will be measured and calculated under the Bay-Delta Plan Update, and how much water other tributaries are contributing to Delta outflow as compared to the Sacramento River mainstem (e.g., certain tributaries in San Joaquin River watershed only have a 40% unimpaired flow requirement).

Also, the Draft Decision at pages 110-112 refers to Terms 30(a) and (b) as an "interim measure/requirement." There simply is no need to include those terms in the water right permit because Term 30(c) provides for complying with the Bay-Delta Plan unimpaired flow requirements, in lieu of Terms 30(a) and (b), once the Plan is updated with that path of implementation. That update is expected to happen this year (or at least many years before the Project is operational).

Notwithstanding the lack of necessity and other problems with these draft terms, if they remain in the Permit, the Authority has proposed the above-redline revisions to make them consistent with implementation of the non-VA Pathway regulatory provisions of the Draft Bay-

Delta Plan Updates, and to not impose solely on the Project a 55% unimpaired *Delta outflow* requirement until the Bay-Delta Plan is updated.[8]

ii. Rationale for Revisions to Terms 30(c) and (d)

Imposition of Term 30(c), when combined with Term 23, would result in a reduction to annual average diversions of approximately 26-34%. (Attachment A, p. 13; Attachment B, p. 10.) Given these unreasonable water supply impacts that would greatly risk rendering the Project infeasible, the Authority's above-referenced revisions appropriately address future determinations regarding whether the Authority's water right permit is subject to the non-VA Pathway regulatory provisions or VA Pathway provisions of the updated Bay-Delta Plan.

In this regard, for water rights *before* December 31, 2025, the non-VA Pathway regulatory provisions of the December 2025 Draft Bay-Delta Plan Updates propose water supply adjustments (WSAs) as a component of the inflow objective requirements. Consistent with the process afforded for adding water rights to the VA Pathway under section 4.4.9 of the Draft Bay-Delta Plan Updates, section 4.4.2.2 (see p. 46) should be revised to allow WSAs for new water rights obtained *after* December 31, 2025, to *alternatively* be addressed as part of the annual or periodic review process, as follows:

> For any water rights obtained on or before December 31, 2025, the starting point for the inflow requirement is reduced below 55 percent by the WSAs. Whether, and to what extent, WSAs are applied to water rights obtained after December 31, 2025, including any permits issued after that date pursuant to applications filed by the State under Water Code section 10500, will be addressed as part of the processing of those water right applications consistent with section 4.4.9.1, or alternatively, WSAs could be considered for approval by the Board as part of the annual or periodic review process, along with any necessary supporting environmental and scientific documentation or other documentation determined to be needed by the Executive Director, after notice and opportunity for public comment.

The Draft Bay-Delta Plan Updates recognize that the inclusion of newly issued water rights that are not initially listed in Appendix B.1 of water rights covered by the VA Pathway/HRL Program, can be considered for approval by the Board as part of the annual or periodic review process, along with any necessary supporting environmental and scientific

[8] Moreover, if Terms 30(a) and (b) are ever expected to govern actual operations of the Project, then the methodology under Attachment 4 of the Draft Permit may require revisions for technical accuracy and feasible implementation.

documentation or other documentation determined to be needed by the Executive Director, after notice and opportunity for public comment. (Draft Bay-Delta Plan Updates, § 4.4.9, p. 64.)[9]

The Draft Decision at page 118 (§ 4.3.2.5) states:

> If the Board updates the Bay-Delta Plan to include this Permit in the VA pathway, thus excepting the Permit from the Sacramento/Delta inflow and inflow-based Delta outflow requirements, Term 30, part (c), will apply and require compliance with the approved VA pathway provisions in lieu of the requirements of Term 30, part (b).

The Authority proposes adding a new VA Pathway paragraph as Term 30(d) consistent with this statement in the Draft Decision.

The Authority believes this is the most effective approach for reasonably protecting baseline flows while enabling the responsible development of new water supply projects like the Project. In furtherance of this approach, the Authority expects that at an appropriate time in the future it may request the water right permit for the Project be covered under the VA Pathway/ HRL Program. This is a reasonable and sound approach given that the Project is not expected to be operational for another 7-8 years and utilizing the periodic review process will allow for the Authority, the Board, and other interested parties to be informed by the then-existing regulatory landscape and best available scientific information.

iii. Rationale for Deletions of Term 30(d)

This term is understood to allow for a "crediting mechanism" when the more restrictive proposed diversion criteria under Term 23 would limit Project diversions beyond the limits imposed under Term 30(a). Even if this credit could be perfectly utilized with perfect foresight, the Authority could only recover approximately 4% of the diversion reduction due to Terms 23

[9] To the extent that section 4.4.9.1 of the December 2025 Draft Bay-Delta Plan Updates imply that the VA Pathway may not be available to the Project or other new water rights at an appropriate time in the future, the final version of that section should be revised as follows:

> To help ensure that water quality conditions, including existing flows, together with other measures in the watershed, supporting the Bay-Delta Plan's 2025 update continue to support and maintain natural production of viable native fish populations, in future water right actions the State Water Board will consider imposing requirements, based on the record established during the administrative proceeding, including any hearing, to ensure that the use of water is consistent with and supports the salmon protection, fish viability, inflow, inflow-based Delta outflow, and interior Delta flow objectives, or alternatively, may approve the inclusion of the water rights for new water supply projects in the VA Pathway water right list in Appendix B.1 in accordance with the preceding section 4.4.9.

and 30. (Attachment B, p. 9.) Given these unreasonable water supply impacts that would greatly risk rendering the Project infeasible, the Authority proposes deleting the Term 30(d) text, as noted above.

Moreover, the structure of this draft term is confusing, making it unclear how and when its various subparts operate and what they may require. Subpart (d)(ii) refers to Term 30(a) potentially prohibiting or limiting diversions, but if the Bay-Delta Plan is updated consistent with Term 30(c), then the Project will comply with those regulatory provisions *in lieu of* Terms 30(a) and (b). As such, once Term 30(c) is triggered, it appears that 30(d)(i), (ii), and (iv) would be inoperative. However, the Draft Decision at page 113 states as follows:

> *The flexibility in Permit Term 30(d) described above remains in effect if the Bay-Delta Plan is updated.* This provision allows the Authority to quantify the additional volume of water it would have been able to divert absent the project-specific bypass requirements in Term 23 and divert this quantity of water later in the same water year even if the 55 percent of unimpaired Delta outflow requirement is not met. If the updated Bay-Delta Plan includes specific provisions for flow shaping, however, then those provisions shall apply in lieu of the methodology described in Term 30(d)(ii).

(Emphasis added.) It is unclear if this section of the Draft Decision means that Term 30(d) remains in effect if Term 30(c) is triggered. If it is to allow for flexibility due to adaptive implementation such as flow shaping, then that could occur pursuant to the corresponding Bay-Delta Plan requirements, and there would be no need for Term 30(d)(iii) to remain operative.

The Authority appreciates the intent of the provision and believes that Term 30(d) type alternatives are better addressed in future analyses of whether the water right permit for the Project would be subject to WSAs for implementation of the non-VA Pathway regulatory provisions or will be included in the VA Pathway under the updated Bay-Delta Plan. The Authority looks forward to those future interactions with the Board and development of workable alternatives. For all these reasons, Term 30(d) and its subparts should be deleted.

b. Term 31

Imposition of Term 31 (including all of its subparts), when combined with Term 23, would result in a reduction to annual average diversions of approximately 28%. (Attachment A, p. 16; Attachment B, p. 13.) Given these unreasonable water supply impacts, that would greatly

risk rendering the Project infeasible with no verifiable corresponding ecosystem benefits, the Authority proposes the following revisions to Term 31, which will protect flow commitments provided under the VA Pathway:

> 31. If the Board updates the Bay-Delta Plan to include a VA Pathway, diversions under this Permit shall not interfere with the intended benefits to fish and wildlife beneficial uses of flow and non-flow commitments provided pursuant to the VA Pathway. ~~At a minimum,~~ tThe following conditions apply:
>
> ~~a. No diversion is authorized on any day when flow commitments provided pursuant to the VA Pathway are present in the mainstem of the Sacramento River.~~
>
> ~~b. No diversion is authorized on any day in which flow commitments provided pursuant to the VA Pathway are contributing to Delta outflow and Delta outflow remains below the sum of the Delta outflow requirement for diversion under Term 30 and the amount of VA Pathway flow commitments contributing to Delta outflow.~~
>
> a. For all days when Sacramento River HRL participants' flow commitments provided pursuant to the VA Pathway are present in the Bay-Delta watershed, the allowable diversions under this Permit shall be based on flow conditions absent any such Sacramento River HRL participants' flow commitments.
>
> ~~c~~b. The accounting methodology in the Bay-Delta Plan shall be used to determine when Sacramento River HRL participants' flow commitments are present in the Bay-Delta watershed~~mainstem of the Sacramento River~~, and the presence and amount of those flow commitments contributing to Delta outflow. During those years when Sacramento River HRL participants' flow commitments are provided pursuant to the VA Pathway and concurrent with diversions under this Permit, Permittee shall provide reports to the Deputy Director to substantiate Permittee's compliance with this term on a schedule that the Deputy Director determines is consistent with other reporting requirements in the Bay-Delta Plan.
>
> ~~d~~c. The Board reserves the authority to modify this term, following notice and opportunity for public comment, to ensure consistency with the Bay-Delta Plan and approved VAs.

Again, there is no support in the evidentiary record for imposing the maintenance of a 55% unimpaired Delta outflow requirement *plus* all VA flow contributions in the system before the Project can divert, or that any such requirement on one water right holder would reasonably protect beneficial uses in the Bay-Delta. Moreover, the hearing evidence confirms there would be limited impact from Project operations on VA flows or the Delta outflows to which proposed VA flows are additive. The Authority performed a quantitative analysis of how the Project diversions

could affect Delta outflow under the VAs and an analysis of how the Project diversions might interact with the VAs. (SITES-070c, ¶ 34; AHO-048; AHO-049.) These analyses indicate that potential Project diversions and VA flow assets have limited interaction because: (1) diversions to Sites Reservoir will occur during periods when flows are available above regulatory requirements, Project-specific requirements, and senior water right demands; and (2) VA flow assets are proposed to be deployed during times when additional flow is expected to be most beneficial to the system—primarily during March through May of Above Normal, Below Normal, and Dry years. (*Ibid*.; SITES-025c, ¶ 53.) The Project would result in a limited reduction in Delta outflow, which would primarily occur in the winter months and largely in Wet and Above Normal years. (*Ibid*.)

The Authority's estimates of potential changes to Delta outflow resulting from implementation of the Project under the 2024 Operations ITP were submitted to the AHO on November 3, 2025. The estimates for changes to Delta outflow during Dry year types are an annual average of -32 thousand acre-feet (TAF) and a January through June average of -65 TAF.[10] As the Authority has previously emphasized, these changes represent very small differences to annual average Delta outflow of -1.2% across all years, -1.4% in wet years, -1.7% in above normal years, -1.3% in below normal years, -0.4% in dry years, and -0.5% in critical years; and similarly small differences to January through June Delta outflow of -1.5% across all years, -1.4% in wet years, -2.1% in above normal years, -2.1% in below normal years, -1.1% in dry years, and -1.0% in critical years.[11]

Moreover, Project operations provide for releases and additive flows through the Delta during the low flow months resulting in additive ecological benefits. The Project would improve water quality by assisting with Delta outflow and preventing seawater intrusion. (AHO-003, p. 7;

[10] Jacobs Engineering, 2025, CalSim3 Modeling for Sites Project, Technical Memorandum, Table 8; supporting modeling spreadsheet file titled Sites_Metrics_CalSimII_ITP_Application_vs_CalSim3_ITP_102425 (submitted to the AHO on Nov. 3, 2025; see Sites Modeling Files FTP subfolder 5), Delta Outflow tab, cells AA31:AA36. The spreadsheet file refers to the Project baseline as the "CalSim 3 No Action" and the ITP run as the "CalSim 3 Sites Project."

[11] See Authority's Comment Letter re Revised Draft Sacramento/Delta Bay-Delta Plan Updates and Chapter 13 of Draft Staff Report (Feb. 2, 2026), available in AHO FTP folder as "2026-02-02 Sites PA BDP comments.pdf."

AHO-073, pp. 6-118 – 6-119.) Improvements in water quality would, in turn, support and increase water supply reliability for other beneficial uses designated by the water quality control plans including recreation, municipal, and agricultural supplies. (AHO-003, p. 7.) In addition, the Proposition 1 ecosystem benefits of the Project include providing water for Incremental Level 4 Refuge water needs for CVP Improvement Act refuges both north and south of the Delta. (AHO-005, p. 25; SITES-001, ¶¶ 11-23.) The Project could provide Incremental Level 4 Refuge water deliveries, which could occur in any water year type and at any time of year. (AHO-005, p. 25.) As the foregoing demonstrates, a rigid rule that requires flows to remain instream at the time they occur forecloses a potentially higher-value ecological outcome such as storing a limited amount of high flow water, diverted under highly protective conditions, and then that same water being returned to the Delta when flow scarcity, temperature stress, and ecosystem needs are greatest.

Term 31 is apparently designed to protect baseflows present in the system that are above the requirements of Board Water Rights Decision 1641 (D-1641), the operative biological opinions (BiOps) for long-term operations of the Central Valley Project (CVP)/State Water Project (SWP), and the VA flow commitments. In this regard, the Draft Decision at page 103 states:

> Base flows include flows required by D-1641, flows resulting from the 2024 Record of Decision and associated Biological Opinions for the Long-Term Operations of the CVP and SWP, and other regulatory requirements. ([AHO-337] at pp. 169, 171-172.) Base flows also include non-regulatory flows that are currently present in the system. (*Id.* at p. 75.) Flow commitments under the VA pathway are intended to provide net additive Delta inflow and outflow that is not only above existing requirements but above a baseline of required flow *and otherwise unregulated and uncaptured flow present in the Bay-Delta system at the time the HRL proposal was submitted.* (*Id.* at pp. 75, 169.)

(Emphasis added.) Similarly, the Draft Decision at page 114 states:

> If updates to the Bay-Delta Plan include a VA pathway for compliance, Project diversions may reduce the additive flows to Sacramento River inflow and Delta outflow provided by HRL flow commitments, and the underlying baseline to which those flows are intended to be added, absent appropriate terms and conditions to limit these impacts.

This, however, is an inaccurate description and characterization of the VA/HRL parties' proposal as to the baseline flows upon which VA flow commitments would be added. In this

regard, section 4.1 of the March 2022 Voluntary Agreements Memorandum of Understanding Term Sheet agreed to by the VA parties (which include the California Environmental Protection Agency [CalEPA] and California Natural Resources Agency [CNRA]) describes the VA baseline flows as follows:

> The VA flows described in Appendix 1 will be additive to the Delta outflows required by Revised Water Rights Decision 1641 (Revised D-1641) and resulting from the 2019 Biological Opinions, although the 2019 Biological Opinions may be modified, including to resolve litigation concerning those opinions.

(AHO-279, pdf p. 4769.) Ultimately, the Draft Decision at page 117 states:

> Term 31 prohibits reductions in HRL flows that would undermine short-term flow-shaping benefits, and limits impacts on net additive flow to Delta inflows and outflows on a seasonal timescale. Although Project diversions, when they occur, will necessarily decrease average Delta outflow with HRL flows on a seasonal basis – Term 30, Term 31, and the terms imposing project-specific bypass flow requirements, will avoid unreasonable impacts on fish and wildlife beneficial uses in the Sacramento River and Delta.

By imposing terms that essentially protect from diversion all "otherwise unregulated and uncaptured flow present in the Bay-Delta system" the Draft Decision is in effect declaring the Bay-Delta watershed (or at least the Sacramento River) fully appropriated, and doing so without adhering to the statutory notice and hearing requirements under Water Code section 1205 et seq. Unless and until the Board undertakes and completes such proceedings, it is unreasonable and against the public interest to shoulder the Project or other new water projects with protecting water that is available for appropriation. Instead, the Board should include a permit term to protect VA flow commitments in accordance with the Authority's above proposed revisions to Term 31.

c. Term 29

This draft term is apparently included to address potential salinity-related injury from diversions to storage, rather than being focused more broadly on Bay-Delta Plan compliance.[12] In this regard, the Draft Decision at pages 61-62 provides:

[12] The draft term is understood to apply to the following numeric objectives in the Bay-Delta Plan: Sacramento River at Rio Vista as listed in Table 3 of D-1641 and Table 3 of the Draft Bay-Delta Plan Updates at p. 17; Sacramento River at Emmaton (Western Delta) as listed in Table 2 of D-1641 and Table 2 of the Draft Updates at p. 15; Sacramento River at Collinsville (Eastern Suisun Marsh Salinity) as listed in Table 3 of D-1641 and Table 3 of the Draft Updates at p. 20; Delta Outflow as listed in Table 3 of D-1641, and Base Delta Outflows and Inflow-Based

Salinity-Related Injury from Diversions

> To protect beneficial uses in the Delta, this Decision conditions the Authority's diversions from the Sacramento River on attainment of the numeric water quality objectives for Sacramento River salinity and salinity-based Delta outflow in the Bay-Delta Plan. (Permit Term 29.) The Delta Parties also seek limitation of the season of diversion under the Permit to December 1 to March 31, to address an alleged up-to-117-day "long-term memory" of Delta salinity as affected by Sacramento River flows. (Exh. SDWA-72a, p. 13, ¶ 15.) The Delta Parties did not present evidence, however, that such a restriction on the diversion season is necessary to prevent salinity impacts if diversions are conditioned on compliance with water quality objectives and limited to times of relatively high flow as required by the bypass, pulse flow, and Delta outflow conditions already included in the Permit for fisheries protection. We conclude that the conditions on diversion requiring attainment of water quality objectives and bypass flows, which limit diversions to relatively high flow conditions, will prevent injury to downstream users from salinity impacts caused by Project diversions.

The Project should not be completely precluded from diverting when, for circumstances outside its control, any one of the listed numeric salinity objectives is not being met. Moreover, the permit term should provide for consistency with the Project water right either being subject to the updated Bay-Delta Plan's non-VA Pathway regulatory provisions or the VA Pathway in accordance with revised Terms 30(c) and (d) above. Assuming the Project will be contributing toward implementation of the Bay-Delta Plan under either of those pathways, such implementation would be consistent and in compliance with the numeric objectives. Accordingly, the Authority proposes the following revisions to Term 29:

> 29. ~~No diversion is authorized when any~~Diversions authorized under this Permit shall be consistent with the Permittee's implementation of the numeric Sacramento River inflow, Sacramento River salinity, or Delta outflow, including salinity-based Delta outflow objectives of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta Plan) in accordance with either the non-VA Pathway regulatory provisions or the VA Pathway provisions of the Bay-Delta Plan, and consistent with any future amendments of said numeric objectives~~thereto, are not being met~~.

2. The Proposed Additional Diversion Criteria Under Term 23 Should Be Removed as They Are Not Based on the Best Available Science and a Reasonable Balancing of Impacts and Public Interest Considerations

To ostensibly protect fish and other instream beneficial uses, Term 23 includes more restrictive flow-dependent diversion (FDD) criteria at the points of diversion (PODs), requires

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Delta Outflow as listed in Table 3 of the Draft Updates at p. 18; and Delta Outflow for Feb.-June as listed in Table 3 of D-1641 and Base Delta Outflows for February-June as listed in Table 3 of the Draft Updates at p. 18.

Bend Bridge Pulse Protection (BBPP) flows in addition to the FDD criteria, and increases the Wilkins Slough bypass flow requirements. These new terms and conditions are in addition to the highly restrictive diversion requirements already imposed on the Project by CDFW under the 2024 Operations ITP, which already substantially reduced the yield of the Project compared to the amount of water the Authority had proposed for diversion. CDFW is the state trustee for California's fish and wildlife resources (Fish & G. Code, §§ 702, 711.7(a), 1802), and CDFW already considered impacts to public trust resources in issuing its Operations ITP and protected those resources to the extent feasible. (*Environmental Protection Information Center v. Cal. Dept. of Forestry & Fire* (2008) 44 Cal.4th 459, 515 [CDFW's issuance of an ITP carries out the statutory public trust doctrine and overlaps with the common law doctrine].)

Notwithstanding CDFW's prior actions protecting the public trust resources, the requirements in Term 23 collectively further reduce Project diversions, releases, and deliveries by approximately 12-15%. (Attachment A, p. 7; Attachment B, p. 3.) As with the Bay-Delta Plan compliance terms discussed above, the Draft Decision includes no analysis of the effects of these permit terms on Project diversions, indicating that Term 23 also was not adequately scrutinized before being included in the Draft Permit. This contravenes the Board's obligations under Water Code sections 1243 and 1243.5 to contemporaneously consider whether fish and wildlife enhancement requirements are in the public interest, and to weigh the competing impacts on water supply and other beneficial uses.[13]

In addition, and as detailed below, the biological basis for Term 23 is poorly supported in the Draft Decision and not based on the best available science. By imposing draft terms that are inconsistent with the underlying data, the Draft Decision lacks a sufficient evidentiary and analytical basis to evaluate whether imposing additional diversion criteria is reasonable and supported by the record. In particular, the Draft Decision does not adequately demonstrate if or

[13] In this regard, the Draft Decision at page 70 selectively cites to D-1345 and D-1379 to support the limited proposition that "public interest considerations include the avoidance of unreasonable impacts on fish and wildlife." However, both Board decisions demonstrate that the Board must base its water right decisions on a comprehensive evaluation of ***all*** relevant public interest factors, which necessarily requires the contemporaneous consideration and balancing of competing beneficial uses including water supplies for irrigation, and municipal and industrial uses, etc. (See Order Amending D-1345 (Dec. 18, 1969), p. 2; D-1379, pp. 11, 28-33, 36-37.)

how Term 23 may provide meaningful benefits to fish and wildlife while significantly reducing Project diversions, releases, and deliveries—an outcome that is against the public interest.

In contrast, there is more than ample evidence in the record that Project diversions, without the additional diversion criteria under Term 23, will not result in an unreasonable effect on fish and wildlife given the substantial water supply reliability and drought resiliency benefits of the Project.

a. Term 23(a) Should Be Removed

Term 23(a) extends the FDD criteria at Red Bluff POD by applying the more restrictive limitations to January-February diversions at Red Bluff POD. It would reduce Project diversions, releases, and deliveries by (approximately 1-3%) (Attachment A, p. 6; Attachment B, p. 2), and unnecessarily impair the Project's ability to respond to climate volatility, based upon a purported biological basis identified in the Draft Decision thatlacks adequate scientific support.

In imposing Term 23(a), the AHO concluded that "the flow-dependent diversion criteria in the 2024 ITP for the Red Bluff POD that protect winter-run and spring-run Chinook salmon should be extended to the months of January and February." (Draft Decision, p. 81.) The AHO reasoned that "[e]xtending the heightened flow-dependent diversion criteria affords protection for fall-run salmon, whose outmigration as smolts primarily occurs from January through June." (*Id*., citing AHO-161, p. 45.) To support this reasoning, the AHO determined that "[a]pplication of the same flow criteria to protect fall-run as to protect spring- and winter-run is appropriate because the studies and analysis relied upon to identify flow criteria to protect spring- and winter-run used survival estimates of fall-run as surrogates." (*Id.*, citing SITES-301, p. 3, SITES-300, pp. 105-108.)

This determination is premised on inaccurate assumptions, contradicted by the evidence in the record. In general, a minority of fall-run Chinook salmon are present upstream of Red Bluff, and only that minority segment of the population has the potential to be exposed to near-field effects if migrating downstream as juveniles. (AHO-078, p. 185, Table 11-38 [mean of 35.2% of all adults, 34.0% of in-river adults during 2009-2020].) By contrast, all winter-run spawning occurs upstream of Red Bluff, and therefore all juveniles would swim downstream past the

intakes. (AHO-078, p. 11-90.) More than three-quarters of spring-run spawning (AHO-078, p. 11-155) and 60%-70% of fall-/late fall-run spawning (AHO-078, p. 11-187) occurs downstream of both PODs. Accordingly, potential effects would be limited to far-field effects for the majority of individuals of these other species. (SITES-104 at 4:6-10.)

Although the Draft Decision relies on data stating that outmigration as smolts primarily occurs from January through June, it fails to specify that such migration is from multiple locations. (Draft Decision, p. 81; AHO-161, p. 45.) The spring period has been the focus of analyses for smolt outmigration, which occurs after January-February. (BK-59, p. 16.) Pre-smolts/smolts are classified as >46/47 mm fork length and only move past Red Bluff from April onwards. (AHO-078, p. 11-188, fig. 11-20, showing both size of pre-smolts/smolts [fig. 11b] and size of fish [fig. 11c].) Because the spring period has been the focus of scientific analysis as it captures actual smolt outmigration, the Draft Decision's diversion criteria for January-February is tied to months when smolt outmigration is minimal or nonexistent. Accordingly, the imposition of Term 23(a) fails to address the relevant biological conditions and instead imposes restrictions during a period that provides little to no environmental benefit. Moreover, any uncertainty as to the potential effects of diversions on pre-smolt salmonids will be addressed pursuant to Operations ITP Condition of Approval 8.7.5, Pre-Smolt Juvenile Survival Program. (SITES-298, p. 31.)

The Draft Decision further supports imposing Term 23(a) by characterizing these protections as minimizing near-field impacts for other native species present near the Red Bluff POD during that timeframe, such as green sturgeon, which some Protestants asserted were particularly susceptible to impacts from inadequately screened diversions. (Draft Decision, p. 81, relying on SITES-300, p. 312 & BK-1, ¶ 94, p. 43.) In fact, SITES-300 does not refer to green sturgeon on page 312, although it does reference white sturgeon. Furthermore, it does not specify if this susceptibility applies to both Red Bluff and Hamilton City PODs. Earlier discussion in the SITES-300 indicates most spawning is in the Sacramento River between Knights Landing and Colusa (i.e., downstream of both PODs), with SITES-300 suggesting that white sturgeon

"presumably spawn upstream from the GCID oxbow in some years." (SITES-300, p. 52.) In any event, there is no mention of the Red Bluff POD. (SITES-300, pp. 52, 312.)

Beyond asserting that green sturgeon would be particularly susceptible to inadequately screened diversions, the cited portion of BK-1 (¶ 94, p. 43) lacks specificity. The rebuttal testimony of Dr. Marin Greenwood addressed Dr. Rosenfield's opinion that entrainment-related mortality of green sturgeon will increase, noting that Dr. Rosenfield cited the portion of the FEIR/EIS that illustrated limited differences between the Project and the No Action Alternative (NAA). (SITES-388 at 5:18-6:2.) Dr. Greenwood's case-in-chief testimony summarized the FEIR analyses to note that the Red Bluff fish screen approach velocity would be protective of larval and juvenile green sturgeon except during April and May (SITES-104, ¶ 23, p. 12). These opinions were based on published literature, including the seasonality of flow tolerance limitations of sturgeon (AHO-078, p. 243, fig. 11-23) and the timing of occurrence of early life stages at Red Bluff, *which does not include January-February* (AHO-078, p. 244, fig. 11-24).

Imposing restrictive limitations to January-February diversions at Red Bluff POD that la departs from the best available science based upon preference that lacks scientific support demonstrates a failure to adequately consider and balance competing beneficial uses, while instead seeking to maximize public trust uses as though they are paramount. For the foregoing reasons, Term 23(a) should be removed from the Draft Permit.

b. Term 23(b) Should Be Removed

Term 23(b) imposes BBPP flows, restricting diversions for 7 days when a pulse of over 8,000 cubic feet per second (cfs) occurs in the Sacramento River and includes resetting criteria to address multiple back-to-back pulse protection events. The impact on Project diversions, releases and deliveries is substantial, resulting in reductions of approximately 5% to 9%. (Attachment A, p. 6; Attachment B, p. 2.) Contrary to CDFW's prior determination to replace the BBPP flows with the FDD criteria in the final Operations ITP, Term 23(b) re-imposes the BBPP criteria in addition to the FDD criteria, and the Draft Decision fails to rationally explain this inconsistency.

In the Draft Decision, the AHO finds that "pulse flows meaningfully contribute to survival of migrating juvenile salmon, at least until base flows in the Sacramento River at Bend Bridge

reach approximately 24,720 cfs, as an annual average." (Draft Decision, p. 83, citing BK-1, ¶ 38(a), p. 18; BK-28, p. 15; BK-132, ¶ 26, p. 10.) BK-28 Figure 8(A) (p. 16) depicts the estimated effects of mean annual flow, interannual reach flow, and their interaction on predicted survival of juvenile winter-run Chinook salmon. Although the curve shown in BK-28 Figure 8(A) is presented as a continuous curve, the subsequent figure, Figure 8(B), provides important context. Figure 8(B) shows that these effects are based on four low-flow years of less than 300 cubic meters per second (10,500 cfs), in addition to one high-flow year of approximately 1,288 cubic meters per second (45,500 cfs). (BK-28 fig. 8(B), p. 16.) Accordingly, there is considerable uncertainty as to the potential positive effects of flows between these ranges. The FDD criteria from the Operations ITP already considerably constrain diversions at low flows, so additional restrictions are unlikely to produce meaningful incremental benefits. (SITES-298, pp. 46 [Table 2], 47 [Table 3].)

Moreover, the Draft Decision reasons that "[p]ulse flow protections in addition to flow-dependent diversion criteria will further reduce fish screen exposure, thereby reducing fish mortality caused by Project operations." (Draft Decision, p. 83.) However, the best available scientific information discussed in Dr. Greenwood's testimony did not indicate that near-field exposure would increase mortality because of screen effects such as entrainment, impingement, or predation. (SITES-104, ¶¶ 6-8, p. 4-5). That testimony also notes that the Red Bluff and Hamilton City fish screens are existing, authorized fish screens that have undergone extensive study to ensure that they meet National Marine Fisheries Service (NMFS) and CDFW fish screen performance criteria under a range of flows in the Sacramento River. (SITES-104 at 4:13-16.) CDFW's Operations ITP effects analysis also cited the study of Notch et al. (2020) showing 100% survival of juvenile fall-run Chinook salmon through the Hamilton City oxbow channel. (SITES-300, p. 131).

The best available data recognizes that there is uncertainty in the potential for near-field effects, and the Operations ITP requires a number of studies to address these concerns. As summarized in Dr. Greenwood's Supplemental Written Testimony:

> The Operations ITP includes several CoA [Conditions of Approval] that are science study actions designed to fill knowledge gaps and inform potential future actions to minimize juvenile salmonid take at the Red Bluff and Hamilton City intakes related to entrainment and impingement, as well as predation which was also discussed in my prior testimony. (Exh. Sites-104, p. 5.) CoA 8.7.1 (Juvenile Salmonids Survival Study Program [Exh. Sites-, pp. 27-28]) requires development and implementation of a plan to determine through study whether juvenile salmonids experience higher mortality due to fish screen exposure during Project operations. CoA 8.7.2 (Predator Study Program [Exh. Sites-298, pp. 28-29]) requires development and implementation of a plan to estimate predator abundance and spatiotemporal distribution around the two intake locations to determine whether predators aggregate at or near the screens and associated structures. CoA 8.7.3 (Long-Term Salmonid Monitoring Program in the Hamilton City Oxbow Channel [Exh. Sites-298, pp. 29-30]) includes reinstatement of long-term, continuous, rotary screw trap monitoring in the Hamilton City oxbow to monitor passage of juvenile salmonids through the oxbow, which, in combination with the studies required under CoA 8.7.1 and 8.7.2, will allow estimates of take to be made and inform life cycle models, which CDFW noted will contribute to minimization of take and may inform potential Operations ITP amendments, if warranted (Exh. Sites--300, p. 324). These studies are consistent with the monitoring and technical studies proposed in the ITPAO. (Exh. Sites-104, pp. 5-6.)

(SITES-312, ¶ 7.)

The Draft Decision reasons that "even with the 2024 ITP criteria, spring-run Chinook will have significant screen exposure at the Red Bluff intake—as calculated by CDFW, the exposure will remain 269 percent greater than without Project diversions." (Draft Decision, p. 83, citing SITES-300, p. 318, Tables 5-2 & 5-3.) The Draft Decision further states that "[i]n addition, fall-run and late-fall-run salmon out-migrate past Red Bluff in high abundance from January through April, largely overlapping the anticipated timing of most Project diversions from December through March. (Draft Decision, pp. 83-84, citing SITES-395c, ¶ 23, pp. 10-11; AHO-162, pp. 22, 31 [figs. 11A1-19, 11A1-28].)

In fact, CDFW's analysis includes an assumption that screen exposure rate is proportional to the percentage of Sacramento River flow being diverted, which assumes that fish are evenly distributed. But there are no studies cited by CDFW supporting the assumption of even distribution or that exposure is (directly) proportional to the percentage of flow diverted. (SITES-300, pp. 89-92.) Various factors can affect the distribution of fish, such as bathymetry. (AHO-078, p. 90.) CDFW's analysis provides no context as to the proportion of all individuals that could be exposed based on the assumptions in the analysis. But such context can be gleaned from the total juvenile fish passage at Red Bluff rotary screw traps, which is shown in AHO-162

(winter-run Chinook salmon, p. 4 [fig. 11A1-1]; spring-run Chinook salmon, p. 13 [fig. 11A1-10]; see red bars on the right of each plot). The total annual passage of winter-run by year at Red Bluff is typically around 1 million fish or more each year (AHO-162, p. 13, fig. 11A1-10), whereas the total exposures—which do not have supporting evidence to be indicative of negative near-field effects—are only around 1-2 million fish over the course of the 15 years of data. (SITES-300, p. 315, Table 5-1a.)

Similarly, the total annual passage of spring-run at Red Bluff is typically around 200,000 fish or more each year (AHO-162, p. 13, fig. 11A1-10), whereas the total exposure—again, not necessarily indicative of any negative effects—is less than 300,000 fish across all 15 years. Similar to what is noted above, only a portion of spring-run juveniles are spawned upstream of the Red Bluff and Hamilton City POD's (e.g., during 2009-2020, a mean of 7.1% of adults occurring in-river or 3.6% of all spring-run, including hatchery fish; AHO-078, p. 153, Table 11-32) and so any impacts occurring would be on a low percentage of a subset of the population. Therefore, regardless of operational criterion (e.g., FDD vs. pulse protection vs. No Action Alternative [NAA]), the exposures are a low percentage of fish in population terms.

In support of reimposing the BBPP flow requirements, the Draft Decision reasoned that CDFW did not analyze how combining the two approaches could further reduce impacts on fish. (Draft Decision, p. 84.) However, the Draft Decision at pages 83-84 presupposes that (1) fish would be exposed in direct proportion to water diverted, (2) such exposure equates to negative effects (take)—both of which are not supported by evidence; and in any event, various studies will be undertaken pursuant to the 2024 ITP to fill information gaps regarding the potential effects.

Finally, imposing the BBPP criteria without analysis of the substantial water supply impacts, as identified in the accompanying technical memoranda, reflects a failure to meaningfully balance all of the public interest considerations at issue. For the foregoing reasons, Term 23(b) should be removed from the Draft Permit.

c. Term 23(c) Should Be Removed

Term 23(c) increases the Wilkins Slough bypass flows required under the Operations ITP from 10,930 cfs to 14,125 cfs during December 1 through April 30 each year. The resulting effect on Project diversions, releases, and deliveries are reductions of approximately 7%. (Attachment A, pp. 6-7; Attachment B, p. 3.)

The AHO determined that a seasonal Wilkins Slough bypass flow of 14,125 cfs from December through April is necessary to cue the outmigration of Chinook salmon and avoid impacts that may occur from a delay in migration. (Draft Decision, p. 87.) However, the del Rosario et al. study, which is the foundational study for the Term 23(c) criterion, only considered winter-run-sized Chinook salmon and did not include other runs. (BK-21, pdf p. 2.) The flow threshold of 14,125 cfs (400 cubic meters per second) never occurred after January in the years included in the del Rosario et al. study. (BK-21, pdf p. 13, fig. 5.) Accordingly, there is no support in the record for such a criterion applying to the months of February-April.

Moreover, the del Rosario et al. study was based on 1999-2007 data (BK-21, pdf p. 10, fig. 3) and is not necessarily representative of contemporary migration patterns. Before imposing the higher bypass flow requirements, there should be studies of whether this migration pattern holds using more recent data. In addition, the del Rosario et al. study only examined relatively broad increments in flow thresholds (~3,500 cfs [100 cubic meters per second]). (BK-21, pdf p. 11.) Given the negative impacts to water supply, before any such term is imposed there should be studies of contemporary thresholds at a finer resolution of flow (e.g., 500 cfs increments).

The del Rosario et al. study cited in the Draft Decision does not include 14,125 cfs as a management threshold to be achieved or protected. (BK-21, pdf pp. 19-20.) The del Rosario et al. study states: "Because the quantity and timing of flows are key to providing habitats available for winter-run to rear in the Delta, any proposal to reduce Sacramento flows coming into the Delta, or to further modify the flow patterns from the natural hydrograph, will likely affect the migratory success of winter-run and the viability of this endangered species." (*Ibid.*) However, such effects on Delta habitat were in fact analyzed for the Project, and there is

protection and management of habitat required by the Operations ITP to fully mitigate impacts. (SITES-300, p. 357.)

The Winter-Run Chinook Salmon Life Cycle Model captures the effects of the 14,125 cfs threshold (SITES-132, pp. 10-11) and therefore is part of the modeling considered by CDFW, with the results showing limited differences in mean escapement between Project and NAA scenarios. (SITES-300, pp. 248–256.) The Operations ITP includes Conditions of Approval that minimize and fully mitigate all impacts to winter-run without CDFW identifying a need to impose 14,125 cfs as a threshold. (SITES-300, pp. 309-342, 345, 348-351, 357.)

The Draft Decision does acknowledge the unreasonableness of imposing the even higher Wilkins Slough bypass flow requirements requested by some Protestants, stating as follows:

> *Moreover, the reduction in impacts on migrating salmon must be weighed against the significantly reduced opportunities for diversion*. During the period of analysis used in the Authority's ITP Historical Analysis water availability tool, flows at Wilkins Slough met or exceeded 14,125 cfs on 1,362 days while flows at Wilkins Slough met or exceeded 24,720 cfs on only 479 days. (Exh. Sites-335R [based on Wilkins Slough flow values in column AC of sheet titled "WAA"].) We decline to impose such a bypass as a condition of diversion at this time ... .

(Draft Decision, p. 88, emphasis added.)

However, the Draft Decision neglects to provide a similar comparison between when flows at Wilkins Slough met or exceeded 10,930 cfs versus 14,125 cfs. Under the ITP Historical Analysis water availability tool, flows at Wilkins Slough met or exceeded 10,930 cfs on 1,944 days while flows at Wilkins Slough met or exceeded 14,125 cfs on only 1,362 days (a reduction of 582 diversion days). The table below identifies the reduction in diversion days as the bypass flow amounts increase:

Flow (cfs)	**Days in total period of analysis (1/1/2000-9/30/2024)**	**Days in Draft Permit's proposed restricted season of use period (11/1-6/14)**
> 0	9,040	5,569
> 10,930	1,944	1,919
> 14,125	1,362	1,359
> 24,720	479	479

(See SITES-335R [based on Wilkins Slough flow values in column AC of theWAA].)

This difference of 582 fewer diversion days, which results in significantly reduced opportunities for diversion, must also be weighed against the potential reduction in impacts on migrating salmon. Upon weighing these other public interest considerations, the Board should similarly decline to impose the proposed increased 14,125 cfs bypass flow as a condition of diversion at this time, particularly when CDFW has thoroughly analyzed and approved the 10,930 cfs bypass flow requirement. (SITES-300, pp. 248-256.)

For the foregoing reasons, Term 23 should be removed entirely from the Draft Permit. At the very least, Terms 23(b) and (c) should be removed given the substantial water supply impacts of those terms and the poorly supported determinations of unreasonable impacts on listed and non-listed fish species that are not based on the best available science.[14]

3. The Draft Terms Identifying Purposes of Use and Places of Use Should Be Corrected

The Draft Permit terms and conditions should be revised to include the Authority's entire Project place of use as depicted and described in the Authority's May 11, 2022 Application, including the specifically identified "instream" reaches, and include "water quality" and "fish and wildlife preservation and enhancement" as Project purposes of use. (AHO-001, pp. 18-20; AHO-005, pp. 2-4; AHO-21, p. 21.) The Draft Permit terms and conditions restrict the fish and wildlife preservation and enhancement purposes to only areas within the Refuge Water Supply Program (RWSP) of the Central Valley Project Improvement Act (CVPIA), and do not include the flexibility needed to include these purposes of use within the entirety of the place of use of the Project.

The Draft Decision states:

> [T]he Authority proposes fish and wildlife preservation and enhancement … and water quality as incidental purposes of use because of potential benefits associated with downstream deliveries of water from Sites Reservoir. [Exh. AHO-001, p. 18]

[14] If only 23(b) and(c) are removed, then Term 23(d) should be revised as shown below.

> ~~d~~b. The Executive Director may amend this term ~~at the request of Permittee~~based on new information and without a petition for change by the Permittee if, after notice and opportunity for public comment, the Executive Director determines and CDFW concurs in writing that the amended term will prevent unreasonable effects on fish and wildlife, including listed species under the California Endangered Species Act (CESA) and non-CESA listed species.

> …. [P]otential associated benefits of project operations are not purposes of use, and do not require authorization through inclusion in the Permit. Therefore, incidental fish and wildlife preservation and enhancement and water quality are not included as incidental purposes of use in the Permit. The application also describes an instream place of use for these incidental purposes of use. (Exh. AHO-001, pp. 20-21.) The instream place of use associated with the above incidental uses is not included in the Permit.

(Draft Decision, p. 165.) However, as clarified in the Authority's April 10, 2026, letter to the AHO regarding the Project's Water Storage Investment Program Benefits, the Authority and CDFW are coordinating on providing water to enhance seasonal wetlands, permanent wetlands, and riparian habitat for aquatic and terrestrial species on State and Federal wildlife refuges and on other public and private lands. The Authority wants to ensure that it can help achieve the ecosystem benefits associated with serving water for these evolving uses. By authorizing fish and wildlife enhancement purposes of use throughout the entire Project place of use, consistent with the application's request, the Authority will be able to help achieve these benefits. While there are fish and wildlife preservation and enhancement as well as water quality benefits associated with downstream deliveries of Project water for the primary purposes of use identified in the Draft Permit, the draft terms unnecessarily remove or restrict the option for Storage Partners to provide such benefits within the full scope of the Project place of use.

Notably, including "water quality" and "fish and wildlife preservation and enhancement" as purposes of use and specific "instream" reaches as applicable places of use are appropriate and necessary to ensure Reclamation's participation as a Storage Partner which would, in part, achieve anadromous fish benefits. (Authority's Closing Brief at 42:4-20.) The Authority's application expressly "includes all the purposes of use that are in the CVP water right permits and licenses to ensure that any use by Reclamation of Project water as part of Reclamation's investment in the Project is allowed for in the Authority's water right." (AHO-005, p. 26.) Importantly, Reclamation may deliver some of its Project water to refuges under the CVPIA and/or dedicate some of its Project water to Delta outflow (as either a water quality or fish and wildlife preservation and enhancement benefit). The Authority's application confirmed:

> Reclamation is a Storage Partner, which requires that the Authority include the CVP place of use so Project water can be delivered as needed to any CVP contractor or CVP purpose that Reclamation can physically serve with Project water. The State

> of California is also a Storage Partner for ecosystem benefits, which requires that the Authority include the refuges that receive water under the Central Valley Project Improvement Act … in the Project water right place of use."

(AHO-005, p. 3.) Providing consistency between the purposes of use and places of use for which the Project is authorized is essential to ensure that the Project achieves the intended public benefits. Accordingly, the Authority requests revisions to Terms 3 and 4 to provide the full scope of purposes of use and places of use requested in the Authority's application and to accommodate the more recent discussions with CDFW related to the Water Storage Investment Program Benefits.

4. Terms 5 and 7 Limiting the Maximum Annual Volume, Season of Diversion and Maximum Rate of Diversion

Given the detailed and robust WAA discussion regarding these terms set forth in the Authority's Closing Brief in this proceeding, the Authority disputes that the additional limits in these proposed permit terms, which reduce the diversion period and amounts the Authority applied for, are necessary and in the public interest. Specifically, as to the limits on the season of diversion under Term 5, the Authority's WAA demonstrates unappropriated water is available during the proposed diversion season of September 1 through June 14. (See, e.g., SITES-334R, pp. 15-16.) Moreover, the 2024 Operations ITP diversion criteria will be protective during that entire proposed season of diversion and in all water year types, and will operate to reduce or limit diversions during the season of diversion based on observed hydrology and flow conditions. In any event, the diversion season would ultimately be modified (or not), as appropriate, at the time that any issued permit proceeds to license. (Wat. Code, §§ 1610, 1610.5.)

Notwithstanding the above, because these draft permit terms would have a de minimus effect on Project diversions that could otherwise occur under the 2024 Operations ITP, the Authority is not proposing that they be removed or modified. As to the 986,000 cfs maximum annual volume of diversion allowed under Term 5, the Draft Decision at page 50 also acknowledges that the Authority could timely apply for a temporary permit under Water Code section 1425 et seq. in an anomalous year where the annual volumetric limit might constrain diversions.

5. The Draft Decision and Draft Permit Are Inconsistent with the California Water Plan

Issuance of a water right permit requires consideration of consistency "with the California Water Plan or any other general or coordinated plan for the control, protection, utilization, or conservation of the water resources of the state … ." (Draft Decision, p. 26.) The Draft Decision acknowledges the Board's required consideration of public interest, which includes consideration of "any general or coordinated plan prepared and published by the Department of Water Resources for the management of water resources of the State, such as the California Water Plan." (Draft Decision, p. 152, citing Wat. Code, § 1256.)

The Authority has previously detailed the Project's consistency with the California Water Plan, as set forth in the Authority's Petition for Partial Assignment (AHO-002), Petitions for Release from Priority (AHO-003), and its prior briefing in this proceeding. (Authority's Closing Brief at pp. 13-15.)

Recent legislation further reflects the Project's consistency with statewide efforts to increase water storage capacity, particularly through the strategies outlined in the "Making Conservation a California Way of Life" regulation (23 CCR § 965 et seq.), which incorporate the California Water Plan and the Governor's Portfolio. Specifically, SB 72 requires DWR to include in the 2028 Water Plan an "interim planning target of 9,000,000 acre-feet of additional water, water conservation, or water storage capacity to be achieved by 2040." (Wat. Code, § 10004.6(f).) This target must consider identified and future water needs "for all beneficial uses" as well as "reflect statewide, regional, and local planning efforts." (*Id*. § 10004.6(a)(2).) The Project is a necessary element of new surface water storage to reach this legislative goal.

The Draft Decision concludes that approval of the appropriation is in the public interest, in part, because it is consistent with the 2023 California Water Plan. (Draft Decision, p. 153.) However, undercutting this conclusion, the Draft Decision and Draft Permit unnecessarily constrain the capacity of the Project as described above, thereby limiting the Project's contribution to the State's long-term water supply planning targets. This is plainly inconsistent with the 2023 Water Plan, the recently enacted SB 72, and the direction of the 2028 Water Plan.

Accordingly, revisions to the Draft Decision and Draft Permit, as discussed herein, are necessary to provide the required consistency.

B. The Evidence in the Record Supports Designation of Funks and Stone Corral Creeks as Water Sources with a Season of Diversion from January-April

1. Draft Decision Language Regarding Funks and Stone Corral Creeks

The Draft Decision excludes Funks Creek and Stone Corral Creek (collectively, "Creeks") as a water source "because the Authority did not submit sufficient information to demonstrate that water is available for appropriation from the Creeks." (Draft Decision, p. 37.) Specifically, the Draft Decision excludes the Creeks because the Authority did not submit evidence that water is available for appropriation from the Creeks after considering downstream supply and demand on the Colusa Basin Drain (CBD). (*Id.*, p. 52.) The Draft Decision provides that the Authority "may file a future application to appropriate water from the Creeks supported by a water availability analysis that includes downstream demands for water in the Colusa Basin Drain." (*Id.,* pp. 37-38; see also *id.* p. 53.)

2. The Authority's WAA for the Creeks Demonstrates Unappropriated Water Is Available January-April

Substantial evidence exists to support a determination that water is available from the Creeks from January-April. The Board can issue a permit to appropriate water when there is "unappropriated water available to supply the applicant." (Wat. Code, § 1375(d).) "Unappropriated water" is water that has never been appropriated, has been appropriated and is no longer being appropriated, and water appropriated that returns to the watercourse. (*Id.*, § 1202.) In determining the amount of water available for appropriation, the Board must also take into account, when it is in the public interest, the amount of water required for recreation and the preservation and enhancement of fish and wildlife, as well as the amount of water needed to remain in the source to protect other beneficial uses. (*Id.*, §§ 1243, 1243.5.)

The WAA for the Creeks estimates unappropriated water at the proposed POD located on each creek (i.e., at Golden Gate Dam on Funks Creek and at Sites Dam on Stone Corral Creek). The WAA uses estimated streamflow data as available supply and the face value of downstream

water rights on each creek as the corresponding demand to complete the water availability calculation. (SITES-025c, ¶ 25; AHO-039, pp. 29-32.) The demand analysis includes Glenn-Colusa Irrigation District's (GCID) and Maxwell Irrigation District's water rights along the Creeks (A012125, A011958, A030445 [75 cfs]), as well as several small demands associated with statements of diversion and use. These demands often exceed available flows in the Creeks. (AHO-041.)

MBK Engineers reasonably decided to not include water supplies and demands downstream of the confluence of Stone Corral Creek and the CBD (in the CBD, Sacramento River, and Delta) in the WAA for the Creeks. (AHO-039, p. 32.) This decision was based, in part, on the physical configuration for each creek, which results in available flow on the Creeks being routed into local irrigation canals or drains under most conditions. (*Ibid.*; SITES-058c, ¶¶ 16-17.) Additionally, Funks Dam, which is located on Funks Creek at Funks Reservoir, remains closed except during large storm events when the gates are opened to pass flood waters. (SITES-058c, ¶ 16.) For these reasons, downstream water rights typically do not have access to flows on either creek. (AHO-039, p. 32.) As a protection for any downstream demands that may have access to flows from the Creeks in unique conditions, the WAA assumes that water is only available on the Creeks when the Delta is in an excess condition.[15] (*Ibid.*)

With these assumptions, the WAA shows that water would be available between January-April in the Creeks at the PODs that has never been appropriated (because the PODs are upstream of the demands included in the WAA). (AHO-039, pp. 47-48.) The Authority requests that the Board include Funks and Stone Corral Creeks as sources of diversion and Golden Gate and Sites Dams as PODs in the Project water right permit with a diversion season from January-April. Ultimately, during this limited diversion season, diversions on the Creeks would be governed by water-right priority, including downstream on the Creeks and the CBD. In addition to the proposed bypass criteria for the Creeks and any future bypass requirements to be developed, the

[15] As a protection for any fish and wildlife demands on the Creeks that must be satisfied pursuant to Water Code section 1243 or 1243.5, the Authority will prepare the Technical Studies Plan and Creeks Operations Plan described in Application 25517X01, which the Authority must prepare and implement pursuant to Term 20. The Technical Studies Plan and Creeks Operations Plan are described in AHO-039 at pages 37-38, AHO-108 at pages 51-57, SITES-058c, and SITES-060.

Authority would have to bypass Creek flows during periods when downstream flows are insufficient to meet senior downstream demands and any rights that the Authority has subordinated the Authority's permit to.

3. Substantial Evidence in the Record Indicates that Granting the Authority a Permit to Divert from the Creeks from January-April Poses Little Risk to Water Users on the CBD and Downstream

The risk to water users on the CBD of granting a January-April diversion season is low because at least, approximately 80% of the face value demand of the water rights on the CBD downstream of the confluence with Stone Corral Creek falls outside of the proposed January-April diversion season. (AHO-047; AHO-042 [WR Demand].)

The Draft Decision observes that there are no (other) readily available estimates of the amount of water in the CBD in addition to flows from the Creeks, and that there are over 50 water rights along the CBD downstream of its confluence with Stone Corral Creek authorizing diversions in amounts up to 42,500 acre-feet (AF)/yr. (Draft Decision, p. 52.) Annual average discharge at the Highway 20 gage on the CBD for period 1998-2025 was 453,000 AF.[16] It is further estimated that over 45% of this annual average flow occurs during the proposed January through April diversion season. (*Ibid.*) Given the fact that flows from the Creeks rarely reach the CBD (as discussed above), this quantity of discharge at Knights Landing is largely comprised of water from sources other than the Creeks. Thus, on average, there appears to be adequate water in the CBD to supply the demands associated with these 50+ water rights.

The Draft Decision highlights evidence from Mr. Ornbaun in an attempt to show that, at times, flows in the CBD are insufficient to meet downstream demands. However, ORNBAUN-004 (p. 1), showing flow in the CBD near Highway 20 for 2021, appears to show water was unavailable for two months starting in June. This is well after the Authority's requested season of diversion of January-April. The Draft Decision also cites photographic evidence from T&M King Farms purportedly showing "low" water levels in the CBD. KING-52 does not show "low" water levels at any of the three locations, and two of the locations are on the

[16] California Data Exchange Center (2026), Colusa Drain Near Highway 20 (CDR). Sensor number 20. Retrieved March 23, 2026, at https://cdec.water.ca.gov/dynamicapp/staMeta?station_id=CDR.

Creeks. KING-54 shows a significant quantity of water upstream of Davis Weir on May 14, 2024, indicating that any insufficiency in supply that may have existed downstream of the Davis Weir was not due to lack of flow, but rather operation of the Davis Weir bladder dam, which is not something that the Authority can control. Additionally, the picture in KING-55 taken on May 14, 2024, shows the CBD at Hahn Road, which is downstream of the Davis Weir. Again, low flow at this location was due to operation of the Davis Weir bladder dam, not lack of flow in the CBD or the Creeks. Additionally, Mr. King did not provide any evidence of flow conditions in either creek at or upstream of the proposed dam sites. Thus, none of this evidence from Mr. Ornbaun or Mr. King supports excluding the Creeks as sources of water with a diversion season of January-April.[17]

The Face Value Analysis did not specifically analyze water availability on the Creeks and CBD because the available data and assumptions for that tool did not allow for such granularity. Nonetheless, water rights along the CBD are accounted for in the analysis (mostly in the Sacramento-Stone Corral hydrologic unit) and the supply from the Creeks is assumed to be included within the Sacramento Valley floor unimpaired flow subbasin. Accordingly, the supply

[17] The Draft Decision's reliance on T&M King Farms, LLC's photo exhibits (KING-52, 54, & 55) is unreasonable and misplaced, and those exhibits should be afforded no weight. T&M King Farms did not submit testimony sufficient to support the conclusion the AHO draws from these photos, specifically, "that flows in the Colusa Basin Drain are, at times, insufficient to meet … downstream needs." (Draft Decision, p. 52.) There was no written testimony submitted in the case-in-chief portion of this proceeding that supported—or even referenced—these exhibits. (See KING-68; see also AHO Procedural Ruling on Evidentiary Motions, Case-In-Chief, Jan. 22, 2025, p. 62 [excluding KING-68 except for paragraphs B.3 and C.7].) During oral testimony in the case-in-chief portion, Mr. King testified only that he submitted "pictures of the flows of the Colusa Basin Drain on May 14th, 2024," which he expressly states are a result of "how the Davis Weir has been operated by GCID," not from any natural condition, nor any condition within the control of the Authority. (CIC Tr. Comb. 4178:9-19; see also CIC Tr. Comb. 686:17-20 [the Authority's expert witness Angela Bezzone testified in response to cross-examination by T&M King Farms, "It would not be an obligation of the Sites Authority to release more water than was flowing in from those creeks or at a time when water was not available from those creeks."].) Mr. King was also appropriately prohibited from attempting to testify while cross-examining Authority witnesses on these photographs. (CIC Tr. Comb. 689:3-6.) During rebuttal, T&M King Farm's written testimony repeats complaints of actions by entities other than the Authority affecting flows below the Davis Weir dam, and allegedly impacting aquatic life. This is the only reference to KING-54 and the other photographs in written testimony, which does not provide sufficient information to establish a foundation for these exhibits. (KING-84c; see also AHO Procedural Ruling on Evidentiary Motions – Incidental Take Permit, Rebuttal, and Claimed Water Rights, Apr. 18, 2025, p. 36 [sustaining the Authority's evidentiary objection to KING-84c, in part, and stating that "the hearing office will consider the Authority's objection if and when relying on any of the statements for evidentiary value in the draft decision"].) T&M King Farms did not address these photographs in oral rebuttal testimony. In summary, T&M King Farms did not submit "evidence" that the AHO can reasonably rely on to support the alleged condition of low water levels in the CBD that are allegedly insufficient to meet downstream needs.

from the Creeks and all potential demands are implicitly accounted for in the Face Value Analysis. (AHO-047.) The Face Value Analysis found that water is available for appropriation. Similarly, the Division of Water Right's WAA Tool did not specifically analyze water availability on the Creeks but does include water rights along the CBD and is assumed to account for supply from the Creeks within the Sacramento Valley floor unimpaired flow subbasin. (AHO-042.) The Division's WAA Tool found that water is available for appropriation.

Importantly, the Authority will only divert from the Creeks when Term 91 is *not* in effect. Moreover, the Authority has entered into a Memorandum of Understanding with Maxwell Irrigation District to avoid any injury to Maxwell's water rights along the Creeks. (CIC Tr. Comb., at 253:24-254:5, 343:2-10.) The Authority anticipates entering into a similar agreement with the Colusa Drain Mutual Water Company to avoid similar injury to water users along the CBD.

C. Term 46 Should Be Revised to Conform with Existing Regulatory Authorizations for Rediversion of Non-CVP/SWP Project Water at the Export Facilities

Term 46 states that:

> No rediversion of water at the Export Facilities shall occur until the numeric water quality objectives in the Bay-Delta Plan, as it may be amended are met.

The Draft Decision states that Condition 43[18] would prohibit rediversion of Project water "through the Delta Export Facilities when measured EC levels at the three interior southern Delta compliance locations exceed the 2018 Bay-Delta Plan year-round objective of 1.0 mmhos/cm (1.0 dS/m)." (Draft Decision, p. 64.) While an EC level of 1.0 mmhos/cm (1.0 dS/m) year-round objective may be the appropriate benchmark for evaluating injury to agricultural water users in the southern Delta, as the Draft Decision notes at pages 62-63, Term 46 would conflict with current regulatory requirements for operation of the Export Facilities.

Rediversion of Project water at the Export Facilities would occur within the regulatory framework that the SWP and CVP operate under. (DWR-005, ¶¶ 10-13; SITES-395c, ¶¶ 44-46; SITES-070c, p. 4, fn. 6.) The SWP and the CVP are the only entities with implementation

[18] Presumably, the AHO intended to refer to Term 46.

responsibility for quantitative water quality objectives in the Delta. The SWP and CVP must comply with the numeric water quality objectives that are contained in D-1641, which are not necessarily the same as the Bay-Delta Plan. Therefore, DWR is not authorized to redivert Project water at the Export Facilities if the 2018 Bay-Delta Plan salinity standard is met, but the D-1641 salinity standard is not met.

For these reasons, Term 46 should be revised as follows:

> No rediversion of water under this Permit at the Export Facilities shall occur ~~until the numeric water quality objectives in the Bay-Delta Plan, as it may be amended are met~~ when DWR and Reclamation are deemed to be out of compliance with the objectives currently required of DWR and Reclamation set forth in Tables 1, 2, and 3 on pages 181 to 187 of State Water Board Revised Decision 1641 (D-1641), or any future State Water Board order or decision implementing Bay-Delta water quality objectives at those plants.

D. Term 49 Should Be Revised for Consistency with Existing Permits and Board Orders

Term 49 conditions rediversions of Project water at the Export Facilities on the existence of "water depths" in the Delta channels adequate to support diversion by reasonable methods pursuant to any valid senior right. Term 49 also provides for the Board's Executive Director to approve, after an opportunity for public comment: water depths at measurement locations in consultation with South Delta Water Agency (SDWA) that demonstrate adequate water depths to prevent injury or a physical solution to prevent injury to senior right holds with written concurrence from SDWA. Upon approval of one of these approaches, water may be rediverted when the depths are met or a physical solution is implemented. Alternatively, the Executive Director may approve a regulatory program to manage operation of the Export Facilities to prevent injury from inadequate water depths in the Delta channels. Such a program may include a regulation or an approved comprehensive plan.

1. There Is No Evidence in the Record that a 1.2-Inch Drop in Water Levels in the South Delta Would Injure any Specific Diverter

The Authority's modeling shows reductions in minimum water levels in the South Delta within 0.1 feet (or 1.2 inches) of the no-project alternative. (SITES-110, ¶ 24; SITES-256, ¶¶ 19-22.) In the analysis underlying Term 49, the Draft Decision concludes that "the Authority's proposed diversions will tend to contribute to lowered water levels in the southern Delta that may

injure legal users absent appropriate conditions on Project operations." (Draft Decision, p. 55.) With respect to the extent of the modeled reduction in water levels associated with rediversion of Project water, the Draft Decision states:

> There appears to be no dispute that operation of the Delta Export Facilities impacts water levels in the southern Delta, and that Project operations will, at times, decrease water levels in the southern Delta by some amount. (See 2025-05-27 Sites Closing Br., pp. 33:28-34:1; Exh. Sites-110, ¶ 24; Reb. Tr. Comb., pp. 737:23–738:4; Exh. SDWA-80.)

(Draft Decision, p. 55.)

> Even the Authority's results show that its operations would, in certain conditions, have at least some adverse effect on water levels—up to 1.2 inches calculated as the monthly average change in minimum water levels by water year type. (Exh. Sites-110, p. 7, ¶ 24.)

(*Id.*, pp. 55-56.)

> SDWA Parties' witness, Thomas Burke, opined that even a 1.2-inch drop in water levels can prevent a grower from being able to irrigate under certain conditions, particularly when water levels have already been lowered due to the cumulative impacts of other diversions or exports. (CIC Tr. Comb., pp. 5213:22–5214:3 & 5429:3–5431:5.)

(*Id.*, p. 56.)

Importantly, not just any decrease in water levels is actionable. The change in water levels must result in material and substantial damage, and the cost to the senior right holder must be unreasonable. (*Peabody, supra,* 2 Cal.2d at pp. 374-376.) There is nothing cited in the Draft Decision that supports the conclusion that a 1.2-inch monthly average reduction in minimum water levels would injure South Delta water users.[19] The Draft Decision simply labels a change of 1.2 inches as "adverse" (Draft Decision, p. 56) without relying on any adequate evidence to determine whether such a change is adverse and constitutes actionable injury. SDWA offered no evidence regarding PODs that would be affected by such a change, despite 23 CCR § 745(b)'s requirement that a protestant claiming an injury to water rights provide: "[t]he location of protestant's point of diversion … so that the position thereof relative to the point of diversion proposed by applicant may be determined."

[19] The minimum water level is the low tide on each day in the period of analysis.

More generally, the Draft Decision (and evidence cited therein) does not support the conclusion that small decreases in water levels would have a material and substantial impact that injures water right holders. Mr. Burke's opinion that a 1.2-inch reduction in water levels may prevent a grower from irrigating may be true as a matter of physics, but Mr. Burke's opinion was not accompanied by any documentation indicating that a change in water level of 1.2 inches would adversely impact growers in the South Delta. (17 H.T. 4472:16-4473:6.) Further, Mr. Burke acknowledged that he did not evaluate changes in water levels at any specific location in the Delta or consider the daily fluctuations in water levels. (17 H.T. 4471:8-15.) Thus, the conclusion that rediversion of Project water would reduce water level and thereby injure diverters in the South Delta is unsupported.

2. The Authority's DSM2 Modeling Is Reliable for Project Planning Purposes

With respect to the Authority's DSM2 modeling of potential changes in water levels in the South Delta channels, the Draft Decision states:

> [T]here appear to be significant problems with the modeling the Authority conducted to analyze the impact of its proposed operations on water levels in the southern Delta, rendering the results unreliable. … SDWA Parties presented persuasive evidence that because of this outdated data, which does not account for changes in the channels that have occurred over time, Delta channel geometry assumed by the model varies significantly from actual conditions. (See Exh. SDWA-2a, pp. 15-17, ¶¶ 15-18, figs. 9-11.)

(Draft Decision, p. 56.)

> Mr. Burke's secondary critique of the Authority's analysis is reliance on long-term monthly averaging over an 82-year period to evaluate impacts on water levels, which … may mask more acute, sub-monthly impacts, or more acute impacts evident in the monthly average for some but not all years of that water-type. … We agree that the Authority's reliance on long-term averaging may fail to identify potential injury to agricultural users in the Delta from increased Delta exports. The Authority's use of averages, even when sorted by water year type, may not identify years in which more significant impacts occur.

(*Id.*, p. 57.)

> [E]ven if the Authority's modeling were accurate, small decreases in stage may compound with the effects of operations by other junior right holders to cause a material impact that injures legal users in the Delta. That others may be jointly responsible for this result does not relieve the Authority of its obligation to avoid an incremental contribution to such an injury through its operations.

(*Id.*, pp. 57-58.)

The Draft Decision's disregard of the DSM2 modeling is inconsistent with the Board's prior decisions. The pending Bay-Delta Plan Update utilizes and relies upon DSM2.[20] Further, in D-1641, the Board addressed a similar concern raised by SDWA—namely, that modeling impacts are unreliable because the results do not reflect historic conditions. The Board rejected these concerns, concluding that the value of the DSM2 model output "is in its comparison of water levels among the alternatives rather than its comparison of the predicted water levels." (AHO-277, p. 115.) The DSM2 model is also recognized in the Water Level Response Plan (WLRP) as the appropriate model for modeling water level changes. (SITES-252, p. 5.) The Draft Decision departs from the Board's prior reasoning and actions, without explanation.

Regarding the Authority's modeling, Mr. Burke confirmed that the criticisms he has of DSM2 apply equally to his use of the tool for his analysis. Nevertheless, he concluded that DSM2 is a "good tool" for conducting a comparative analysis. (CIC Tr. Comb. at 4668:7-25.) This is contradictory to the conclusion in the Draft Decision that the Authority's use of the model for comparative purposes (as opposed to predictive) is not sufficient to estimate impacts. DSM2 may not exactly reflect present channel geometry, but that would not change the reliability of the results of a comparison. Use of the DSM2 model shows changes in water levels, but Mr. Burke's analysis did not specify how much, despite his review of bathymetry. Also, Mr. Burke only presented a couple of comparisons of DSM2 data to current bathymetry. (SDWA-2a, pp. 16, fig. 10, 17, fig. 11.) These limited comparisons are not necessarily representative of differences in all channel conditions and DSM2. The Draft Decision improperly leaps from Mr. Burke's figures to the conclusion that the DSM2 version used by the Authority is not reliable, even for comparative purposes.

With respect to the averaging issue, the Authority presented its DSM2 stage model results in summaries, but all calculations were based on "*daily* minimum and *daily* maximum water levels for each day in the 82-year planning simulation period for locations throughout the South Delta." (CIC Tr. Comb. at 799:8-14, emphasis added.) While these results were presented as

[20] State Water Board, Draft Staff Report, Sacramento/Delta Update to the Bay-Delta Plan, App. A-2 (Sept. 2023), available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2023/ staff-report/app-a2.pdf.

averages of monthly differences (*id.* at 799:15-18), the monthly average differences were achieved by first calculating the difference in minimum levels between the no-project and project alternatives for each day in the month, and then averaging all of those daily differences to obtain the average daily change in minimum stage associated with the Project. The average difference in minimum stage for all days in the month is then averaged across all the same months in the historic period for the model to obtain the long-term average, and all the same months for each water year type to obtain the water year type averages. Thus, the underlying data is daily data, indicating that the risk of masking sub-monthly or more acute impacts is overstated.

The Authority is certainly prepared to address any incremental contribution to actionable injury. However, rediversion of Project water at the Export Facilities would occur within the regulatory framework that the SWP and CVP operate under. (DWR-005, ¶¶ 10-13; SITES-395c, ¶¶ 44-46; SITES-70c, p. 4, fn. 6.) Therefore, the Authority's incremental pumping would be included in the analyses required under the WLRP in determining whether rediversion of Project water would result in water levels of concern. (SITES-252, pp. 4-6.) In this regard, baseline CVP/SWP operations are factored into the forecast modeling.

3. Conditioning Rediversion of Project Water on Compliance with the Water Level Response Plan (WLRP) Is Appropriate in this Context

The Draft Decision critiques the WLRP and concludes that there are several reasons why the WLRP is inadequate. (Draft Decision, p. 58.) The Draft Decision states:

> Delta Parties presented testimony from Delta farmers that, over the time period that the Water Level Response Plan has been in effect, Delta water elevations have repeatedly dropped below the level needed for irrigation. (Exh. SDWA-66, p. 4; Exh. SDWA-91-a, p. 5, ¶¶ 5-8; Exh. SDWA-76, p. 4, ¶ 6; see also Exh. SDWA-91a, p. 24, ¶ 49.)

(*Ibid*.)

> We also conclude that the Authority's commitment to comply with the Water Level Response Plan will not adequately mitigate the threat of injury to the Delta Parties from Sites export operations. [¶]…[N]o party submitted direct evidence as to whether the water elevation criteria in the Water Level Response Plan remain appropriate to prevent injury. [¶]…Neither the Authority nor the Delta Parties have submitted sufficient information to allow us to determine specific water levels and compliance locations that would avoid injury to valid right holders.

(*Id.*, pp. 58-59.)

In his testimony (SDWA-66; CIC Tr. Comb., pp. 5219, 5231-5236), SDWA witness Joey Ratto stated that South Delta users have problems diverting at low- *and* high-water levels. (SDWA-66, ¶¶ 6, 8.) Mr. Ratto described low flow conditions but confirmed he was not planning to irrigate during those conditions. Further, he confirmed that the low flow conditions on Middle River at the Undine Road Bridge were not normal. He did not confirm that those conditions would occur during the Project's periods of operation. His testimony addresses only existing conditions and not conditions with Project pumping. His testimony offers no support for the contention that the Project would have an incremental or otherwise material impact on flows or water levels. He stated he has no independent knowledge of the Project, only what his attorney wrote.

In his testimony (SDWA-76; CIC Tr. Comb., pp. 4865-77), SDWA witness Mr. Richard Pellegri addressed only existing conditions, not conditions during Project operations. He did not testify that the Project's operations would increase the frequency of conditions of lower water levels.

Credible evidence was not offered indicating the water elevation criteria in the WLRP fail to prevent injury. The WLRP is part of the current regulatory framework for conveying non-Project water through the Export Facilities. DWR witness Mr. Aaron Miller testified that the Project would fit within this regulatory framework (DWR-005, ¶¶ 10-13), and no party offered evidence to the contrary. Thus, there was no reason for the Authority to offer evidence attempting to support why the criteria remain appropriate to prevent injury. Further, no party offered evidence concerning the location or water levels at specific PODs to evaluate whether the levels in the WLRP remain appropriate to prevent injury. Therefore, the Authority reasonably relied upon the WLRP and the elevation criteria therein.

4. The Evidence in the Record and Board Precedent Support Revisions to Term 49

The Draft Decision states: "Our finding that Sites Project operations may injure legal users in the Delta from increasing exports is consistent with other Board orders imposing terms and conditions on proposed exports through the Delta Export Facilities to avoid injury to legal

users within the Delta. (Revised Decision 1641; see also, e.g., Order WR 2001-03-DWR; Order WR 2004-0024-DWR.)" (Draft Decision, p. 56.) The Authority does not dispute that terms and conditions are appropriate for potential impacts to water users in the South Delta but urges the Board to adopt terms and conditions that are consistent with those in the cited orders. The Draft Permit instead imposes novel terms to address an issue that has existed for decades.

With respect to the cited orders, D-1641 concluded:

> Permittee may divert or redivert water at Banks Pumping Plant only if a response plan to ensure that water levels in the southern Delta will not be lowered to the injury of water users in the southern Delta has been approved by the Executive Director of the SWRCB. Permittee shall prepare the response plan with input from the designated representative of the South Delta Water Agency.

(AHO-277, p. 150.)

WR 2001-03-DWR concludes the following regarding Permit 15026:

> [T]here is not a direct causal relationship between cross-Delta transfers (in that specific case, the Merced transfer) and alleged 'harm' to Delta diverters. Water level problems in the southern Delta are caused by a combination of 1) adverse tidal conditions, 2) siltation of channels, 3) local diversions, and 4) project operations. Therefore, it can not be concluded that cross-Delta transfers (such as the proposed temporary change) are solely responsible for lowering of water levels in southern Delta channels and associated injury to legal users of water. However, in order to ensure that no legal user of water is injured by potential lowering of water levels in southern Delta channels due to this proposed temporary change, DWR will be required to comply with the Water Level Response Plan submitted by DWR and USBR and approved for a period of one year by the Executive Director of the SWRCB on October 6, 2000.

(Order WR 2001-03-DWR, p. 4.)

WR 2004-0024-DWR considered potential lowering of water levels in southern Delta channels associated with additional points of rediversion to Permit 15026, and temporarily amended the permit by inclusion of the following:

> Rediversion of water at the Clifton Court Forebay and the Tracy Pumping Plant pursuant to this Order is subject to compliance by the operators with the standards set forth in Tables 1, 2, and 3 on pages 181 to 187 of D-1641 and compliance with either an approved Water Level Response Plan as required on page 150 of D-1641 or the following term:
>
> The Department of Water Resources shall install portable pumps in the following areas: (a) along Old River across from Coney Island for the diverters on Union Island prior to when the three agricultural temporary barriers become fully operational; and (b) at the Tom Paine Slough diversion structure, similar to the installations done in 2003. All portable pumps shall be installed in advance of when

> water level problems have historically occurred in these areas. Such installation shall be coordinated with and agreed to by the affected Union Island diverters and the operators of the Tom Paine Slough diversion structure. DWR shall also promptly address other water level problems that occur in the southern Delta during the period of the water transfer by installing additional temporary pumps at no cost to the local diverters.

(Order WR 2004-0024-DWR, p. 6.)

For consistency with the evidence indicating rediversion of Project water will only result in a small incremental reduction in minimum daily stage in South Delta channels and the approach taken in these cited orders to address any adverse changes in water levels, the WLRP remains the appropriate mechanism for ensuring that redivision of Project water does not cause injury to water users in the South Delta. There is no evidence in the record that the plan is inadequate. (See SDWA Closing Brief at 15:12-16 [SDWA's argument is based on its witnesses, but see above critique of their testimony].) Importantly, the WLRP allows for flexibility as information is made available. (See Orders WR 2001-03-DWR, WR 2004-0024-DWR, WR 2026-0001.)

5. Novel Portions of Term 49 Are Unsupported and Warrant Removal

The Draft Decision and Draft Permit inappropriately seek to regulate water "depths" to address potential impacts to Delta water users. D-1641 and the WLRP, as well as orders that address similar issues, including those cited by the AHO (e.g., Orders WR 2001-03-DWR, WR 2004-0024-DWR), address "levels" not "depths." While potentially used interchangeably, the term "level" should be replaced for consistency and to eliminate any ambiguity.

Moreover, the option to establish a physical solution with approval by SDWA is novel, in that there does not appear to be a similar term in other permits. Significantly, it allows opponents of the Project (Draft Decision, pp. 53-54) to condition the operation of the Project on terms and information outside of the public process for development of the Permit. It essentially allows them to hold significant control over the development of a term without review or approval of the Board office delegated with such exclusive authority. It is also not clear why SDWA alone is deemed the representative entity of all legal water users in the South Delta.

Based on the foregoing, the Authority requests the following revisions to Draft Permit Term 49.

Term 49

No rediversion of water under this Permit at the Export Facilities shall occur when water ~~depths~~levels in Delta channels are not adequate to support diversions by reasonable methods pursuant to any valid water right with a priority date senior to this Permit. Rediversions of water under this Permit at the Export Facilities shall comply with the various plans required under D-1641 as prerequisites for the use of the Joint Points of Diversion by the Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR), including but not limited to the water level response plan and the water quality response plan. ~~The Executive Director may approve, after notice and opportunity for public comment:~~

~~a. Water depths at specific measurement locations developed by the Permittee in consultation with South Delta Water Agency (SDWA) that demonstrate adequate water depths to prevent injury to senior right holders; or~~

~~b. A physical solution to prevent injury to senior right holders that is submitted by the Permittee with written concurrence from SDWA.~~

~~Upon approval by the Executive Director, water may be rediverted at the Export Facilities if (a) the approved water depths are met, or (b) the physical solution is implemented to prevent injury.~~

~~In the alternative to the above conditions on rediversion, the Executive Director may approve, after notice and opportunity for public comment, a regulatory program that comprehensively manages operation of the Export Facilities to prevent injury to right holders from inadequate water depths in Delta channels. Such a regulatory program may include but is not limited to a regulation implementing the Bay-Delta Plan or an approved comprehensive plan to address water depths in the southern Delta pursuant to a federal or state-issued permit, license, or other approval. The Executive Director shall find that the regulatory method applies to rediversions under this Permit or amend this term to require Permittee to comply with the regulatory program. Upon approval by the Executive Director, water may be rediverted at the Export Facilities in compliance with the approved regulatory program.~~

E. Terms 41(d) and 42 Should Include Averaging Periods and Accommodate Project Release Temperatures that Do Not Cause the Sacramento River to Exceed 68°F

1. Draft Permit

Term 40 requires continuous temperature monitoring of Project releases at six locations from Sites Reservoir to the Knights Landing Outfall Gates at the Sacramento River. Term 41 provides for development of a Sacramento River Temperature Strategy (Temperature Strategy) to address impacts to fisheries associated with releases of Sacramento River Conveyance Water. The CDFW must concur that the Temperature Strategy will avoid temperature-related detrimental

effects on fisheries in the Sacramento River prior to submitting the strategy to the Board. Upon approval, the Temperature Strategy shall supersede the requirements of Term 42.

Term 42 provides that, if an approved Water Quality Portfolio (WQP) does not include a Temperature Strategy, then no water shall be released to the Sacramento River unless the water, when released from the CBD into the Sacramento River is cooler than the Sacramento River, or less than 68°F.

2. The Evidence Supports Use of a 7-Day Average Daily Maximum Temperature

The Central Valley Basin Plan provides that "[t]he temperature shall not be elevated … above 68°F in the Sacramento River reach from Hamilton City to the I Street Bridge during periods when temperature increases will be detrimental to the fishery." (See SCS-40, p. 3-14.) It also states that, "[i]n determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected." (*Ibid.*) Thus, to the extent the 68°F objective is used in the Draft Permit, an appropriate averaging period for assessing compliance with the 68°F should be used.

There is evidence in the record that a 7 Day Average Daily Maximum (7 DADM) temperature above 68°F is likely to impact juvenile salmonid rearing and growth, and lead to overall decreased survival in the Sacramento River when fish are present. (Draft Decision, p. 123.) The Draft Decision also states that "there appears to be no time period in which, as a general matter, exceedance of 68°F as a seven-day average daily maximum temperature in the Lower Sacramento River reach would not be detrimental to salmonids." (*Id.*, p. 124.) In light of the evidence in the record indicating it is appropriate to use a 7 DADM when assessing the 68°F threshold as it applies to salmonids, the Authority requests revisions to Terms 41(d) and 42, as noted below. (SITES-298, p. 51; AHO-163, p. 11.)

3. Term 41(d) Should Use a 7-Day Average Daily Maximum Temperature

In light of the foregoing discussion, the Authority requests the following revisions to Term 41(d):

> If the temperature thresholds would allow releases of Sacramento River Conveyance Water when such releases may cause or contribute to temperature increases in the Sacramento River above a seven-day average daily maximum of 68 degrees

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Fahrenheit (F), a description and supporting documentation of conditions under which temperature increases above a seven-day average daily maximum of 68 degrees F between Hamilton City and the I Street Bridge will not be detrimental to fisheries. For salmonids, the determination of whether a temperature impact would be detrimental may take into account the broader condition of the fishery.

4. Term 42 Should Use a 7 Day Average Daily Maximum Temperature and Authorize Releases that Do Not Raise the Sacramento River Above 68°F

Term 42 would not allow releases that exceed 68°F but would not cause the Sacramento River temperature to exceed 68°F. However, it should allow such releases because the objective applies to the receiving water. (SCS-40, p. 3-14.) Also, measurement on an instantaneous basis is inconsistent with the Draft Decision's recognition that a 7DADM of 68°F is an appropriate threshold for protecting salmonids. (Draft Decision, pp. 123-124.)

The "Controllable Factors Policy" does not support Term 42 as currently written. "Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objectives being exceeded." (Draft Decision, p. 120; SCS-40, p. 4-22.) If the Sacramento River temperature does not exceed 68°F at Knights Landing, water quality objectives are not being exceeded, and any release of Project water to the Sacramento River that does not cause the temperature in the Sacramento River to exceed 68°F does not violate the policy.

Therefore, Term 42 should be written to accommodate the possibility that Project release water temperature may be higher than 68°F, but the addition of Project water would not cause the temperature of the Sacramento River to exceed 68°F.

The Authority requests the following revisions to Term 42:

If an approved Water Quality Portfolio does not include a Temperature Strategy developed pursuant to Term 41, then no water shall be released from Sites Reservoir and conveyed in the Sacramento River unless the Project water, when released from the Colusa Basin Drain into the Sacramento River, is (a) cooler than the Sacramento River or (b) would not cause the Sacramento River to exceed~~less than~~ 68 degrees F. Temperatures shall be measured and compared on a seven-day average daily maximum~~an instantaneous~~ basis.

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F. The AHO Should Revise the Harmful Algal Bloom (HAB) Management Terms

1. Term 34 Should Be Revised to Limit Reservoir Management Plan (RMP) Inclusion and Tribal Consultation Requirements

Term 34 provides that the Authority must consolidate the relevant provisions of Terms 35-43 into the WQP for review and approval by the Board. The WQP must include the Authority's RMP and any additional actions or plans described in Terms 35-43.

Term 34 also require the Authority to consult with the Central Valley Regional Water Quality Control Board, CDFW, and California Native American Tribes prior to submitting initial and updated WQPs to the Board. The Authority shall notify Tribes with current or ancestral lands in any county that overlies the Delta or the Sacramento River watershed, Tribes that have requested the opportunity to consult, and Tribes that participated in the hearing.

The evidence in the record does not support inclusion of the entire RMP (AHO-108, § 2D.3) in the WQP. The evidence in the record concerns HABs and Mercury/ Methylmercury, which are covered in sections 2D.3.1 and 2D.3.2 of AHO-108. Term 34 should be limited to inclusion of RMP sections 2D.3.1 and 2D.3.2 in the WQP.

Term 34's consultation requirement is too broad. The Sacramento River watershed encompasses the Sacramento, Feather, and American Rivers, and all tributaries to these rivers throughout Northern California. The tribal consultation requirement should be commensurate with potential Project effects. To this end, the consultation requirement should be limited to all Tribes with ancestral lands in the counties adjacent to the Sacramento River downstream of Lake Shasta and throughout the Delta, the Feather River downstream of Lake Oroville (assuming exchanges may affect the Feather River), within the Sites Reservoir inundation area, and adjacent to any Project infrastructure.

2. Term 35 Should Be Revised to Only Require Cyanobacteria Monitoring and Management Practices Related to Project Releases

Term 35 would require the Authority to monitor cyanobacteria and cyanotoxins and include the monitoring plan in the WQP. The monitoring plan shall include locations and the

frequency of monitoring in Sites Reservoir, CBD, Yolo Bypass, Sacramento River, and Delta that is coordinated with and supplements monitoring under other programs.

Term 35 further provides that five-year updates to the WQP shall include HABs information, cyanobacteria and cyanotoxins information from monitoring, and the relationship of any detections to Project *diversions*, flow, temperature and nutrient conditions; identification of varieties of cyanobacteria/toxins detected and analysis of whether they are the same as those occurring in Sites Reservoir

Term 35's requirement that the Authority evaluate the relationship between detections of cyanobacteria and cyanotoxins and Project diversions is contrary to the evidence. The Draft Decision concludes that, "based on currently available information and current conditions, [] Project *diversions* are unlikely to reduce flows that would otherwise disrupt a HAB occurrence or contribute to conditions that would increase the likelihood of HAB formation." (Draft Decision, p. 139, emphasis added.) Despite this finding, the Draft Decision relies on BK-50, a 13-year-old study regarding future climate change or other changed conditions that *may* lead to earlier bloom formation and overlap of the HABs growing season and diversions to impose monitoring requirements related to Project *diversions*. Assuming monitoring during Project releases is required during July 1-November 30 to coincide with the proposed rediversion period at the Export Facilities, an additional requirement to monitor during diversions would add seven months of monitoring (Dec.-June), related coordination, analyses, and reporting without evidence supporting such an obligation.[21] The Authority recommends the following revision to Term 35(d):

> Whether detections of cyanobacteria or cyanotoxins occurred, and the timing of these occurrences in relation to releases~~diversions~~ under this Permit and HABs drivers such as flow, temperature, or nutrient conditions in the water body where cyanobacteria or cyanotoxins occurred.

Additionally, the monitoring requirement in Term 35, as applied to both diversions and releases, is open-ended and applies to four waterbodies throughout an extensive geographic area

[21] Project diversion season, as proposed in the Draft Permit, includes eight months, but the diversion and release seasons overlap in November.

(i.e., CBD, Yolo Bypass, Sacramento River, and the Delta). Given the tenuous link between the Project and any increase in cyanobacteria in downstream waterbodies (SITES-337c, ¶¶ 5-73), and the Project's potential minimal contribution to cyanobacteria inoculum in the Delta (*id.*, ¶¶ 74-76), the Authority's Delta monitoring obligation in Term 35(b) should be limited accordingly. Such a limitation would be consistent with the discussion of Term 36 in the next section.

3. The Board's Discretion to Approve the HABs Strategy Should Be Limited by Existing Evidence Indicating the Project Is Unlikely to Contribute Cyanobacteria Inoculum to the Delta that Will Make a Meaningful Difference in Cyanobacteria Prevalence

Term 36 provides that the Authority may develop a HABs Strategy and include it in the WQP to prevent or reduce HABs in Sites Reservoir and limit releases from the reservoir. The Strategy should address the results of the feasibility assessment required by Term 32. Upon approval of the WQP, the requirements of the Strategy will supersede Term 37 (release prohibition based on HABs "Caution" level). The Strategy should include: technologies to be installed to prevent/reduce HABs; cyanobacteria/toxin levels that trigger operational changes; operational changes to be taken if monitoring indicates presence of HABs; pilot studies or other ongoing feasibility assessments.

Part of the basis for the HABs Strategy in Term 36 (and the monitoring requirement in Term 35) relates to the Draft Decision's statements that conditions for the spread of cyanobacteria and cyanotoxins into the Delta through reservoir releases and factors that stimulate HABs formation are currently poorly understood, and the testimony of the Authority's expert witness lacks robust supporting scientific information. (Draft Decision, p. 136.)

In SITES-337c, Ms. Anne Huber testified to the existence of HABs throughout the Delta where there is suitable habitat (¶ 75), and the importance of existing seed stock in the Delta (¶ 76). While not definitive, this testimony indicates that the Project will not contribute cyanobacteria inoculum that will make a meaningful difference in cyanobacteria prevalence in the Delta. Further, the Draft Decision recognizes that dilution and preexisting seedstock will help neutralize the impacts of reservoir releases to some extent. (Draft Decision, p. 136.) The Board's

review and approval of the HABs strategy should account for this evidence and the Authority's proportionate contribution, if any, to cyanobacteria inoculum in the Delta.

4. Term 37 Should Set the Cyanobacteria/Cyanotoxin Release Prohibition at the "Warning" Level

Term 37 provides that if an approved WQP does not have a HABs Strategy, no water shall be released when cyanobacteria or cyanotoxin levels in release water are above "California's Cyanobacteria and Harmful Algal Bloom Network Caution Level as demonstrated by the monitoring procedures described in the Sites RMP."

Imposing a release prohibition at the "Caution" level is unsupported. Swimming is still allowed at the "Caution" level. Releases will first travel for approximately 40 miles through the Tehama Colusa Canal (TC Canal), where swimming does not occur. Dilution of Sites Reservoir releases will occur to some extent in the canals and to a significant extent once the releases reach the Sacramento River. (SITES-337c, ¶¶ 25, 61.)

To the extent the proposal to set the release prohibition at the "Caution" level is relying on the statement in the Draft Decision that Save California Salmon (SCS) expert witness, Jacob Kann, testified that the "Caution" level provides useful protective thresholds for recreation in the reservoir and for downstream waterways (Draft Decision, pp. 133, 138), this proposal is unsupported by SCS-8a (¶ 30, p. 28). Dr. Kann states:

> Given the high likelihood that any cyanobacterial cells and cyanotoxins will persist downstream if released from Sites Reservoir, it is critical that released cyanobacteria cells and toxin concentrations remain below California Cyanobacteria and Harmful Algal Bloom Network Caution (Tier 1) levels (e.g., <4000 cells/ml and 0.8 micrograms/L for microcystin) as shown in FEIR/FEIS Table 2D-2 (p. 2D-36).

Paragraph 30 of SCS-8a does not discuss the importance of the "Caution" level for protecting recreation.

While the Authority plans to use the "Caution" level to trigger releases from deeper strata of the reservoir (AHO-108, pp. 38, 40), the Authority's RMP does not state that it would stop all releases at the "Caution" level. Further, setting the release prohibition at the "Caution" level does not recognize the extensive evidence regarding dilution and the pre-existing presence of cyanobacteria seedstock in the Delta, which the Draft Decision recognizes will help lessen the

potential impact that Project releases may have on downstream concentrations and limit the extent to which any cyanobacteria that Project releases add to downstream waterbodies would be biologically meaningful. (Draft Decision, pp. 135-136.) The Authority requests that the Term 37 prohibition on releases triggered by cyanobacteria and cyanotoxin levels be set at the "Warning" level. (AHO-108, pp. 2D-37 – 2D-39.)

Additionally, the evidence does not support automatic inclusion of a future "applicable" water quality objective in Term 37. The word "applicable" is vague in this context. The updates to the WQP presents an opportunity to evaluate potentially applicable water quality objectives.

The Authority requests the following revisions to Term 37 consistent with the above discussion:

> 37. If an approved Water Quality Portfolio does not include a HABs Strategy developed pursuant to Term 36, then no water shall be released from Sites Reservoir when cyanobacteria or cyanotoxin levels in the released water are above California's Cyanobacteria and Harmful Algal Bloom Network ~~Caution~~ Warning Level as demonstrated by the monitoring procedures described in the Sites RMP. If an applicable water quality objective for cyanobacteria or cyanotoxin is adopted, and the objective is included in the approved Water Quality Portfolio or any update as provided for in Term 34, that objective will be substituted for the Cyanobacteria and Harmful Algal Bloom Network Caution Level in this term. Permittee shall describe the effectiveness of any HABs management practices used within the reservoir as part of each five-year update to the Water Quality Portfolio.

G. Mercury and Methylmercury Management Terms

1. The Tribal Subsistence Fishing Objective Does Not Apply to the Project

Term 38 would require that the Authority develop a Methylmercury Mitigation Plan (MMP) to prevent or mitigate elevated levels of methylmercury in Sites Reservoir and in releases from Sites Reservoir. The MMP must be consistent with applicable water quality objectives in the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWBE). Relatedly, the Draft Decision states that:

> The ISWBE also contains a Tribal subsistence methylmercury objective of 0.04 mg/kg wet weight of a mixture of 70 percent trophic level 3 fish and 30 percent trophic level 4 fish.

(Draft Decision, p. 128.)

This objective does not apply to the CBD, the Creeks, or the Sacramento River, and would not apply to the Sites Reservoir (absent further action). The ISWBE states that "[t]he water quality objectives that protect people who consume fish apply to waters with the COMM, CUL, T-SUB, and SUB beneficial uses." (AHO-342, p. A-4.) The ISWBE further states that "[t]he Tribal Subsistence Fishing Water Quality Objective applies to waters with the T-SUB beneficial use." (AHO-342, p. A-5.) Central Valley Board Resolution R5-2022-0018 added the T-SUB beneficial use definition to the Sacramento/San Joaquin Rivers Basin Plan, but the Central Valley Regional Board has not designated any waterbodies with this beneficial use. Thus, to the extent that Draft Permit terms related to mercury management rely on the tribal subsistence methylmercury objective in ISWBE, such reliance is improper. The Authority requests confirmation that the Draft Permit terms do not rely on this objective.

2. Suggested Revisions to the Draft Decision for Consistency with Evidence in the Record

a. Short-Term Increases in Methylmercury in Newly Constructed Reservoirs Are Not a Certainty

The Draft Decision states:

> In newly constructed reservoirs, the initial inundation of organic matter, like soils and vegetation, will cause relatively short-term increases in mercury methylation.

(Draft Decision, p. 128.)

The Draft Decision's characterization of mercury is stated definitively. AHO-073, the reference cited by the AHO in this paragraph, describes reservoir mercury fate and transport as they applied to *potential* conditions, absent mitigation. The Authority's expert, Mr. Cameron Irvine, made similar conditional statements in SITES-116.

The Authority requests that the AHO revise the Draft Decision to state:

> In newly constructed reservoirs, the initial inundation of organic matter, like soils and vegetation, ~~will~~can cause relatively short-term increases in mercury methylation.

b. In Term 33, the Word "Sediment" Should be Replaced with "Soil"

Term 33 requires that, prior to construction of Sites Reservoir, the Authority shall conduct pre-construction total mercury sediment screening, sediment coring, and other actions to identify

areas that may have higher concentrations of mercury within the inundation area. Term 33 should use the term "soil" rather than "sediment" as only soil will be present pre-construction within the majority of the reservoir footprint.

c. The Evidence Does Not Support the Suggestion that Salmon Consumption for Subsistence or Cultural Practice Will Be Adversely Affected by Releases of Mercury

The Draft Decision states:

> Mercury in fish tissue has the greatest impact on those who consume large quantities of fish, which may occur through consumption for subsistence or as a matter of cultural practice. (Exh. FOR-2, p. 12, ¶ 20; Exh. AHO-073, p. 43)

(Draft Decision, p. 127.)

AHO-073, page 6-43, supports the first half of this statement, where it states: "Mercury bioaccumulates in the aquatic food web and poses the greatest risk to human health and aquatic-dependent wildlife that consume fish." The citation for the second half of the statement, FOR-2, describes the importance of subsistence fishing and the role of salmon in tribal subsistence fishing. However, it is expected that water quality effects of mercury due to releases from the Project would be minimal in relation to salmon (AHO-078, p. 11-135 ["Given the relatively short temporal overlap of winter-run Chinook salmon with the export period, and the low observed levels of mercury in Chinook salmon generally (Appendix 6F, Table 6F-8) in relation to levels of mercury that may result in sublethal effects (Beckvar et al. 2005), it is expected that water quality effects of mercury from releases resulting from Alternatives 1, 2, and 3 would be minimal compared to the NAA"].)

The Draft Decision should therefore be revised as follows:

> Mercury in fish tissue has the greatest impact on those who consume large quantities of fish~~, which may occur through consumption for subsistence or as a matter of cultural practice~~. (~~Exh. FOR-2, p. 12;~~ Exh. AHO-073, p. 43.)

To the extent that the draft mercury management terms are based on statements in this section that the Authority requests that the AHO revise, the Authority requests modification of those terms for consistency with the evidence in this record.

3. Draft Decision Discussions of Anticipated Methylmercury Concentrations Should Acknowledge the Results Reflect *Potential* Conditions Absent Mitigation

a. Sites Reservoir Concentrations

The Draft Decision states that:

> The Authority's expert testified that he expects "mercury concentrations in largemouth bass in the future reservoir to exceed State objectives," with concentrations of approximately 0.47 to 0.85 mg/kg, well-exceeding the 0.20 mg/kg wet weight sport fish objectives. (CIC Tr. Comb., p. 1567:20 1568:22; Exh. Sites-116c, ¶¶ 30 & 31.)

(Draft Decision, p. 130.)

The Authority's expert, Mr. Irvine, made this statement referring to conditions that could occur in Sites Reservoir absent any mitigation. (SITES-116c, ¶¶ 6, 31, 53.) The Draft Decision should clarify that estimated concentrations of methylmercury within Sites Reservoir and in discharges to downstream receiving waterbodies were only applicable to conditions absent any mitigation measures. Specifically, the statement should be revised as follows:

> The Authority's expert testified that, absent mitigation, he expects "mercury concentrations in largemouth bass in the future reservoir to exceed State objectives," with concentrations of approximately 0.47 to 0.85 mg/kg, well-exceeding the 0.20 mg/kg wet weight sport fish objectives. (CIC Tr. Comb., p. 1567:20 1568:22; Exh. Sites-116c, ¶¶ 30 & 31.)

b. Receiving Waterbody Concentrations

The Draft Decision states that:

> The Final EIR estimates that releases of water from Sites Reservoir will increase aqueous methylmercury concentrations in the immediate receiving waterbodies, Colusa Basin Drain, Stone Corral Creek, and Funks Creek, and the Sacramento River. (Exh. AHO-073, pp. 65 & 68.)

(Draft Decision, p. 130.)

This Draft Decision's characterization of methylmercury is stated definitively. The Final EIR and testimony condition these statements and note that it is applicable to conditions absent mitigation. (AHO-073, p. 6-65; SITES-116c, ¶ 38.) The Authority requests that the AHO revise the Draft Decision as follows:

The Final EIR estimates that releases of water from Sites Reservoir, absent mitigation, ~~will~~ could increase aqueous methylmercury concentrations in the immediate receiving waterbodies, Colusa Basin Drain, Stone Corral Creek, and Funks Creek, and the Sacramento River.

c. Aqueous Methylmercury in Downstream Waterbodies

The Draft Decision states that:

> Sites Reservoir releases are also expected to increase aqueous methylmercury concentrations in the Sacramento River. The Authority estimated that Sites Project operations will increase aqueous concentrations at Freeport by up to 10 percent during dry and critically dry years in the first decade after the initial fill. (Exh. Sites-116c, p. 20, ¶ 51, fig. 3.) The Authority's expert, Cameron Irvine, concluded that such an increase, "could result in statistically significant increases in the body burdens of methylmercury in fish which would increase risks of adverse effects to humans and wildlife that consume Delta fish during these water year types." (*Id*. at pp. 21-22, ¶ 52.) In the long term, the Project is expected to increase aqueous methylmercury during dry and critical years at Freeport by about 1 percent. (*Id*. at p. 19, ¶ 51, fig. 1.)

(Draft Decision, p. 130.)

The Draft Decision's characterization of the increase in aqueous methylmercury is stated definitively. The Authority's expert, Mr. Irvine, qualified these estimates as *potential* conditions, and indicated that they apply absent mitigation. (SITES-116c, ¶ 51.) The Authority requests the following revisions:

> Sites Reservoir releases, absent mitigation, are also expected to increase aqueous methylmercury concentrations in the Sacramento River. The Authority estimated that Sites Project operations ~~will~~could increase aqueous concentrations at Freeport by up to 10 percent during dry and critically dry years in the first decade after the initial fill. (Exh. Sites-116c, p. 20, ¶ 51, fig. 3.) The Authority's expert, Cameron Irvine, concluded that, absent mitigation, such an increase, "could result in statistically significant increases in the body burdens of methylmercury in fish which would increase risks of adverse effects to humans and wildlife that consume Delta fish during these water year types." (Id. at pp. 21-22, ¶ 52.) In the long term, the Project is expected to increase aqueous methylmercury during dry and critical years at Freeport by about 1 percent, absent mitigation. (Id. at p. 19, ¶ 51, fig. 1.)

To the extent that the draft mercury management terms are based on statements in this section that the Authority requests that the AHO revise, the Authority requests modification of those terms for consistency with the evidence in this record.

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4. The Draft Decision Should Clarify the Project's Potential Position with Respect to Participation in the Delta Methylmercury Control Program

The Draft Decision discusses the Delta Methylmercury Control Program, including Phase 1 of the Program, which required entities discharging methylmercury within the Delta to conduct source control studies and develop and evaluate methylmercury management programs. (Draft Decision, pp. 128-129.) The Delta Methylmercury Control Program applies to discharges of methylmercury within the Delta. (SCS-40, pp. 4-95 & Appen. 43.) Upstream control programs for major tributaries are to be considered as part of Phase 1. (SCS-40, p. 4-96.) During Phase 2, implementation of upstream control programs are to occur. (*Ibid.*) The Delta Methylmercury Control Program assigns upstream load allocations by tributary, including the Sacramento River. (*Id.*, pp. 4-97, 4-116 [Table 4-19].) The Draft Decision currently reads as if the portions concerning waste discharges within the Delta would apply to Sites Reservoir releases. The Draft Decision should clarify that Project releases would part of any upstream load allocation.

H. Term 22 Should Be Removed or Otherwise Revised to Prevent Interference with the Project's Timely Compliance with State and Federal Endangered Species Act Requirements

Term 22 is unnecessary given the imposition of Term P (the Board's Standard Permit Term 14). Term P would already require continued compliance with any and all California and Federal Endangered Species Act requirements for the Project as authorized under the water rights permit. (See Draft Permit, p. 27.) To the extent any other complementary term is appropriate, the Authority had previously proposed for inclusion in Special Permit Term 8, which would require the following:

> For the protection of the fisheries in the Sacramento River and Sacramento-San Joaquin Delta, diversions under this permit shall be subject to the Permittee complying with the California Endangered Species Act (Fish & G. Code, § 2050 et seq.), including any conditions of approval relative to Permittee's water operations in an Incidental Take Permit.

(See Appen. 2 to Authority's Closing Brief; see also SITES-070c, ¶ 14, p. 9, citing to AHO-025.)

In contrast, Term 22 creates the untenable scenario where a future modified ITP may include different diversion requirements but the water right permit would require the Project to

continue operating to the 2024 ITP diversion requirements unless and until the Executive Director amends the permit term to comport with such new requirements. Moreover, many of the 2024 ITP terms require scientific studies. These studies could lead to different terms and conditions for future diversions based on the then available best science with CDFW's approval. Term 22, however, has the potential to result in the Project operating to out-of-date science and require the Project to operate out of compliance with the California Endangered Species Act.

Accordingly, Term 22 should be removed, or alternatively, should be revised as follows:

> 22. No diversion under this right is authorized unless permittee is operating in compliance with Incidental Take Permit No. 2081-2023-051-00 for operation of the Sites Reservoir Project issued by CDFW on October 24, 2024 (2024 ITP), as may be amended. ~~Permittee shall comply with all applicable diversion requirements specified in the 2024 ITP, including but not limited to Conditions of Approval 9.4, and 9.8 through 9.14, which are also listed in Attachment 1 of this Permit.~~
>
> ~~Permittee shall continue to comply with the diversions requirements in the 2024 ITP unless and until this term is amended. Within 30 days of issuance of a new or modified ITP for operations of the Sites Reservoir Project, Permittee shall submit to the Executive Director the new or modified ITP and a summary of any changes relative to the 2024 ITP. The Executive Director may amend this term and Attachment 1 without a petition for change by the Permittee to be consistent with the new or modified ITP if, after notice and opportunity for public comment, the Executive Director determines and CDFW concurs in writing that the amendments to this Term and Attachment 1 would be equally or more protective of fish and wildlife.~~

I. Term 52 Requiring a Groundwater Monitoring Program Should Be Revised

Term 52 would require the Authority to develop and submit to the Deputy Director for approval a groundwater monitoring program to identify whether diversions are causing or threatening to cause injury to groundwater right holders. The program must identify monitoring thresholds for each location to determine whether diversions are causing declines that may injure groundwater right holders. The Authority may rely on and incorporate existing monitoring locations and thresholds implemented pursuant to the Sustainable Groundwater Management Act (SGMA) and must conduct its own monitoring in the absence of an existing program. If a groundwater level reaches a designated threshold, the Authority must consult with the relevant Groundwater Sustainability Agency (GSA) and analyze the extent to which diversions have

contributed to elevation declines. The Authority must document these results and any actions in its Annual Report to the Board.

The analysis in the Draft Decision, and the evidence cited therein, does not support this extensive groundwater monitoring term. The evidence in the record indicates potential groundwater impacts are remote, and Term 52 should be revised accordingly.

1. The Draft Decision Relies on Unreliable Evidence of Project Impacts on Groundwater Recharge to Support Its Conclusions

The Authority's groundwater modeling for the EIR was conducted for the 2017 Draft EIR/EIS. (See AHO-154; SITES-146, p. 2.) The Draft Decision focuses on modeling results for Alternative B from the Draft EIR/EIS to assess changes in groundwater levels and groundwater/surface water exchange. (Draft Decision, pp. 66-67 & fn. 30.) Alternative B included a "release only Delevan pipeline." (SITES-153, p. EB-8.) The Draft Decision is unclear why it focused on modeling results for groundwater levels and exchange at the Delevan pipeline since the pipeline and associated potential releases (which were modeled in Alternative B) are no longer a component of the Project.

Dr. Davids, in his comprehensive analysis of potential changes in groundwater conditions throughout the Colusa Subbasin (SITES-112), similarly relied on data from Alternative B. (*Id.*, ¶ 28.) However, Dr. Davids used modeled changes in groundwater/surface water exchange at the Red Bluff and Hamilton City PODs to assess the potential effects on groundwater exchange between the Sacramento River and the Colusa Subbasin associated with Project diversions. (*Id.*, ¶ 29.)

Dr. Davids' decision to focus on changes in groundwater/surface water exchange at the PODs was reasonable because of the potential for Delevan releases in the Alternative B modeling to generate unreliable results regarding groundwater recharge at that location. To support his analysis of potential impacts of Project diversions on groundwater recharge, Dr. Davids relied on the combined reduction in seepage from the Sacramento River to the groundwater basin at the PODs of 3 cfs, which is considerably less than the 50-100 cfs cited in the Draft Decision. (SITES-112, ¶ 29; Draft Decision, p. 67.) Dr. Davids' estimated change in groundwater recharge

associated with Project diversions is a more reliable indicator of the potential effect of Project operations.

2. The Authority Presented a Comprehensive Groundwater Impact Analysis

The Draft Decision states that "[t]he Authority's modeling of groundwater impacts from Project diversions is general and does not address the full nature and extent of potential impacts on the underlying groundwater system." It further states that "[t]o assess potential impacts on groundwater users, the groundwater modeling outputs would need to describe not only the impacts directly beneath the Sacramento River but the extent to which these impacts extend throughout the aquifer system." (Draft Decision, p. 67.)

In fact, Dr. Davids performed a comprehensive analysis of potential impacts to recharge processes throughout the Colusa Subbasin. (See SITES-112.) His analysis evaluated potential impacts on groundwater recharge associated with seven processes that may be affected by Project operations. (SITES-112, ¶¶ 5-6.) As noted above, one of the processes he evaluated was a potential decrease in recharge from the Sacramento River due to increased wintertime diversions to the TC Canal and GCID Main Canal. (SITES-112, ¶¶ 6, 27-30.) Dr. Davids determined that Project operations could reduce recharge by approximately 1,700 AF/yr, which reflects a change in storage in the aquifer system. Additionally, the six other processes evaluated relate to potential changes in storage throughout the aquifer system. (SITES-112, ¶ 41; SITES-141.) The Draft Decision should more thoroughly discuss and rely on this evidence in developing a groundwater management term that is commensurate with the potential impacts of the Project on groundwater conditions.

3. The Evidence Indicates Project Diversions Will Not Adversely Affect Groundwater Wells on the Colusa Reservation or Elsewhere Throughout the Basin

The conclusion that Project diversions could impact groundwater recharge and levels and thereby impact wells on the Colusa Reservation is contrary to the evidence in the record. (See Draft Decision, p. 68.) Dr. Davids estimated that Project diversions could reduce recharge to the Colusa Subbasin by approximately 1,700 AF/yr. However, when the six other recharge processes Dr. Davids analyzed are considered, Project operations could cause changes in recharge that vary

between -2,400 AF/yr to +25,000 AF/yr. (SITES-112, ¶ 41.) Notably, a potential decrease in recharge of 2,400 AF/yr would represent only a 0.6% decrease in recharge to the subbasin. (SITES-112, ¶ 42.) This minimal negative effect on groundwater recharge is contrary to the conclusion that Project diversions could adversely affect recharge and groundwater wells on the Colusa Reservation. Further, this conclusion seems to ignore the potential benefit to the Colusa Subbasin provided by a potential +6.0% increase in recharge. (*Ibid.*)

With respect to changes in groundwater levels, the groundwater modeling for the EIR indicates a reduction to groundwater levels of 1 to 2.5 feet. (SITES-146, pdf pp. 20-21, 31 [fig. 10A-9]; see Draft Decision, p. 67, fn. 30.) When this change is considered in the context of existing groundwater conditions and the Colusa Subbasin GSP minimum thresholds for groundwater levels at wells near the City of Colusa, this potential change in levels will not negatively impact wells on the Colusa Reservation. The Colusa Subbasin GSP identifies minimum thresholds for groundwater levels at numerous wells throughout the Colusa Subbasin, including two wells near the City of Colusa, Well No. 15N01W05G001 and Well No. 16N02W25B002, which should provide a relatively good indication of potential changes in groundwater levels at the nearby Colusa Reservation. (SITES-143, p. 8 [fig. 1-1].) As of 2023, groundwater levels at Well No. 15N01W05G001 were 90-95 feet higher than the minimum threshold established in the GSP for this monitoring well. (*Id.*, p. 36 [Table 6-2].) At Well No. 16N02W25B002, groundwater levels were 63-71 feet higher than the minimum threshold established in the GSP for this monitoring well. (*Ibid.*) With this much buffer between existing conditions and the minimum thresholds at these two wells, a reduction of 1 to 2.5 feet associated with Project operations would not injure nearby groundwater users.

The Draft Decision also states that, "[a]bsent some assessment of the extent of potential impacts, especially when diversions coincide with peak groundwater pumping, the likelihood and risk of injury to groundwater users remains uncertain." (Draft Decision, p. 67.) Peak seasonal groundwater pumping associated with irrigation demands occurs between about June-August. (See e.g., SITES-143, p. 93 [hydrograph showing groundwater level declines beginning in about June and bottoming out about August].) According to CalSim 3 modeling for the Operations ITP,

Project diversions are anticipated to be negligible in May and June. (See 2025-11-03 Sites Letter to AHO Re CalSim 3, p. 9, fig. 3; see also, SITES-334R, p. 11 [Table 6].) Thus, there is no risk that Project diversions would overlap with peak groundwater pumping.

Nevertheless, it is instructive to consider the existing change in groundwater levels between spring and fall and whether an additional change in groundwater levels associated with Project operations would be problematic. The evidence regarding existing intra-annual changes in groundwater levels at Well Nos. 15N01W05G001 and 16N02W25B002, indicate that a groundwater level reduction of 1 to 2.5 feet would not adversely affect groundwater users near the City of Colusa. In 2023, groundwater levels at these two wells dropped 6-8 feet between spring and fall. Lowering the groundwater level 1 to 2.5 feet during this time would result in groundwater levels remaining far above the minimum thresholds for these wells. (SITES-143, p. 36 [Table 6-2].)

The evidence indicates that the likelihood and risk of impacts on groundwater level and storage sustainability thresholds is almost nonexistent. Moreover, it supports the conclusion that the Project will not adversely affect groundwater wells on the Colusa Reservation or elsewhere throughout the basin.

4. Cachil DeHe's Failure to Submit Sufficient Information Regarding Groundwater Rights and Uses Should Not Be Used as a Basis for Imposing Groundwater Monitoring Requirements on the Authority

The Draft Decision acknowledges that protestants claiming injury to a right from approval of a water right application or petition are required to present evidence demonstrating the specific injury that may result. (Draft Decision, p. 68.) Nevertheless, the Draft Decision excuses Cachil DeHe for its failure to submit such information in the hearing because Cachil DeHe did not file a protest and was allowed to intervene after the hearing had already begun. (Draft Decision, pp. 68-69.)

The AHO allowed Cachil DeHe to intervene on June 5, 2024, and the deadline to submit case-in-chief exhibits was July 1, 2024. Therefore, Cachil DeHe had time to provide evidence and testimony regarding potential groundwater impacts. In fact, Cachil DeHe Chairman, Wayne Mitchum submitted testimony on behalf of Friends of the River (FOR-8), then chose not to

testify. Because Chairman Mitchum did not appear to testify and the Authority did not have an opportunity to cross-examine Chairman Mitchum, the AHO excluded FOR-8 from the evidentiary record. (1-22-2025 Procedural Ruling, p. 2.) Chairman Mitchum did not submit any rebuttal testimony.

In the same procedural ruling, the AHO requested that "the tribes claiming federal reserved rights or other tribal water rights submit copies of any official records or other evidence that may support and document the claimed rights, such as, for example, an executive order reserving lands and associated water rights." (1-22-2025 Procedural Ruling, p. 3.) On March 14, 2025, Margaret Rosenfeld, on behalf Cachil DeHe, generally responded that: "The tribe possesses rights to groundwater based both on the doctrine of federally reserved water rights and on state law concerning the use of groundwater. On the reservation, the Tribe operations [sic] wells for the purpose of providing domestic water to residents. On its fee lands, the Tribes [sic] uses groundwater to support the uses of those lands including for agriculture … ." (CICC-11, p. 3.) The response failed to fully provide the information requested by the AHO or required by 23 CCR § 745(b), including information concerning Cachil DeHe's points of diversion (i.e., location of wells).

To the extent that the AHO proposed Term 52 because of a lack of evidence regarding Cachil DeHe's groundwater rights and uses, such inclusion is improper because Cachil DeHe failed to provide the evidence despite numerous opportunities to do so.

5. Term 52 Should Be Revised to Require Coordination with the Colusa Subbasin Groundwater Sustainability Agencies (GSAs)

In light of the foregoing and the evidence offered by the Authority during the hearing, the Board should not require the Authority to develop a groundwater monitoring program. Instead, the Authority should be required to coordinate with the Colusa Subbasin GSAs to understand whether Project operations may be contributing to any exceedance(s) of sustainable management criteria thresholds in the Colusa Subbasin GSP. The Authority requests the following revisions to Term 52:

~~Prior to commencing diversions, Permittee shall develop and submit to the Deputy Director for approval a groundwater monitoring program prepared by a professional hydrogeologist to identify whether diversions under this Permit are causing or threatening to cause injury to groundwater right holders. The Permittee may rely on and incorporate existing monitoring locations, protocols, and thresholds being implemented pursuant to the Sustainable Groundwater Management Act. The program shall identify monitoring locations, sampling frequencies, and explanation of how the monitoring will be sufficient to identify changes in groundwater conditions potentially caused by the diversions. For each monitoring location, the program shall identify water elevation thresholds at which the Permittee shall conduct analyses to determine whether diversions under the Permit are contributing to groundwater level declines or other adverse effects to groundwater conditions that may injure groundwater right holders. In the absence of existing monitoring activities that are sufficient to monitor the potential effects of diversions, Permittee shall conduct its own groundwater elevation monitoring. Any data collected by the Permittee pursuant to this term shall be submitted to DWR's Water Data Library or another publicly accessible data system approved by the Deputy Director.~~

Permittee shall coordinate with the Colusa Subbasin Groundwater Sustainability Agencies (GSAs). If a sustainable ~~a groundwater~~management criteria (SMC) threshold ~~level reaches a monitoring threshold at any location~~identified in the Colusa Subbasin Groundwater Sustainability Plan ~~program~~is exceeded, Permittee shall consult with the Colusa Subbasin GSAs~~relevant groundwater sustainability agency~~ and shall analyze the extent to which Sites Reservoir operations~~diversions~~ under the Permit, either during that year or as a cumulative effect, may have contributed to a threshold exceedance~~groundwater elevation declines~~. The analysis and any supporting information, including any actions by the Permittee to address the effects of Sites Project operations~~diversions~~ on groundwater conditions, shall be included in the Permittee's next Annual Report.

Upon receipt of evidence that Sites Project operations ~~diversions~~authorized by this Permit may cause or threaten to cause injury to groundwater right holders in subbasins adjacent to the Sacramento River downstream of the points of diversion, the State Water Board reserves the authority to modify the terms and conditions of this Permit if, after notice to interested parties and opportunity for a hearing, the Permittee fails to demonstrate that operations under this Permit will not cause injury.

J. The Authority's Petition for Partial Assignment Should be Granted

The Authority submitted a petition for partial assignment of Application 25517, which, if granted, would provide any permit issued thereunder a priority date of September 30, 1977, in lieu of a priority date of May 11, 2022. The Draft Decision proposes denying the petition for partial assignment. The Draft Decision states: (1) "approval of the petition would not best conserve the public interest because of the impact of such an approval on the water supplies of existing and potential future users within the areas of origin of the Sacramento and Bay-Delta watersheds"; (2) "approval of the petition with the associated subordination agreements would further complicate water right priorities within the watershed so as to frustrate administration of

the priority system"; and (3) "the Authority has failed to demonstrate that approval of the petition[] would not 'conflict with … water quality objectives established pursuant to law.' " (Draft Decision, p. 32.) As discussed herein, these conclusions are unsupported by the record and inconsistent with statutory mandates governing the Board's consideration of a petition for partial assignment.

1. The Draft Decision Improperly Considers the Public Interest in Evaluating the Petition for Partial Assignment and Petitions for Releases

The Draft Decision denies the petition for partial assignment, in part, because the assignment would purportedly not best conserve the public interest. (Draft Decision, p. 32.) The Draft Decision concludes that the Board's public interest considerations are not "constrained to the factors identified in Water Code sections 10504 and 10505." (*Ibid*.) The Draft Decision concludes that "State-filed applications are made and filed pursuant to the 'rules and regulations of the State Water Resources Control Board relating to the appropriation of water,' excepting only the normal due diligence requirements." (*Ibid*.) The Draft Decision reasons that, because an applicant must obtain a permit and because the Board is required to consider the public interest in issuing any such permit, the Board may consider the public interest when deciding whether to assign a state-filed application. (*Id.*, pp. 32-33.) In an attempt to further support consideration of the public interest, the Draft Decision states that the Board's decision whether to grant a petition for assignment or release is "discretionary," citing Water Code section 10504's use of the word "may" in authorizing the board to grant an application for release from priority or assignment, and drawing a comparison to Water Code sections 1253 and 1257 regarding applications to appropriate water. (*Id*., pp. 30, 32.)

The logic in the Draft Decision is contrary to accepted principles of statutory construction. First, the word "may" is not always permissive, and in this context, is mandatory. The Third Appellate District previously addressed a similar error in the Board's logic:

> [The Board's] position is based on the unspoken premise that "may," in this context, denotes the right, but not the obligation, to act. [¶]This premise is contrary to well-established precedent. As our Supreme Court explained in *Mass v. Board of Education* (1964) 61 Cal.2d 612…, in response to another public entity's attempt to avoid a statutory obligation, "Although the word 'may' customarily implies

> permissiveness [citation], words must be construed in their textual context. [Citation.] The word 'may' here occurs in a statute defining a public duty. Words permissive in form, when a public duty is involved, are considered mandatory." [Citations.] "[W]here the purpose of the law is to cloth [sic] public officers with power to be exercised for the benefit of third persons, or for the public at large—that is, where the public interest or private right requires that a thing should be done—then the language, though permissive in form, is peremptory." [Citation.]

(*State Water Resources Control Bd. Cases* (2006) 136 Cal.App.4th 674, 731-732 (*State Water Board Cases*), some internal quotes omitted.)

In this case, Water Code section 10504 "cloth[es]" the Board with a public duty to release from priority or assign state-filed applications when certain criteria are met. (*State Water Board Cases, supra,* 136 Cal.App.4th at p. 731.) The assignment and releases sought by the Authority's petitions would be for the benefit of third persons and the public at large, specifically, members of the Authority and their partners, including Reclamation and the State of California, through the provision of water to support public benefits, such as fish and wildlife and recreation. (Authority's Closing Brief, at 5:12-26, 42:4-20.) The benefit of the petition for assignment would be in the form of a more senior priority date, which would provide more certainty that water would be available. (Order WR 83-1, pp. 14-15.) The benefit of the releases from priority would be to protect the Authority's members from a future water project that attempts to obtain an assignment of a state-filed application with a more senior priority date for diversion from the Sacramento River. (*Id*., pp. 15-16.) Given this context, the word "may" in Water Code section 10504 is mandatory, and the Board must assign or release a petition when the stated criteria are met.

Second, the Draft Decision conflates the Board's authority to act on a petition for assignment or release and the Board's authority to issue a permit for the appropriation of water. Regarding the procedures applicable to a petition for assignment, the Water Code states:

> Each petition for assignment of all or a portion of an application filed pursuant to this part, which application has not been completed in accordance with law and the regulations of the [B]oard, shall include as a part thereof a proposed completed application consistent with the requested assignment, and describing petitioner's proposed project… [P]rocedure with respect to each [petition for assignment] shall be in accordance with Chapters 3 (commencing with Section 1300), 4 (commencing with Section 1330) and 5 (commencing with Section 1340), Part 2, Division 2 of this code relating to notice, protests, hearing, and action on applications for permits to appropriate water. The hearing shall be for the purpose of determining whether

> the application should be assigned pursuant to Sections 10504 and 10505 and whether the proposed completed application submitted by the petitioner should be approved in whole or in part. When the [B]oard's determination is favorable to the petitioner, it shall assign all or a portion of the application to the petitioner, accept and approve the assigned portion, and issue a permit as in other cases provided by law.

(Wat. Code, § 10504.01.) Moreover, Water Code section 10500 refers only to filing a state-filed application. Water Code section 10500 similarly reads in relevant part: "Any *application filed* pursuant to this part shall be made and filed pursuant to Part 2 … ." (emphasis added). Thus, the Water Code contemplates a process for filing, completion, and review of a state-filed application, separate and apart from the Board's issuance of a permit on an application for the appropriation of water.

Third, as a matter of statutory construction, Water Code sections 10504 and 10505 describe the exclusive criteria for the Board's evaluation of a petition for release or assignment of a state-filed application. (*Wildlife Alive v. Chickering* (1976) 18 Cal.3d 190, 196, ["In the grants [of powers] and in the regulation of the mode of exercise, there is an implied negative; an implication that no other than the expressly granted power passes by the grant; that it is to be exercised only in the prescribed mode …" (internal quotes omitted)], disapproved on other grounds in *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1106-1109.) The three relevant criteria for acting on a petition are whether the release or assignment: (1) "is for the purpose of development not in conflict with [a] general or coordinated plan"; (2) "is for the purpose of development not in conflict with water quality objectives established pursuant to law"; and (3) "will, in the judgment of the [B]oard, deprive the county in which the water covered by the application originates of any such water necessary for the development of the county." (Wat. Code, §§ 10504, 10504.5, 10505.) The Legislature, by listing these three criteria, intended to exclude consideration of all other factors. Thus, the statutes relevant to the Board's evaluation of petitions for release or assignment of a state-filed application neither direct nor authorize the Board to consider factors not listed, including the public interest, generally.

Finally, while the Board issues a permit for appropriation "contemporaneous" with approval of an assignment (Order WR 83-1, p. 15 ["The recipient of an assignment and the contemporaneous permit receives a right to develop water …"]), this simply means that a permit is issued at the same time as approval of an assignment. The word "contemporaneous" means no more or no less.

There is no authority supporting the Board's assertion that the standards applicable to issuance of a permit similarly apply to consideration of a petition for assignment or release, and therefore public interest considerations are not relevant to acting on such petitions.

2. Even If the Board May Consider the Public Interest, the Draft Decision's Area of Origin and Water Right Priority Analyses Fail to Support a Denial of the Authority's Petition for Assignment

The Draft Decision states that approval of the petition for assignment would grant the Authority's water right priority over those junior to September 30, 1977, and that such a reordering would erode the available supply for existing rights, exempt the Project from watershed of origin protections, prioritize the Project over future development in the watershed of origin, and thereby allow exports of Project water even when the CVP and SWP diversions are constrained by area of origin protections. (Draft Decision, p. 33.) The Board's conclusions are unsupported by the administrative record and inconsistent with the Board's own guidance.

a. Assignment Would Not Erode Existing Rights

The Authority's WAA indicate that there would be an annual average of 462,000 to 1,172,000 AF/yr (from the Authority's Historical Analysis and CalSim II Analyses, respectively) available in the Sacramento River in excess of proposed Project diversions. (Authority's Closing Brief, at 19:16-27; SITES-070c, ¶ 21.) The Authority's WAA accounts for existing demands, and because there is a significant quantity of water available in the Sacramento River after accounting for existing demands as well as Project diversions, any water right holders that would be junior to the Authority's requested 1977 priority date have adequate supply available to meet their needs. Further, any junior right holder in the county of origin that has a future need that conflicts with the Project may seek a right as against Project exports. (See section J.2.b, *infra*; see also D-1635, p. 87) [stating that the Board may grant a release of priority or assignment of a state-filed

application and expressly condition a permit so that an appropriation "is subject to diminution by applications seeking water for use within [the counties of origin]"]; D-1224, p. 27) ["The release from priority … was conditioned upon a general reservation of water required to meet the full needs of the counties of origin"].)

b. Assignment Would Not Exempt the Project from Area of Origin Laws

Partial assignment of A025517 would not exempt the Project from area of origin laws. To receive an assignment, the Project must comply with the County of Origin Laws. "The County of Origin Laws only apply to projects constructed pursuant to an assignment or release of the priority of state filed applications." (D-1635, p. 31.) In compliance with, and in anticipation of, a grant of the Authority's petitions for assignment and release from priority, the Authority submitted evidence intended to comply with the County of Origin Laws in Water Code sections 10500 through 10505. (See Authority's Closing Brief, pp. 11-25.) The Board's review and approval of the Authority's petitions, which consider county of origin protections (as required in Water Code section 10505), ensures that the Authority and the Project are not exempt from area of origin protections.

As stated in a report issued by the Board regarding area of origin laws:

> The County of Origin Law of 1931, was enacted in response to the passage in 1927 of laws which authorized the state to file applications to use unappropriated water as part of general water resources developments. These projects were being planned to export major amounts of water from areas of water abundance to areas of water need. Areas of abundance included Northern California, and the Sierra Nevada mountains. Areas of need included the San Joaquin Valley and Southern California.

(Craig M. Wilson, Delta Watermaster, California's Area of Origin Laws: A Report to the State Water Resources Control Board and the Delta Stewardship Council (Wilson Report), p. 5.)[22] Thus, the County of Origin Laws, codified in Water Code section 10500 et seq. (*id.*, p. 4), contemplated the need to protect areas of origin from projects that sought to move water from Northern California to Southern California that would receive senior priority dates associated with state filings. The County of Origin Laws strike a balance between current demands for

[22] Available from https://www.waterboards.ca.gov/board_info/agendas/2013/oct/100813_7origin.pdf [last accessed May 20, 2026].

water and future needs in counties of origin. Specifically, Water Code section 10505.5 states, "any permit hereafter issued pursuant to such an application, and any license issued pursuant to such a permit, shall provide, that the application, permit, or license shall not authorize the use of any water outside of the county of origin which is necessary for the development of the county." Thus, compliance with Water Code section 10505.5 ensures those in the county of origin have a mechanism to secure a right in future if needs arise as against an assignee exporting water from the county of origin.

The Wilson Report similarly concludes:

> Where water may be needed for future needs of the Area of Origin [including a county of origin], the laws are not intended to preclude export to other areas during the period before those needs arise. Instead, the needs of the Area of Origin take priority if and when they arise.

(Wilson Report, p. 6.) The Wilson Report further states:

> The cases also make it clear that the [Area of Origin] Laws [including the County of Origin Law] do not independently create water rights for Area of Origin inhabitants. Rather, a water right must exist before the protection of the laws may be invoked … . [¶] Where there are no water rights in existence, the Area of Origin Laws provide a means for an Area of Origin inhabitant to acquire a water right that would have priority over the water rights of the export projects.

(Wilson Report, p. 14.)

Contrary to the statutory protections for the preservation of future county of origin water needs, the Draft Decision suggests that CVP and SWP Contractors could "strategically store" water through their participation in the Project, even when area of origin demands are not fully met and the CVP and SWP are prohibited from diverting water. (Draft Decision, pp. 34-35.) The AHO concludes that "area of origin restrictions should apply to all three projects to eliminate the opportunity for an end-run around those protections." (*Id*., p. 35.) First, this conclusion ignores that only the Authority's project and petitions are subject to review by its applications, not the CVP or SWP.

Second, the AHO's conclusions suggest that partial assignment of A025517 would tacitly approve of the Authority and its Storage Partners' circumvention of county of origin protection. There is nothing in the evidentiary record that supports this accusation against the Authority and

its Storage Partners. Nor is this accusation logical or feasible in light of the statutory requirements discussed herein.

Third, in approving partial assignment of A025517, the Board must find that the Authority complied with relevant area of origin law, namely, the County of Origin Laws. Specifically, the Authority's analysis of whether counties of origin would be deprived of water needed for development, ensures these counties are protected. The Authority has completed the statutorily requisite analyses to support a conclusion by the Board that water remains available for future needs. Thus, neither the Authority nor its Storage Partners would be making an "end-run" around area of origin protections.

Even if such a scenario exists, the Board could, consistent with its past practices, simply condition the Authority's permit by expressly providing that water the Authority appropriates is subject to diversion by applicants seeking water for use within the counties of origin. (See, e.g., D-1635, p. 87; D-1224, p. 27.) The Board's review of county of origin issues at the time of the Authority's application, therefore, ensures that the Project would not—and could not—make an "end-run" around area of origin law.

The Draft Decision acknowledges that, while the Authority has committed to operating in a manner that would not adversely affect operation of the CVP or SWP, "this term would not address a scenario where CVP and SWP diversions, but not Project operations, are restricted by area of origin protections, nor would this term prevent impacts on existing or future junior users within the area of origin." (Draft Decision, pp. 34-35.) Again, the record contains no facts to support the suggested scenario where CVP and SWP diversions, but not the Project, would be restricted by area of origin protections. Moreover, the Board's Draft Permit includes proposed Term 15, which would seemingly prevent the Authority from diverting under these hypothetical conditions.

Thus, the evidence suggests that significant amounts of water remain in the Sacramento system for existing and future junior users. Further, mechanisms exist for those junior users to secure water as against Project exports once the demand for water exists. In the meantime, the

AHO should partially assign A025517 to the Authority and allow it to make water available for existing demands.[23]

3. The Authority Presented Substantial Evidence that Counties of Origin Would Not Be Deprived by Partially Assigning A025517 to the Authority

The Draft Decision does not analyze the data submitted by the Authority supporting the conclusion that the Project would not deprive the counties of origin of water necessary for development. As stated in the Authority's Closing Brief:

> The State Board must have "some knowledge of the water needs and the water resources of the counties of origin" to reasonably conclude that an assignment will not deprive the counties of water needed for development; however, "[t]he amount and type of information which [is] necessary … depend[s] on the circumstances of each case." (25 Ops.Cal.Atty.Gen. 36.)

(Authority's Closing Brief at 19:1-5.) "For only with such information can the [Board] really consider whether the water covered by the application proposed to be assigned will or will not be needed." (Opinion No. 54-159, 25 Ops.Cal.Atty.Gen. 35, 36 (1955).) The amount of information available to the Board need not be exhaustive; rather, the Board may determine:

> *on the basis of information then available to it* that the water covered by the [State Filed Application] is not necessary for the development of the county of origin, or that the condition inserted in the assignment or release will adequately preserve for those in the county a preferential right to use the water when they need it.

(Opinion No. 53-298, 25 Ops.Cal.Atty.Gen. 8, 17 (1955), emphasis added; see also Authority's Closing Brief at 20:24-28.)

The Authority submitted extensive evidence demonstrating that counties of origin would not be deprived by a partial assignment of A025517 to the Authority. (Authority's Closing Brief at 18:22-21:9.) This evidence identifies counties of origin and projected annual water demands in such counties, as compared to available supplies.

Additionally, the Authority also executed a Memorandum of Understanding with Colusa County, a county of origin—and proposed a similar agreement with Glenn County, another county of origin—to coordinate and collaborate to determine the amount of water available from

[23] If the Board partially assigns state-filed application 025517, it should delete Term 27 because Term 27 appears intended to implement watershed of original protections in Water Code section 1215 et seq., which would not apply to the Project.

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Funks and Stone Corral Creeks to ensure that the Project would not deprive these counties (of origin) of water needed from these creeks for development. (SITES-070c, ¶ 22; Authority's Closing Brief at 19:23-20:11.)

The Draft Decision does not identify any currently known needs or the scope of water resources of the counties of origin to support its conclusion that assignment will deprive counties of water needed for development. Nor does the Draft Decision state that such information is missing from the record. Therefore, there is insufficient information in the Draft Decision supporting the proposed denial of the Authority's petition for partial assignment on the basis of depriving counties of origin of water needed for development. The Authority does not dispute that the Board, under its ongoing jurisdiction over water rights, may condition the Project as necessary when information and analysis shows that Project operations are depriving a county of origin of water needed for development. However, the Board should partially assign A025517 to the Authority based on currently available information and proposed adjustments in the future, as appropriate based on any new information.

4. The Authority's Subordination Agreements Do Not Present an Insurmountable Challenge to Administration of the Water Right Priority System

The Authority agreed to subordinate to the following Sacramento River/Delta water rights junior to the September 30, 1977, priority date in state-filed application 25517 (AHO-025; AHO-312):

25616: 12/22/77 (City of West Sacramento)
25727: 5/1/78 (Natomas Central Mutual Water company (NCMWC))
27893: 9/28/83 (Contra Costa Water District)
30358: 4/19/94 (Woodland-Davis)
30410: 11/2/94 (Pelger Mutual Water Company)
28238: 11/17/94 (Willow Creek Mutual Water Company)
30445: 5/30/95 (Maxwell Irrigation District)
30454: 6/13/95 (Sacramento County Water Agency)
30812: 11/19/98 (Princeton-Codora-Glenn Irrigation District)
30813: 11/19/98 (Provident Irrigation District)
30838: 2/18/99 (Glenn-Colusa Irrigation District)
31436: 5/13/2003 (Reclamation District 108)
31919: 1/20/12 (River Garden Farms)

The Authority also agreed to subordinate to the following CBD (and tributary) water rights junior to the September 30, 1977, priority date in state-filed application 25517 (Authority's Closing Brief, pp. 104-106):

26141: 11/29/79
26604: 11/5/80
29471: 4/20/89
30169: 8/4/92
28985: 6/24/96

The Draft Decision states that: "Athough the Authority and the subordinating right holders may have intended to reverse priority as between the Authority's permit and junior rights covered by the subordination agreements, that reversal of priority does not change the priority of junior rights with and without an agreement vis-à-vis one another." (Draft Decision, p. 36.) From this, the Draft Decision concludes that "[i]t is unclear how the Board would effectuate these agreements consistent with the rule of priority when implementing curtailments during times of shortage." (*Ibid*.)

Assuming the Board assigns A025517 to the Authority and the Authority's water right permit contains a subordination term similar to the Authority's proposed Term 22 in the Draft Permit submitted with its May 27, 2025 closing brief (see Appendix 2),[24] the subordination term would not frustrate the Board's administration of the water rights priority system. To implement the subordination term, the Authority would bypass flow equivalent to the demands in the rights the Authority has subordinated to. Junior users, including both those that the Authority has subordinated to and others, would then take the available water (including the water the Authority bypasses) in order of priority relative to each other. The Board would not need to attempt to account for the subordination term when administering the water right priority system as between junior rights that the Authority has subordinated to and others. Thus, the Board's subordination term would not frustrate administration of the water right priority system and is not a basis for denying the Authority's petition for partial assignment.

[24] This is the same as the Authority's proposed Special Term 1 as set forth in the Authority's March 26, 2025 Consolidated List of Proposed Permit Terms.

5. Assignment Would Not Conflict with Water Quality Objectives Established Pursuant to Law

The Draft Decision states that "based on currently available information, Project operations are likely to cause or contribute to exceedances of methylmercury water quality objectives in receiving waters of releases from Sites Reservoir." (Draft Decision, p. 36.) The Authority's analysis found that the methylmercury sportfishing objective of 0.2 mg/kg wet weight could be exceeded in Sites Reservoir and in receiving surface waters. (AHO-073, pp. 60-62; SITES-116c at 11:25-12:5, 22:7-16.) Based solely on this singular result, and without any further discussion, the Draft Decision summarily concludes that the Project will conflict with applicable water quality objectives, and thus proposes to deny the petitions for assignment and releases from priority. (Draft Decision, pp. 36-37.) This conclusion ignores the conditions proposed in the Draft Permit, as well as other available tools, which will ensure the Authority complies with the methylmercury sportfishing objective. Neither the assignment of a portion of a state-filed application nor the release of a state-filed application from priority conflict with water quality objectives where the project is operated to assure water quality objectives are met. (See *El Dorado Irrigation District v. State Water Resources Control Bd.* (2006) 142 Cal.App.4th 937, 972.)

The Project EIR (AHO-073) and Authority's water quality expert testimony (SITES-116c) conclude that, based on currently available information, the Project may degrade surface water quality during operation leading to *temporary* increases in aqueous and fish tissue methylmercury concentrations and exceedances of methylmercury water quality objectives in receiving waters. (See Draft Decision, p. 130 [acknowledging potential methylmercury impacts are not consistent over the lifetime of the Project and, in fact lessen over time].) However, even under worst-case long-term scenarios, the relative increases in fish tissue methylmercury concentrations in the Delta are not likely to be measurable. (AHO-073, p. 6-65.)

Importantly, these conclusions are based, in significant part, on the uncertainty of the effectiveness of mitigation measures in reducing concentrations of methylmercury such that the releases do not cause exceedances. (SITES-116c, ¶ 6.) The Authority's water quality expert,

Cameron Irvine, opined that implementing MM WQ-1.1 constitutes the best available scientific approach to minimize mercury concentrations in fish in Sites Reservoir and incremental increases in fish tissue in downstream waterbodies. (*Ibid.*; see also Authority's Closing Brief at 16:15-18:3, 60:18-27; Authority's Reply Brief at 27:27-29:5.) Mr. Irvine stated that the potential exceedances may occur absent this mitigation, indicating that implementation of MM WQ-1.1 would make it more likely the objectives are met. (SITES-116c, ¶ 55.)

The Draft Permit would require the Project to implement mercury management provisions *in addition to* MM WQ-1.1, thereby increasing the probability that methylmercury objectives will be met. (See Terms 32, 33, 34, 38-39.) These terms require the Authority to avoid or reduce to the extent feasible any elevated mercury concentrations that may occur from the initial fill and operation of the Project and to take preconstruction actions to address potential sources of mercury, including the comprehensive RMP, which ensures cross-agency coordination that is similar to, if not more robust than, a Report of Waste Discharge required for any other discharger. (Draft Decision, p. 131.)

In effect, these additional extensive provisions ensure that sufficient information is obtained, as available, regarding the Project's compliance with methylmercury water quality objectives and that such objectives are met. The evidentiary record (AHO-73, pp. 64-68, AHO-108, pp. 42-44, SITES-116c, ¶¶ 53-55) and Terms 32, 33, 38, and 39 support the conclusion that the Project is "not in conflict with" water quality standards or applicable waste discharge requirements. Thus, neither the petition for assignment nor petition for releases would conflict with water quality objectives, and this factor is not a basis for denying the petitions.

K. The Authority's Petition for Releases from Priority Should be Granted

As referenced, the Authority submitted a petition for releases from priority, which, if granted, would subordinate the priority of other state-filed applications that may be developed in the future in favor of the Authority's permit. The Draft Decision proposes denying the petitions for release from priority without prejudice. For the reasons discussed herein, the Board should grant the petition for releases from priority.

1. The AHO's Purported Frustration of Administration of Water Right Priorities Is Not a Basis for Denying the Petition for Releases

The Draft Decision denies the petition for partial assignment because it would not best conserve the public interest; however, the Draft Decision does not expressly state "public interest" as a reason for denial of the petition for release from priority. (Draft Decision, pp. 32, 37 ["The public interest factors that weigh against assignment ... do not necessarily apply against approval of the Authority's petition for releases from priority, however."].) Nevertheless, the Draft Decision discusses a public interest issue, administration of the water right priority system, as a basis for denying the petitions for releases. For the reasons discussed above in section J.1, it is improper to consider public interest issues when acting on a petition for release.

Even if the Board may consider the public interest, the water right administration issue is not insurmountable. The Draft Decision suggests that granting the petition for releases would create a water right administration challenge like the petition for assignment and proposed subordination of water rights. The Draft Decision states: "[t]he releases would effectively reverse the priority of the state-filed applications and the Authority's permit, but they would not change the priority of water rights with priority dates between the state-filed applications and September 30, 1977, relative to the state-filed applications or the Authority's permit." (Draft Decision, p. 36, fn. 16.) This observation is not a scenario unique to the Project; this is merely the system of administration established for state-filed applications and associated petitions for assignment and release provided for under Water Code section 10500 et seq. (See, e.g., Order WR 83-1, p. 15 ["The priority of an original application filed by the recipient of a release from priority is improved only as against the state-held application of which priority is released"].)

To implement the releases, the Board would require the water users subject to the releases to bypass flow equivalent to the Authority's demands. Water users between the priority date of the water users subject to the releases and the Authority's priority date would then take the available water in order of priority relative to each other. The Board would not need to attempt to account for the releases when administering the water right priority system as between water users between the priority dates of the water users subject to the releases and the Authority's

priority date. In this regard, the releases would not frustrate administration of the water rights priority system.

The AHO does not identify any concern specific to the Project or the granting of this petition for releases from priority. Nevertheless, the Board has the authority to appropriately condition the Project. (See, e.g., Order WR 83-1, p. 16 ["The operative effect of both the reservation in the release from priority and the permit condition is to make" the Project's application for appropriation of water "junior to all applications for the appropriation and use of water in the county or watershed in which the water originates irrespective of whether the applications were filed later or have a higher number than" the Project's application for appropriation of water].) Without identifying any reason specific to the application by the Authority for releases from priority, the AHO's Draft Decision is unsupported and should be reconsidered, including any applicable permit conditions that would support the granting of the application.

More broadly, the Draft Decision is seemingly using the Authority's petition to seek policy changes to long-established statutory provisions. The Authority's petition for releases from priority is not the appropriate mechanism to reject or seek to change this system of administration and, thus, is not a reasonable ground for rejection of the Authority's petition.

2. Approval of the Petition for Releases Would Not Conflict with Water Quality Objectives

The Draft Decision states that the petition for releases from priority were denied because "the Authority has failed to demonstrate that approval of the petitions would not 'conflict with … water quality objectives established pursuant to law.' " (Draft Decision, p. 32.) As discussed above in section J.5, in regard to the Authority's petition for assignment, the Project is sufficiently conditioned under the Draft Permit to ensure compliance with applicable water quality objectives, thereby warranting approval of the petition for releases.

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CONCLUSION

For the foregoing reasons, and as requested herein, the Draft Decision and Draft Permit should be revised to provide for the State Water Board's timely approval of the Authority's Application 25517X01 and related petitions for partial assignment and releases from priority.

Respectfully submitted,

SOMACH SIMMONS & DUNN
A Professional Corporation

DATED: May 22, 2026

By *s/ Andrew M. Hitchings*
Andrew M. Hitchings
Attorneys for Applicant/Petitioner
SITES PROJECT AUTHORITY

SOMACH SIMMONS & DUNN
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PROOF OF SERVICE

I am employed in the County of Sacramento; my business address is 500 Capitol Mall, Suite 1000, Sacramento, California; I am over the age of 18 years and not a party to the foregoing action.

On May 22, 2026, I served the following document(s):

SITES PROJECT AUTHORITY'S DETAILED COMMENTS ON ADMINISTRATIVE HEARINGS OFFICE DRAFT DECISION AND DRAFT WATER RIGHT PERMIT

XXX (electronically) I served the above listed document(s) by electronically transmitting a true copy to the person(s) at the electronic mailing addresses as set forth in the attached Service List.

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 22, 2026, at Sacramento, California.

Crystal Rivera

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SERVICE LIST
8/1/2025

Andrew M. Hitchings
Aaron A. Ferguson
Kelley M. Taber
Michelle E. Chester
Crystal Rivera
Pennie MacPherson
ahitchings@somachlaw.com
aferguson@somachlaw.com
ktaber@somachlaw.com
mchester@somachlaw.com
crivera@somachlaw.com
pmacpherson@somachlaw.com
Attorneys for Sites Project Authority

Alycia Forsythe (Sites Project Authority)
Angela Bezzone (MBK Engineers)
aforsythe@sitesproject.org
bezzone@mbkengineers.com

Frances Tinney
John Buse
Center for Biological Diversity
ftinney@biologicaldiversity.org
jbuse@biologicaldiversity.org

Chris Shutes
Sarah Vardaro
California Sportfishing Protection Alliance
blancapaloma@msn.com
sarah@calsport.org

Steven L. Evans
CalWild
sevans@calwild.org

Richard Morat
rjmorat@gmail.com

Clarke F. Ornbaun
clarkeornbaun@yahoo.com

Keiko Mertz
Jann Dorman
Ronald Stork
Gary Bobker
Friends of the River
keiko@friendsoftheriver.org
janndorman@friendsoftheriver.org
RStork@friendsoftheriver.org
gbobker@friendsoftheriver.org

Osha R. Meserve
Soluri Meserve, A Law Corporation
osha@semlawyers.com
legal@semlawyers.com
Attorney for County of San Joaquin

Barbara Vlamis
Michael B. Jackson, Esq.
James Brobeck
AquAlliance
barbarav@aqualliance.net
mjatty@sbcglobal.net

Ben King
T&M King Farms LLC
bking@pacgoldag.com

Jenna Rose Mandell-Rice
State Water Contractors
jrm@vnf.com

Miles Krieger
Kira Johnson
Best Best & Krieger
Miles.Krieger@bbklaw.com
Kira.Johnson@bbklaw.com
Attorneys for State Water Contractors

Chief Caleen Sisk
Gary Mulcahy
Winnemem Wintu Tribe
caleenwintu@gmail.com
gary@ranchriver.com

S. Dean Ruiz
John Herrick
Dante J. Nomellini, Jr.
Dante J. Nomellini, Sr.
Brett G. Baker
dean@mohanlaw.net
jherrlaw@aol.com
dantejr@pacbell.net
ngmplcs@pacbell.net
brettgbaker@gmail.com
Attorneys for Central Delta Water Agency, et al.

Adam Keats
California Water Impact Network
adam@keatslaw.org

Barbara Barrigan-Parrilla
Cintia Cortez
Spencer Fern
Restore the Delta
barbara@restorethedelta.org
cintia@restorethedelta.org
spencer@restorethedelta.org

Caty Wagner
Molly Culton
Sierra Club
caty.wagner@sierraclub.org
molly.culton@sierraclub.org

Konrad Fisher
Daniel Estrin
Monti Aguirre
Water Climate Trust, Waterkeeper Alliance, and International Rivers
k@waterclimate.org
destrin@waterkeeper.org
monti@internationalrivers.org

Allison Mitchell, Esq.
Amy Aufdemberge, Esq.
Allison Jacobson
Lisa Holm
United States Department of Interior
Bureau of Reclamation
allison.mitchell@sol.doi.gov
Amy.Aufdemberge@sol.doi.gov
ajacobson@usbr.gov
lholm@usbr.gov

Erick Soderlund, Esq.
Janice Wu, P.E.
Department of Water Resources
Janice.Wu@water.ca.gov
Erick.Soderlund@water.ca.gov

Eric Buescher
Ashley Overhouse
Scott Artis
Barry Nelson
San Francisco Baykeeper, Defenders of Wildlife, Golden State Salmon Association, and The Bay Institute
eric@baykeeper.org
aoverhouse@defenders.org
scott@goldenstatesalmon.org
barry@westernwaterstrategies.com

Lowell Ashbaugh
Fly Fishers of Davis
ashbaugh.lowell@gmail.com

Regina Chichizola
Kasil Willie
Save California Salmon
regina@californiasalmon.org
kasil@californiasalmon.org

Matthew Clifford
Trout Unlimited Inc.
mclifford@tu.org

Donald B. Mooney
Friends of the River,
California Sportfishing Protection Alliance,
and Sierra Club
dbmooney@dcn.org

Mark Rockwell
Northern California Council of Fly Fishers International
mrockwell1945@gmail.com

Glen Spain
Pacific Coast Federation of Fishermen's Association et al.
fish1ifr@aol.com
lisa@pcffa.org
georgebradshaw707@gmail.com
sarahjanebates@gmail.com
fjegger@gmail.com

Maggie Foley
Kristin Peer
Bartkiewicz, Kronick & Shanahan
mef@bkslawfirm.com
kbp@bkslawfirm.com
Attorney for Contra Costa Water District

Adrian Covert
The Historic Klamath, Pier 9,
The Embarcadero, San Francisco
acovert@bayareacouncil.org

Angela Smelser
Elston Bill
Chairman Wayne Mitchum
Vice Chairperson Amanda Mitchum
Cachil DeHe of Wintun Indians of the Colusa Indian Community Council
asmelser@colusa-nsn.gov
m1bigman@icloud.com
mitchum530@gmail.com
amitchum@colusa-nsn.gov

Theresa Moore
Chhé'ee Fókaa Band of Northeastern Pomo
theresajmoore@gmail.com
zmcfarla@calpoly.edu

Laverne Bill
Nathan Bill
Paskenta Band of Namlaki Indians
lbill@paskenta.org
nbill@paskenta.org

Margaret Rosenfeld
Elaina Erola
margaret@fsrlegal.net
admin@fsrlegal.net
Attorney for Colusa Tribe

Greg Wilson
Wilson Water Resources
wilson.wr@yahoo.com

Administrative Hearings Office
Sites-WR-Application@waterboards.ca.gov

ATTACHMENT A

CalSim 3 Modeling Analysis of Sites Project Diversions Under Draft Water Right Terms 23, 30, and 31

Date: May 22, 2026

Prepared by: Chad Whittington, P.E.

Subject: CalSim 3 Modeling Analysis for Sites Project Diversions Under Draft Water Right Terms

Jacobs Engineering Inc.
2485 Natomas Park Dr
Suite 600
Sacramento, CA 95833
T +1.916.920.0300
www.jacobs.com

1. Background

The State Water Resources Control Board (SWRCB) released a draft water right permit (Draft WR) for the Sites Project for public comment on March 20, 2026. The Draft WR includes new terms limiting Sacramento River diversions to Sites Reservoir that were not included in the 2024 Sites Project Operations Incidental Take Permit (2024 ITP or Sites ITP) issued by the California Department of Fish and Wildlife (CDFW) in December 2024. This document summarizes the assumptions, approaches, and results of CalSim 3 modeling conducted to estimate the effects of Draft WR terms 23, 30, and 31 on Sites Project diversions.

CalSim 3 is a mathematical model developed jointly by the United States Department of the Interior, Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) to simulate operations of the Central Valley Project (CVP) and State Water Project (SWP) over a range of hydrologic conditions. The model represents the best available planning-level analytical tool to evaluate CVP/SWP system operations and other water-related projects in California.

CalSim 3 uses historical hydrologic information from October 1921 to September 2021 to simulate California water resource management operations, including reservoir storage, water flows in the Delta, water exports, and water deliveries. Inputs to CalSim 3 include water diversion requirements and demands, stream accretions and depletions, rim basin inflows, irrigation efficiencies, return flows, nonrecoverable losses, and groundwater operations. Central Valley and tributary rim-basin hydrologic inputs are developed using a process designed to adjust the historical sequence of monthly stream flows over the 100-year period to represent a sequence of flows at a future level of development.

CalSim 3 is an update to CalSim II, the modeling platform used to evaluate long-term operations of the Sites Project in the 2022 Final Environmental Impact Report (EIR) and the 2024 ITP. In 2024, the Sites Project Authority transitioned to CalSim 3 to conduct operations modeling. A comparison of Sites Project modeling in CalSim II and CalSim 3 was submitted to the SWRCB in November 2025 [Jacobs CalSim 3 Modeling for Sites Project Technical Memorandum, Oct. 31]. All analyses presented in this report reflect CalSim 3 modeling.

The effects of Draft WR terms 23, 30, and 31 on Sites diversions were also evaluated using the Sites Historical Water Availability Analysis (WAA) Tool. The results of this evaluation are summarized in a technical memorandum prepared by Wesley Walker of MBK (Walker, 2026). These WAA results show similar patterns of diversion reductions to those produced by CalSim 3, with some differences attributed to variations in climate and hydrologic assumptions, simulation periods, and system-wide operational assumptions. Overall, both modeling approaches indicate comparable magnitudes of diversion reductions associated with each Draft WR term.

2. Modeling Assumptions and Key Differences

Ten CalSim 3 simulations were used to assess the effects of Sites Draft WR terms 23, 30, and 31 and to compare those effects against the 2024 ITP. Each scenario applies identical assumptions for CVP/SWP regulations, climate conditions, land use, level of development, and system-wide demands.

System-wide regulatory assumptions in all scenarios are consistent with the 2024 Biological Opinions issued by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as amended by Reclamation's recently approved Action 5. Under these assumptions, Sites Project is restricted from impacting CVP and SWP compliance with regulatory standards.

All CalSim 3 scenarios assume 2040±15 (2040 Median) climate conditions, developed using global climate model projections for 2025–2055 to estimate future temperature and precipitation levels. Relative to historical hydrology, the 2040 Median climate produces slightly higher flows from December through February and slightly lower flows from March through July. Long-term average annual unimpaired flow is also slightly lower under the 2040 Median climate compared to historical conditions.

Table 2-1. Sites Project CalSim 3 Modeling Diversion Criteria. compares the CalSim 3 modeling assumptions for diversion criteria included in the 2024 ITP ("Sites ITP") with those in the Draft WR ("Sites Draft WR"). The table also provides notes on the approximate magnitude of diversion reductions associated with each Draft WR requirement relative to the 2024 ITP. Additional detail on these impacts is provided in the following sections of this memorandum. Diversion volumes are reported with units of 1,000 acre-feet (TAF).

Table 2-1. Sites Project CalSim 3 Modeling Diversion Criteria.

Criteria	Sites ITP	Sites Draft WR	Notes
Sites Storage Capacity	1.47 MAF	Same	
Diversion Season	Diversions allowed September 1 - June 14	Diversions allowed November 1 - June 14	The Draft WR removes September and October from the diversion season, which **does not significantly affect operations**. In CalSim 3 simulations, diversions do not occur in September, while October diversions rarely occur.
Annual Diversion Limit	October 1 – June 14 annual diversion limit of 986 TAF	November 1 - June 14 annual diversion limit of 986 TAF	This limit is based on the maximum annual diversion volume reported from CalSim modeling conducted for the ITP Application. **This annual limit rarely controls operations**.
Shasta Spring Pulse	Limit diversions in months with Shasta releases for Spring Pulse objectives	Same	
Red Bluff diversion capacity	2,100 cfs	Same	
Red Bluff Bypass	3,250 cfs	Same	
Hamilton City diversion capacity	1,800 cfs & variable winter capacities	Same	

Criteria	Sites ITP	Sites Draft WR	Notes
Hamilton City Bypass	4,000 cfs	Same	
GCID Main Canal maintenance	Last week in Jan, first week in Feb	Same	
Flow Dependent Diversions **[Draft WR term 23a]**	Diversions limited by flow at Bend Bridge and Hamilton City (per Section 9.14 of the Sites Ops ITP)	The less restrictive diversion rule curve implemented in January and February under Section 9.14 of the ITP is replaced with the more restrictive curve that had previously only been implemented for Sept-Dec and Mar-Jun	The 2024 ITP includes two sets of rule curves that govern Sites diversions at Red Bluff Pumping Plant. One curve is applied in Sep-Dec and Mar-Jun and the other is applied in Jan-Feb. The Jan-Feb curve allows for more Project diversions based on Sacramento River flow than does the other seasonal curve. The Draft WR replaces the more relaxed Jan-Feb criteria with the more restrictive criteria on Sites diversions. The more restrictive January-February criteria alone causes a **3 TAF/yr reduction to long-term Sites diversions**.
Bend Bridge Pulse Protection (BBPP) [Draft WR term 23b]	Not included	Restrict diversions for 7 consecutive days after 3-day average Sacramento River maintstem flow at Bend Bridge exceeds 8,000 cfs and Sacramento River tributary flow upstream of Bend Bridge exceeds 2,500 cfs. Off-ramp when	BBPP was included in the Final EIR, but was replaced by "Flow Dependent Diversions" (FDD) in the 2024 ITP. The BBPP alone reduces Sites diversions by **23 TAF/yr**.

Criteria	Sites ITP	Sites Draft WR	Notes
		Sacramento River mainstem flow at Bend Bridge exceeds 29,000 cfs	
Wilkins Slough Bypass [Draft WR term 23c]	10,930 cfs	November and May 1 - June 14: 10,930 cfs December 1 - April 30: 14,125 cfs	Increasing Wilkins Slough bypass from 10,930 cfs to 14,125 cfs in December-April alone has a **16 TAF/yr reduction to Sites diversions.**
Balanced Conditions	No diversions when Delta is in Balanced conditions	Same	
Near Excess conditions	Limit diversions to not use first 3,000 cfs of Surplus Delta Outflow	Same	
Unimpaired Flow/Outflow **[Draft WR term 30]**	Not included	Sites diversions are limited to volume of water in excess of 55% unimpaired flow (Delta outflow, Freeport Flow, or Bend Bridge flow, depending on permit term)	Inclusion of the 55% unimpaired Delta outflow requirements causes a **72-122 TAF/yr reduction to Sites diversions** when combined with Term 23, relative to Sites ITP.
VA Pathway **[Draft WR term 31]**	Not included	Diversions are not permitted in March through May when it is forecasted or classified as an Above Normal, Below Normal, or Dry year to prevent interference with the VA Pathway flow contributions.	Inclusion of the VA Pathway requirement causes a **71 TAF/yr reduction to Sites diversions** when combined with Term 23, relative to Sites ITP.

3. Term 23

Draft WR Term 23 includes three diversion requirements that are additive to Term 22 (which requires compliance with the 2024 Operations ITP). This section provides a brief overview of each sub-term, an explanation of how they were considered in CalSim 3, and the corresponding results.

3.1 Term 23a – Flow Dependent Diversions

The 2024 ITP includes Flow Dependent Diversion (FDD) requirements, which limit Sites Project diversions based on Sacramento River flows at Red Bluff and Hamilton City. Diversions at Red Bluff are governed by Sacramento River flow at Bend Bridge, while diversions at Hamilton City are governed by flow at Hamilton City. Under the 2024 ITP, two different flow rule curves were applied to Red Bluff diversions depending on the time of year: one in effect from September 1 through December 31 and March 1 through June 14, and a second, more relaxed curve applied from January 1 through the end of February. This seasonal relaxation allowed greater diversions during January and February at lower Sacramento River flows.

Draft WR Term 23a removes this January-February relaxation by imposing the more restrictive Red Bluff rule curve for the entire diversion season. Implementing Term 23a in CalSim 3 required adjustments to the FDD rule-curve lookup table. CalSim 3 evaluates flow available for diversion under FDD rules on a daily basis. Model results show that this adjustment reduces long-term average annual diversions by 3 TAF/yr (1%) relative to the 2024 ITP. Among the Term 23 restrictions, Term 23a produces the smallest reduction in Sites Project diversions, with larger effects occurring under Terms 23b and 23c.

3.2 Term 23b – Bend Bridge Pulse Protection

Bend Bridge Pulse Protection (BBPP) was a set of diversion criteria included in the proposed alternatives of Sites Project Final Environmental Impact Assessment/Environmental Impact Report (EIR/EIS) to protect qualified precipitation-generated pulse events (i.e., peaks in river flow rather than scheduled operational events). In the 2024 ITP, BBPP was replaced by FDD. However, Draft WR Term 23b reinstates BBPP diversion requirements in addition to the more stringent FDD requirements under Term 23a.

BBPP limits diversions to zero for up to 7 days during a qualified pulse event. In CalSim 3, the following assumptions are implemented:

- Initiation: 3-day average Sacramento River flow at Bend Bridge must exceed 8,000 cfs and 3-day average tributary flow to the Sacramento River upstream of Bend Bridge must exceed 2,500 cfs.
- Duration: 7 days upon initiation, or exceedance of 25,000 cfs at Sacramento River at Bend Bridge
- After completion of the pulse protection period, resetting criteria must be met for another pulse protection period to commence: 3-day Sacramento River flow must fall below 7,500 cfs for 7 consecutive days and 3-day moving average tributary flow must fall below 2,500 cfs for 7 consecutive days

Implementation of BBPP results in a 23 TAF/yr (9%) reduction in diversions relative to the 2024 ITP, serving as the most restrictive component of Term 23. The BBPP requirement has the greatest impact on diversions in December.

3.3 Term 23c – Wilkins Slough Minimum Bypass Flow

The 2024 ITP requires a year-round minimum bypass flow of 10,930 cfs in the Sacramento River at Wilkins Slough for Sites diversions to occur. Draft WR Term 23c increases this bypass requirement to 14,125 cfs from December 1 through April 30, while retaining the 10,930 cfs threshold for the remainder of the year.

CalSim 3 applies the Wilkins Slough Bypass requirement on a daily basis when determining flow availability for Sites diversions. Increasing the requirement from 10,930 cfs to 14,125 cfs during December–April results in a 16 TAF/yr (7%) reduction in long-term average annual diversions. The monthly pattern of diversion reductions associated with this bypass adjustment is similar to the effects observed under the BBPP requirement, but with greater reductions in December.

3.4 Term 23 Combined Effects

Figure 3-1 and Table 3-1 present average annual and monthly diversions for the following scenarios:

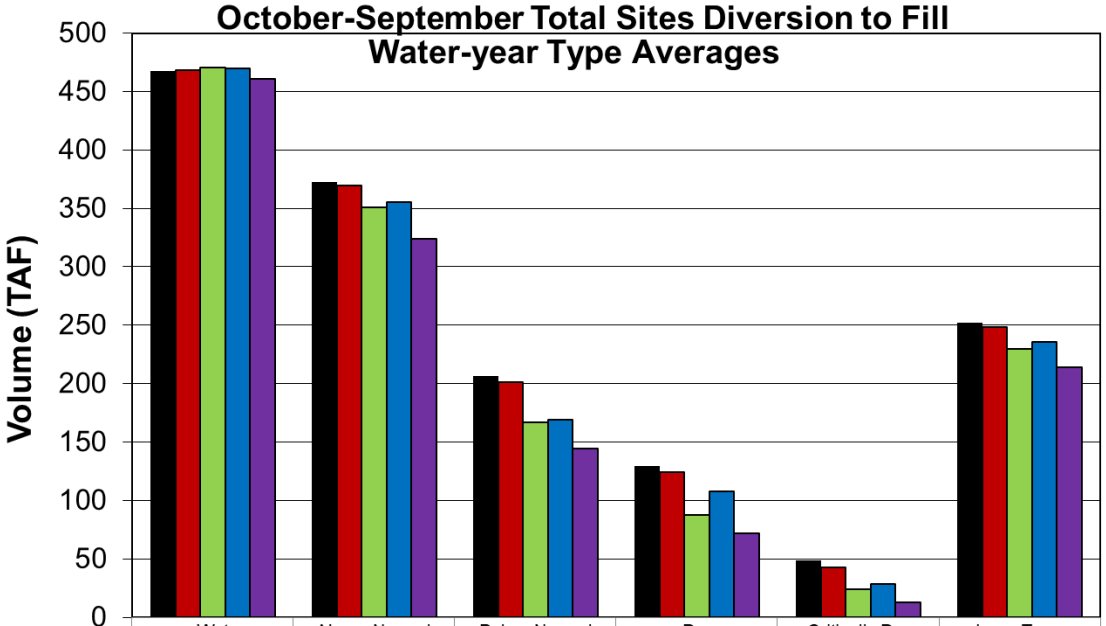
- Sites ITP – includes 2024 ITP diversion requirements
- Sites ITP + FDDadj – includes FDD adjustment (Term 23a) in addition to 2024 ITP diversion requirements
- Sites ITP + BBPP – includes BBPP (Term 23b) in addition to 2024 ITP diversion requirements
- Sites ITP + WS14k – includes a Wilkins Slough Bypass requirement of 14,125 cfs in December-April (Term 23c) in addition to 2024 ITP diversion requirements
- Sites Draft WR Term 23 – includes all diversion requirements from Term 23

The combined requirements of Term 23, including Terms 23a, 23b, and 23c, reduce the long-term annual average Sites Project diversions by 38 TAF/yr (15%) relative to the 2024 ITP. This reduction is only 1 TAF/yr less than the combined effect of applying the ITP + BBPP and ITP + WS14k constraints (39 TAF/yr). This similarity occurs because the BBPP requirement is triggered in nearly all cases when other diversion criteria do not limit Sites diversions. In practice, the BBPP criteria typically restrict diversions on days when Sacramento River flows are high, during periods when the Wilkins Slough Bypass and FDD requirements would not otherwise constrain operations.

Table 3-1. Average Monthly and Annual Sites Diversion Volumes in the 2024 ITP and Draft WR Term 23. Values in parentheses represent changes from Sites ITP.

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Annual[1]
Sites ITP	6	47	58	63	51	17	5	4	252
Sites ITP + FDDadj	6 (0)	47 (0)	56 (-2)	61 (-2)	52 (1)	17 (0)	5 (0)	4 (0)	249 (-3)
Sites ITP + BBPP	4 (-2)	36 (-11)	54 (-4)	59 (-4)	48 (-3)	20 (2)	5 (0)	4 (0)	229 (-23)
Sites ITP + WS14k	6 (0)	42 (-5)	52 (-5)	59 (-4)	49 (-3)	19 (1)	5 (0)	4 (0)	235 (-16)
Sites Draft WR Term 23	4 (-2)	33 (-15)	50 (-8)	54 (-9)	45 (-6)	20 (2)	5 (0)	4 (0)	214 (-38)

[1] Only November through June are presented in this table because diversions are zero in other months for all scenarios that include Draft WR requirements. For Sites ITP, October diversions only occur once in the 100-year simulation period (26 TAF in October 1963).



	Wet	Above Normal	Below Normal	Dry	Critically Dry	Long-Term
Sites ITP	468	372	206	130	48	252
Sites ITP + FDDadj	468	370	201	124	43	249
Sites ITP + BBP	470	351	167	88	24	229
Sites ITP + WS14k	470	355	169	108	28	235
Sites Draft WR Term 23	461	324	145	72	13	214

Figure 3-1. Average Sites Diversion Volume by Water Year Type and in the Long-Term in the 2024 ITP and Draft WR Term 23.

Figure 3-2 illustrates daily Sites Project diversions compared to flow-availability constraints in water year 2003, as simulated in CalSim 3 with all Term 23 diversion requirements applied. In this Above Normal year, a total of 452 TAF is diverted to Sites Reservoir, which is 77 TAF (15%) less than under the 2024 ITP requirements. Although the diversion season begins on November 1, no diversions occur until mid-December because the Delta remains in Balanced Conditions or flows at Bend Bridge, Hamilton City, and Wilkins Slough are below Term 23 thresholds.

A prolonged period of high Sacramento River flows allows diversions to operate at full conveyance capacity during the second half of December and most of January. By February, river flows fall below the Wilkins Slough Bypass and FDD thresholds, preventing further diversions. These BBPP, Wilkins Slough Bypass, and FDD requirements continue to restrict diversions until another extended high-flow event begins in mid-April and continues through most of May. The BBPP requirement does not apply at the start of this event because the pulse-resetting criteria were not met following the previous protected pulse.

There are three BBPP events in 2003. The first occurs in December and only lasts two days because Bend Bridge flow exceeds 29,000 cfs on the third day of the qualified pulse event. The second BBPP event spans seven days in February and coincides with a period in which diversions are also limited to zero by the Wilkins Slough bypass requirement. The third BBPP event lasts seven days in March and coincides with a 6-day period in which the Wilkins Slough Bypass and FDD criteria would have allowed for Sites diversions. Protected pulse events often coincide with Sacramento River flows exceeding the Wilkins Slough Bypass and FDD requirements. Consequently, BBPP frequently shortens the window of opportunity for Sites Reservoir to divert water when other Term 23 requirements are satisfied. In some cases, such as March 2003, BBPP completely eliminates this window of opportunity.

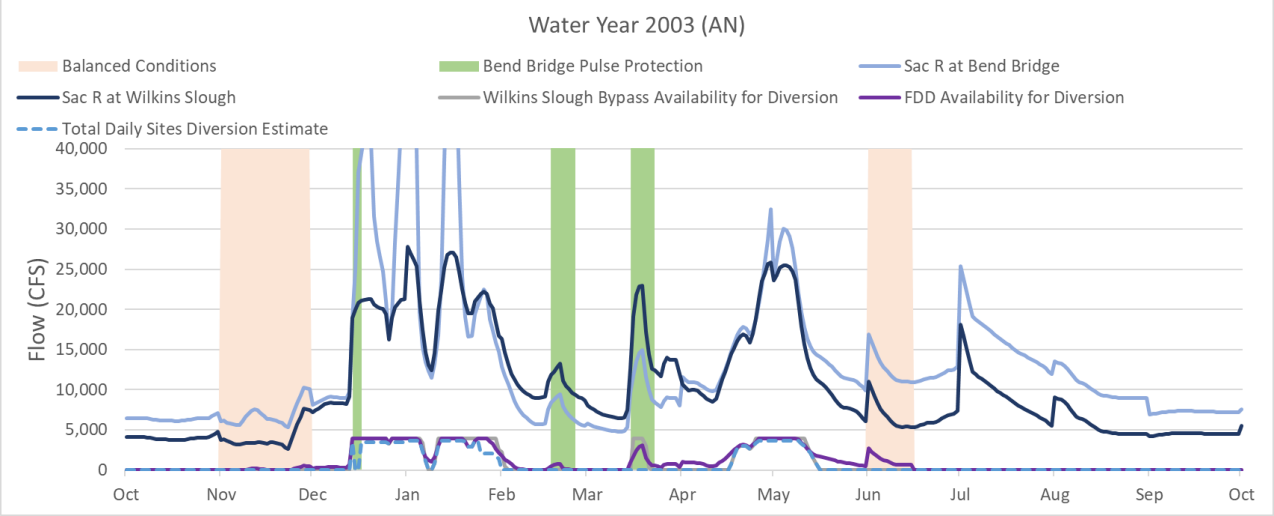


Figure 3-2. Sites Diversions and Diversion-Availability in Water Year 2003 under Draft WR Term 23.

4. Term 30

Draft WR Term 30 includes limitations on Sites diversions to prevent interference with potential unimpaired inflow and outflow regulatory requirements that may be associated with future Bay Delta Water Quality Control Plans. CalSim 3 modeling suggests that this term would have significant adverse effects on the Sites Project.

4.1 Term 30a

Draft WR Term 30a prevents Sites Project diversions from reducing Delta outflow below 55% of unimpaired Delta outflow based on an estimated seven-day running average. The following sections describe the analytical approach to implement this in CalSim 3 and the corresponding results.

4.1.1 Approach

The source CalSim 3 model does not generate unimpaired Delta outflow directly. Thus, monthly average unimpaired Delta outflow was estimated using a regression equation relating the historic 8 River Index (8 RI) to historic unimpaired Delta outflow estimates published by DWR for water years 1922 through 2015 (California Department of Water Resources, 2015). This regression relationship was then applied within CalSim 3 to dynamically compute unimpaired Delta Outflow for each month of the simulation period.

To translate monthly unimpaired and impaired Delta outflow to a daily timestep, the model used daily patterns derived from recent historical unimpaired Delta outflow estimates developed for the WAA analysis (Walker, 2026). A continuous daily unimpaired Delta outflow series from October 2012 through March 2026 was generated following the methods in Attachment 4 of the Draft WR Permit. For each month in this period, daily flow ratios (defined as daily flow divided by total monthly flow) were calculated. These daily patterns were then applied in CalSim 3 to disaggregate monthly flows into daily flows across the full 100-year simulation period. Patterns from the 2012–2026 dataset were matched to the 1922–2021 CalSim 3 period based on similarity in monthly average flow conditions.

In CalSim 3, flow availability for Sites Reservoir diversions were calculated on a daily basis. To implement Draft WR Term 30a, a new operational rule was added to ensure that Sites diversions do not impact the 55% unimpaired Delta outflow requirement. The flow volume available for Sites diversions is calculated

using a three-day lag of the seven-day running averages of impaired and unimpaired Delta outflow, consistent with the methodology described in Attachment 4 of the Draft WR Permit:

> Percent of Daily Unimpaired Delta Outflow = (7-day average daily Delta Outflow$_{3\text{-day lag}}$ / 7-day average daily Unimpaired Delta Outflow$_{3\text{-day lag}}$) * 100

4.1.2 Results

Results from the following scenarios are included in this section:

- Sites ITP
  - Includes diversion criteria from the 2024 ITP
- Sites Draft WR Term 23
  - Includes diversion criteria from the Draft WR Permit Term 23
- Sites Draft WR Term 23+30a
  - Includes diversion criteria from the Draft WR Permit Term 23 and 30a

Figure 4-1 shows average annual diversions to fill Sites Reservoir in the long-term and for each water year type classification based on the Sacramento 40-30-30 Index. Table 4-1 includes average monthly and annual diversions for each scenario. The annual average diversion under the 2024 ITP diversion requirements is 252 TAF/yr. The inclusion of WR terms 23 and 30a reduces long-term average annual diversions by 122 TAF/yr (48%) to a total of 130 TAF/yr. Relative to Term 23, Term 30a causes an 84 TAF/yr of reduction (39%) to Sites diversions. Reductions are observed for each water year type and each month. The inclusion of Term 30a eliminates any diversions in Dry and Critical years.

Table 4-1. Average Monthly and Annual Sites Diversion Volumes in the 2024 ITP and Draft WR Terms 23 and 30a. Values in parentheses represent changes from Sites ITP.

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Annual[2]
Sites ITP	6	47	58	63	51	17	5	4	252
Sites Draft WR Term 23	4 (-2)	33 (-15)	50 (-8)	54 (-9)	45 (-6)	20 (2)	5 (0)	4 (0)	214 (-38)
Sites Draft WR Term 23+30a	1 (-5)	8 (-39)	29 (-29)	39 (-24)	38 (-14)	13 (-4)	0 (-5)	2 (-2)	130 (-122)

[2] Only November through June is presented because diversions are zero in other months for all scenarios that include Draft WR requirements. For Sites ITP, October diversions only occur once in the 100-year simulation period (26 TAF in October 1963).

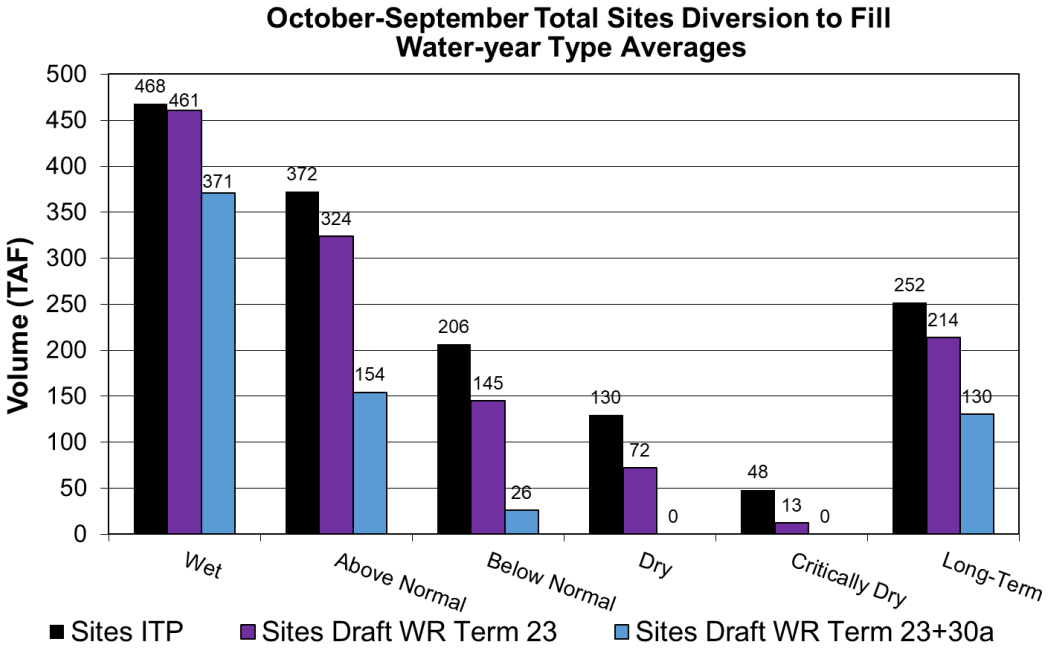


Figure 4-1. Average Sites Diversion Volume by Water Year Type and in the Long-Term in the 2024 ITP and Draft WR Terms 23 and 30a.

Figure 4-2 illustrates daily Sites Project diversions compared to flow-availability constraints in water year 2017, as simulated in CalSim 3 with both Term 23 and Term 30a diversion requirements applied. In this Wet year, a total of 538 TAF is diverted to Sites Reservoir, which is 143 TAF (21%) less than under Term 23 alone and 226 TAF (30%) less than under the 2024 ITP.

The 55% unimpaired Delta outflow requirement limits diversions entirely from November 1 through January 7 and April 10 through June 15. Between January 8 and April 9, this requirement does not control diversions; instead, diversions are limited by:

- Conveyance capacity constraints: January 8-30, February 4-5, February 12-March 9, and March 25-31
- Wilkins Slough Bypass requirements: February 1-3, February 7-13, and April 5-6
- FDD requirements: March 9-24 and April 1-4

The 55% unimpaired Delta outflow requirement becomes controlling again from January 5–7 and April 10–27, during periods when the Project would otherwise be unconstrained by Term 23 criteria. As a result, Term 30a adds 21 additional zero-diversion days for the Sites Project in 2017.

The Wilkins Slough Bypass, BBPP, and FDD requirements are generally designed to allow the Project to divert excess storm runoff from the Sacramento River. Consequently, there is some correlation in diversion opportunities among these criteria, particularly between the Wilkins Slough Bypass and FDD thresholds. In contrast, the correlation between these criteria and the 55% unimpaired Delta outflow requirement is weaker. For example, in April 10-27, Sacramento River flows were sufficiently high to support 1,500-4,000 cfs of diversions, depending on the day. Although impaired [3]river flows and outflows were elevated in this period, Delta outflow remained below 55% of the calculated unimpaired Delta outflow, preventing

[3] Unimpaired flow represents the amount of water that would naturally flow downstream without human influence. In contrast, impaired flow reflects the actual flow after accounting for human modifications such as dams, diversions, and reservoir operations. Because of these interventions, impaired flow is typically lower than unimpaired flow, especially in highly managed systems like California's rivers.

diversions. This illustrates that the absolute magnitude of river flows and outflows is not strongly correlated with the ratio of impaired to unimpaired Delta outflow. Thus, even when the Wilkins Slough Bypass and FDD criteria indicate adequate storm runoff for diversion, the 55% unimpaired Delta outflow requirement can fully preclude diversions, as it does from April 10-27.

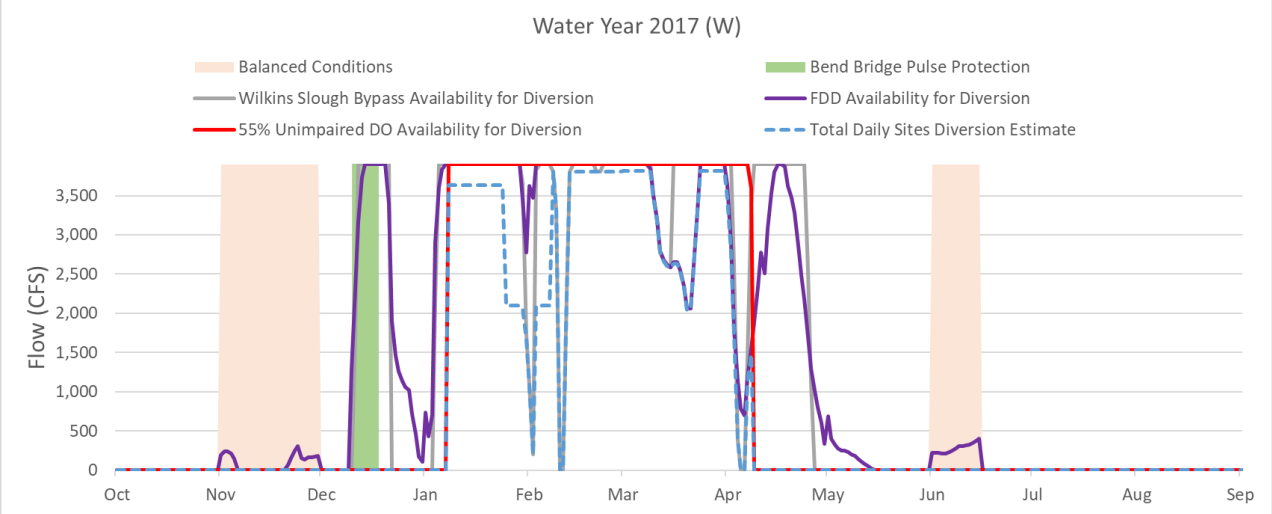


Figure 4-2. Sites Diversions and Diversion-Availability in Water Year 2017 under Draft WR Terms 23 and 30a.

Figure 4-3 presents the Sites diversion availability in the following year, which was classified as a Below Normal year. In 2018, no water was diverted to Sites Reservoir because of various requirements constraining diversion availability to zero throughout the entire diversion season. Under the 2024 ITP, 35 TAF of water was diverted to the reservoir this year.

For most of November and early December, the 55% unimpaired Delta outflow requirement is not met, preventing diversions. From December 10 through January 4, impaired Delta outflow exceeds 55% of unimpaired Delta outflow—conditions that would otherwise allow diversions—but both the Wilkins Slough Bypass and FDD requirements limit diversions to zero due to relatively low Sacramento River flows. A similar pattern occurs from February 8 through March 6.

Storm events briefly elevate Sacramento River flows during March and April, producing three distinct spikes in diversion availability under the Wilkins Slough Bypass and FDD criteria. However, during each event, the 55% unimpaired Delta outflow requirement remains unsatisfied, and diversions are not authorized.

From early May through June 15, flow becomes available for diversion under both the FDD and 55% unimpaired Delta outflow criteria for the first time that year. Even so, diversions remain at zero because the Delta is in Balanced Conditions, and the Wilkins Slough Bypass requirement is not met.

Overall, the combination of diversion requirements results in at least one set of controlling criterion preventing Sites diversions throughout the entire year, despite presence of multiple storm events.

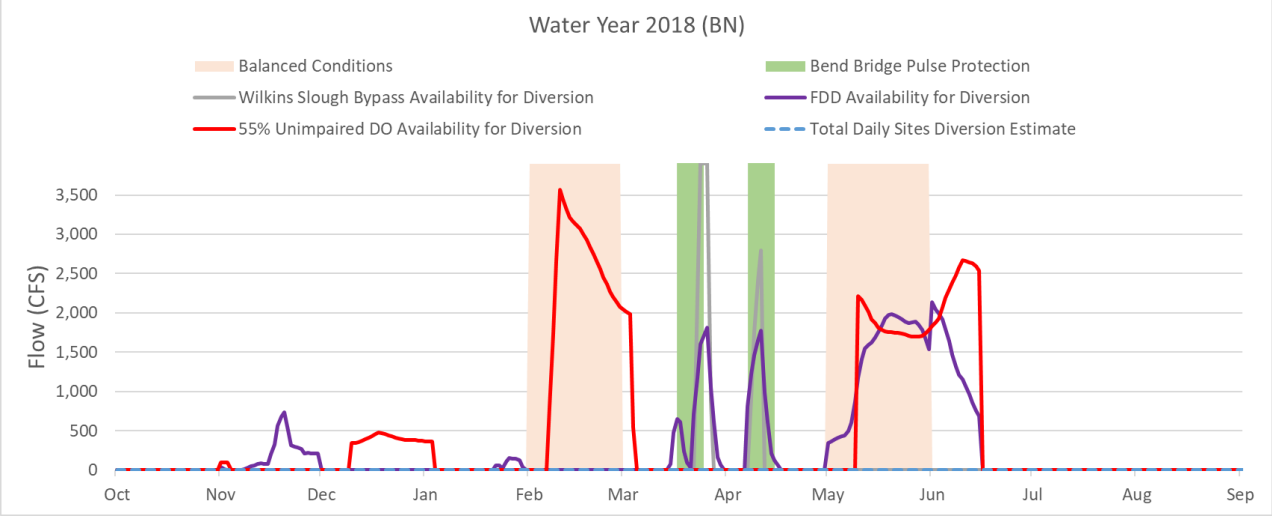


Figure 4-3. Sites Diversions and Diversion-Availability in Water Year 2018 under Draft WR Terms 23 and 30a.

4.2 Term 30c

Draft WR Term 30c specifies that Sites diversions must comply with potential future regulatory requirements that the SWRCB may adopt pertaining to percentages of unimpaired flow and Sacramento River inflow and inflow-based Delta outflow.

Two CalSim 3 model scenarios were developed to represent different potential applications of Term 30c:

- 55% Freeport
  - Sites diversions must not reduce Sacramento River flow at Freeport below 55% of unimpaired flow at Freeport
- 55% Bend Bridge
  - Sites diversions are limited to the volume of water that exceeds 55% of unimpaired flow in the Sacramento River at Bend Bridge

4.2.1 55% Unimpaired Freeport Flow

Unimpaired flow at Freeport was estimated by summing CalSim 3 monthly average unimpaired flow inputs for Bend Bridge, Lake Oroville, Yuba River, and Folsom Lake. These unimpaired flow inputs for CalSim 3 were developed using CalSimHydro, which reconstructs natural watershed runoff by removing the effects of upstream reservoirs, diversions, return flows, and land-use changes. The process relies on historical hydrology, climate data, watershed models, and mass-balance adjustments to produce monthly unimpaired flow time series for key CalSim 3 locations.

Monthly average Freeport flow was then downscaled to a daily timestep using an approach consistent with the method applied for Term 30a. Daily pattern ratios were developed using the Upper Sacramento River Daily Operations Model (USRDOM). As with Term 30a, a three-day offset of the seven-day running average of flows was applied to implement the Freeport requirement. Daily diversions to Sites Reservoir subsequently limited to the portion of flow exceeding 55% of unimpaired Sacramento River flow at Freeport.

When paired with Term 23, the 55% unimpaired flow requirement at Freeport reduces Sites diversions by 86 TAF/yr (34%) relative to the 2024 ITP diversion criteria. The effects on diversions are similar to what occurs under Term 30a, though the magnitude of reduction is smaller. Replacing the 55% unimpaired Delta outflow requirement with a 55% unimpaired Freeport flow requirement results in a smaller

reduction in diversions from -122 TAF/yr to -86 TAF/yr. Most of this difference occurs in Above Normal, Below Normal, and Dry years. The Freeport-based requirement also allows a small amount of diversion in Critical years, when brief storm events temporarily raise flows above the 55% threshold.

Table 4-2. Average Monthly and Annual Sites Diversion Volumes in the 2024 ITP, Draft WR Terms 23, 30a, and a 55% Freeport Requirement. Values in parentheses represent changes from Sites ITP.

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Annual
Sites ITP	6	47	58	63	51	17	5	4	252
Sites Draft WR Term 23	4 (-2)	33 (-15)	50 (-8)	54 (-9)	45 (-6)	20 (2)	5 (0)	4 (0)	214 (-38)
Sites Draft WR Term 23+30a	1 (-5)	8 (-39)	29 (-29)	39 (-24)	38 (-14)	13 (-4)	0 (-5)	2 (-2)	130 (-122)
Sites Draft WR Term 23+55FrP	2 (-4)	22 (-25)	33 (-24)	44 (-19)	42 (-10)	16 (-1)	3 (-2)	5 (1)	166 (-86)

4.2.2 55% Unimpaired Bend Bridge Flow

CalSim 3 includes monthly average unimpaired flow inputs for the Sacramento River at Bend Bridge developed using CalSimHydro, as discussed above. These monthly flows were downscaled to a daily timestep using the same general approach applied for Term 30a and the 55% Freeport requirement. Daily pattern ratios were developed using USRDOM. A new operational rule was added to CalSim 3 to limit Sites diversions to flows exceeding 55% unimpaired Sacramento River flow at Bend Bridge based on a three-day offset of seven-day running averages.

Relative to the 2024 ITP diversion criteria, the combination of draft WR Term 23 and the 55% Bend Bridge requirement reduces diversions by 72 TAF/yr (28%). The Bend Bridge requirement allows for greater diversions than both the 55% Delta outflow requirement and the 55% Freeport requirement. Replacing the 55% unimpaired Delta outflow requirement with a 55% unimpaired Bend Bridge flow requirement results in a smaller reduction in diversions from -122 TAF/yr to -72 TAF/yr. The Bend Bridge rule yields higher diversions in wetter years, but results in lower diversions in Dry and Critical years, as compared to 55% unimpaired Delta outflow requirement.

Shifting the unimpaired flow requirement to a more upstream location reduces, but does not eliminate, substantial diversion losses. Even the Bend Bridge rule results in larger diversion reductions than any criterion outside of Term 30.

Table 4-3. Average Monthly and Annual Sites Diversion Volumes in the 2024 ITP, and Draft WR Terms 23, 30a, 55% Freeport & Bend Bridge Requirements. Values in parentheses represent changes from Sites ITP.

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Annual
Sites ITP	6	47	58	63	51	17	5	4	252
Sites Draft WR Term 23	4 (-2)	33 (-15)	50 (-8)	54 (-9)	45 (-6)	20 (2)	5 (0)	4 (0)	214 (-38)
Sites Draft WR Term 23+30a	1 (-5)	8 (-39)	29 (-29)	39 (-24)	38 (-14)	13 (-4)	0 (-5)	2 (-2)	130 (-122)
Sites Draft WR Term 23+55FrP	2 (-4)	22 (-25)	33 (-24)	44 (-19)	42 (-10)	16 (-1)	3 (-2)	5 (1)	166 (-86)
Sites Draft WR Term 23+55BB	3 (-3)	25 (-22)	41 (-17)	50 (-13)	38 (-13)	15 (-2)	3 (-2)	5 (1)	180 (-72)

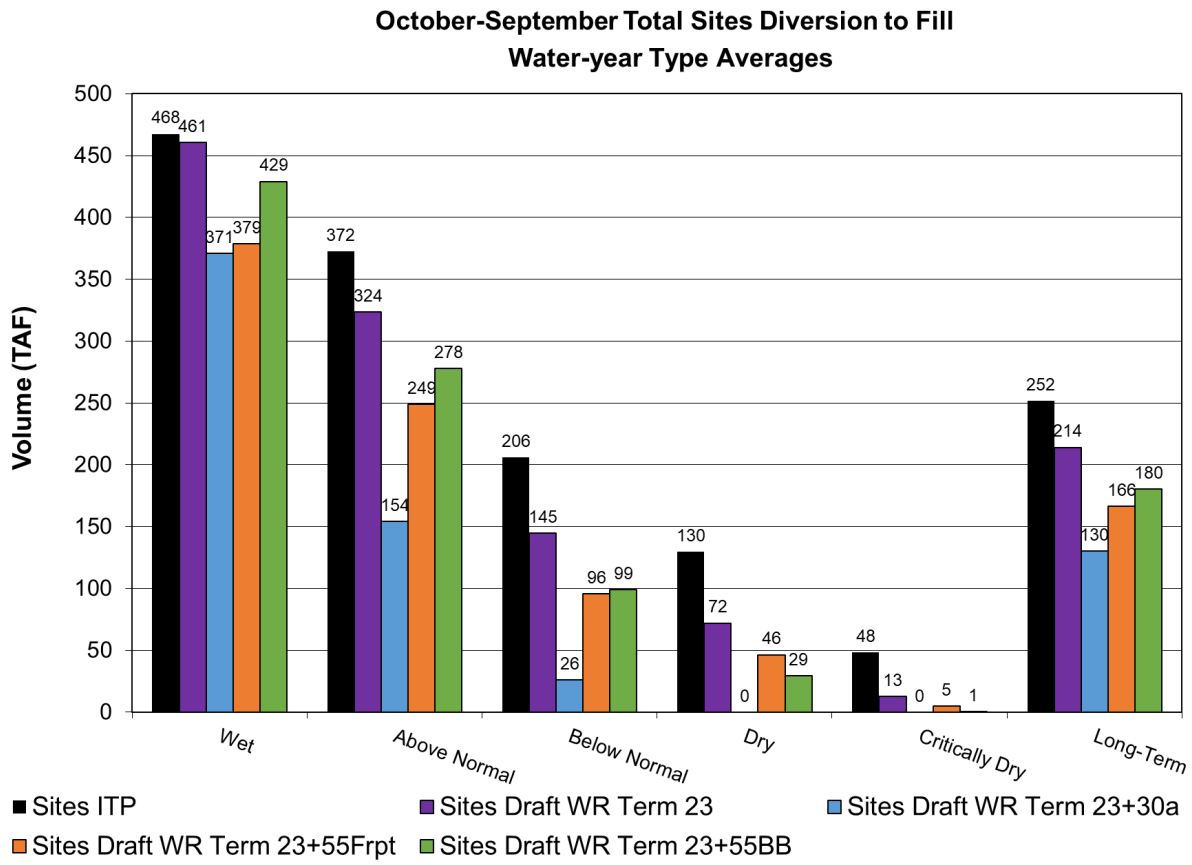


Figure 4-4. Average Sites Diversion Volume by Water Year Type and in the Long-Term in the 2024 ITP and Draft WR Terms 23, 30a, and 30c.

5. Term 31

Draft WR Term 31 specifies that Sites diversions shall not interfere with the intended benefits to fish and wildlife beneficial uses of flow and non-flow commitments provided pursuant to the Voluntary Agreement (VA) Pathway, also known as Healthy Rivers and Landscapes.

5.1 Term 31a

Draft WR Term 31a prohibits Sites diversions on any day when VA Pathway flow commitments are present in the mainstem of the Sacramento River. Because inflows from the Feather, American, and Yuba rivers all contribute to Sacramento River mainstem flow, any VA assets originating from these rivers and other tributaries upstream of Freeport create VA Pathway presence in the mainstem.

The 2024 Draft Strategic Plan for the Proposed Agreements to Support Healthy Rivers and Landscapes deploys Flow Measures (VA assets) primarily from March through May under its Default Plan (California State Water Resources Control Board, 2024). However, the plan also includes Flexibility Brackets that allow VA assets to be delivered to the Sacramento River from January through June in Above Normal years, and in any month during Below Normal and Dry years. The Default Plan authorizes Flow Measures associated with the PWA Water Purchase Program and Permanent State Water Purchases for March through May in all year types, with the greatest volumes occurring in Above Normal, Below Normal, and Dry years.

Term 31a was analyzed using CalSim 3 by restricting Sites diversions in March through May when it is forecasted or classified as an Above Normal, Below Normal, or Dry year. These periods are aligned with the Default Plan's primary deployment window for VA flow assets. Although the Flexibility Brackets allow VA Pathway presence outside of these months, their implementation is uncertain. Therefore, the modeling applies a strict interpretation of the Default Plan. For the same reason, the timing of Flow Measures associated with the PWA Water Purchase Program and Permanent State Water Purchases is also assumed to be concentrated in March through May of these year types. This approach provides a robust basis for analyzing Term 31a. However, it should be recognized that actual impacts to Sites diversions may be greater than those shown in the results due to these simplified assumptions.

5.2 Term 31b

Draft WR Term 31b prohibits Sites diversions on any day when VA Pathway flow commitments are contributing to Delta outflow and Delta outflow is below the sum of the Term 30 Delta outflow requirement for diversion plus the amount of VA Pathway flow commitments contributing to Delta outflow. This was modeled in CalSim 3 by adding Term 31a requirements to a Sites Project scenario that already includes Term 23 and Term 30a requirements. Diversions are restricted in March through May when it is forecasted or classified as an Above Normal, Below Normal, or Dry year and when Delta outflow is less than 55% unimpaired Delta outflow.

5.3 Results

Results from the following scenarios are included in this section:

- Sites ITP
  - Includes diversion criteria from the 2024 ITP
- Sites Draft WR Term 23
  - Includes diversion criteria from the Draft WR Term 23
- Sites Draft WR Term 30
  - Includes diversion criteria from Term 30a (55% unimpaired Delta Outflow)
- Sites Draft WR Term 23+31a
  - Includes diversion criteria from the Draft WR Terms 23 and 31a
- Sites Draft WR Term 23+30a+31a
  - Includes diversion criteria from the Draft WR Terms 23, 30a, and 31a (Term 31b)

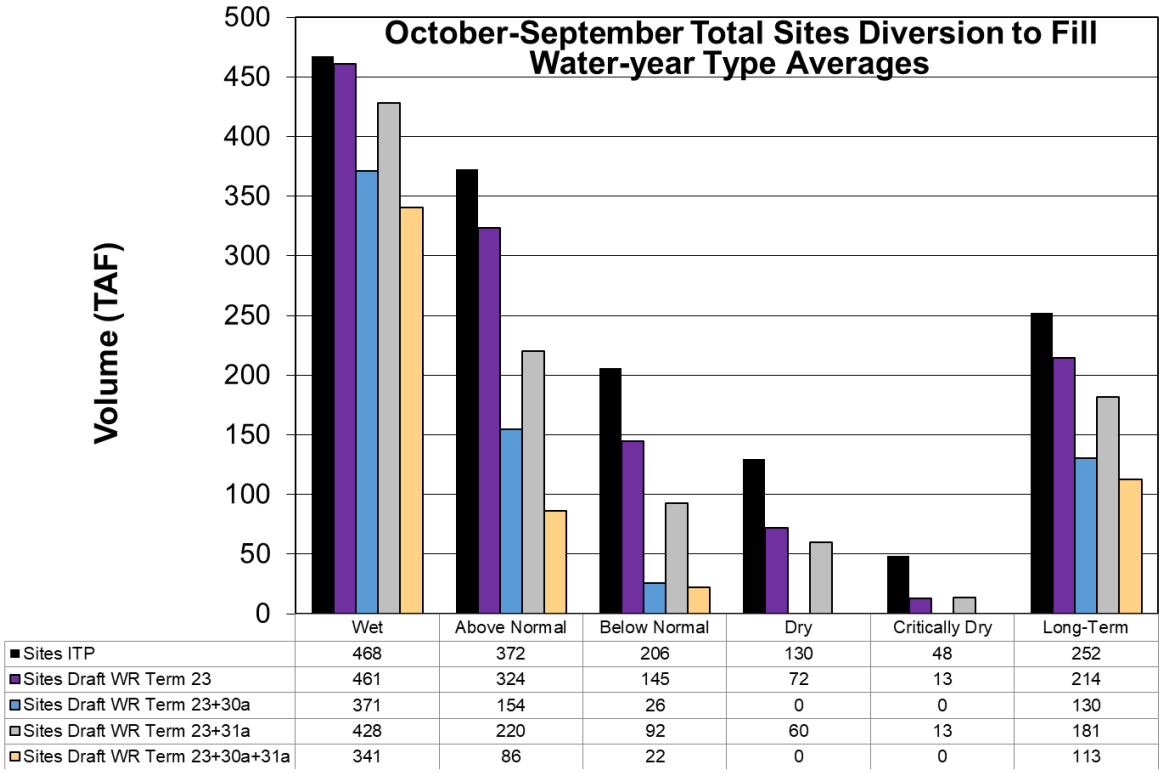
Summarizations of annual average and monthly average results are included in Figure 5-1 and Table 5-1. The combination of Draft WR Terms 23 and 31a reduces long-term average annual diversions by 71 TAF/yr (28%) to a total of 181 TAF/yr. Relative to Term 23, Term 30a causes an additional 33 TAF/yr of reduction to Sites diversions. Reductions are observed for each water year type and each month. The impact of Term 31a is greatest in March of Above Normal and Below Normal years. Term 31a also reduces Wet-year diversions in cases where the water year was forecast as Above Normal in March or April, but later reclassified as Wet in May[4].

The full combination of Draft WR Terms 23, 30a, and 31a results in a 139 TAF/yr (55%) reduction in Sites diversions relative to the 2024 ITP. The inclusion of Term 31a causes a 7% decrease in diversions compared to the combination of Term 23 and Term 30a. The VA Pathway requirement impacts Wet, Above Normal, and Dry years. There are no diversions in Dry and Critical years, primarily due to the 55% unimpaired Delta outflow requirement.

[4] Sacramento 40-30-30 Water Year Types are forecasted in February through April based on unimpaired runoff estimates. The final water year type is established on May 1.

Table 5-1. Average Monthly and Annual Sites Diversion Volumes in the 2024 ITP and Different Combinations of Draft WR Terms 23, 30a, and 31a. Values in parentheses represent changes from Sites ITP.

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Annual
Sites ITP	6	47	58	63	51	17	5	4	252
Sites Draft WR Term 23	4 (-2)	33 (-15)	50 (-8)	54 (-9)	45 (-6)	20 (2)	5 (0)	4 (0)	214 (-38)
Sites Draft WR Term 23+30a	1 (-5)	8 (-39)	29 (-29)	39 (-24)	38 (-14)	13 (-4)	0 (-5)	2 (-2)	130 (-122)
Sites Draft WR Term 23+31a	4 (-2)	32 (-15)	50 (-8)	58 (-5)	18 (-33)	13 (-5)	2 (-3)	5 (1)	181 (-71)
Sites Draft WR Term 23+30a+31a	1 (-5)	8 (-39)	29 (-29)	39 (-24)	21 (-30)	10 (-7)	2 (-3)	2 (-2)	113 (-139)



	Wet	Above Normal	Below Normal	Dry	Critically Dry	Long-Term
Sites ITP	468	372	206	130	48	252
Sites Draft WR Term 23	461	324	145	72	13	214
Sites Draft WR Term 23+30a	371	154	26	0	0	130
Sites Draft WR Term 23+31a	428	220	92	60	13	181
Sites Draft WR Term 23+30a+31a	341	86	22	0	0	113

Figure 5-1. Average Sites Diversion Volume by Water Year Type and in the Long-Term in the 2024 ITP and Different Combinations of Draft WR Terms 23, 30a, and 31a.

6. Conclusion

CalSim 3 modeling indicates that Draft WR Terms 23, 30, and 31 substantially reduce Sites Project diversions relative to the 2024 ITP requirements. Under Term 23, the Bend Bridge Pulse Protection requirement and the elevated Wilkins Slough Bypass flows produce the largest diversion reductions. However, the effects of Term 30 and Term 31 exceed those of Term 23.

Among all requirements, the 55% unimpaired Delta outflow standard under Term 30a produces the greatest reduction in Sites diversions. As demonstrated under Term 30c, shifting the unimpaired flow requirement upstream on the Sacramento River would lessen this impact but still result in significant

diversion reductions. Modeling results also indicate that Term 31 would reduce Sites diversions to a degree between the effects of Term 23 and Term 30.

Because implementation of these requirements remains uncertain, the model results should be interpreted as reasonable approximations, particularly for Terms 30 and 31. Even so, the analyses provide a meaningful indication of the potential magnitude of each permit term's effect on Sites diversions.

Table 6-1. Average Annual Sites Diversions and Change From 2024 Operations ITP Criteria for Different Combinations of Draft Water Right Terms (TAF/yr).

	Annual Average Diversion	Change from 2024 Operations ITP
2024 Operations ITP	252	-
Term 23a	249	-3 (-1%)
Term 23b	229	-23 (-9%)
Term 23c	235	-16 (-7%)
Term 23	214	-38 (-15%)
Terms 23 + 30a	130	-122 (-48%)
Terms 23 + 30c (55% Freeport)	166	-86 (-34%)
Terms 23 + 30c (55% Bend Bridge)	180	-72 (-28%)
Terms 23 + 31a	181	-71 (-28%)
Terms 23 + 30a + 31a	113	-139 (-55%)

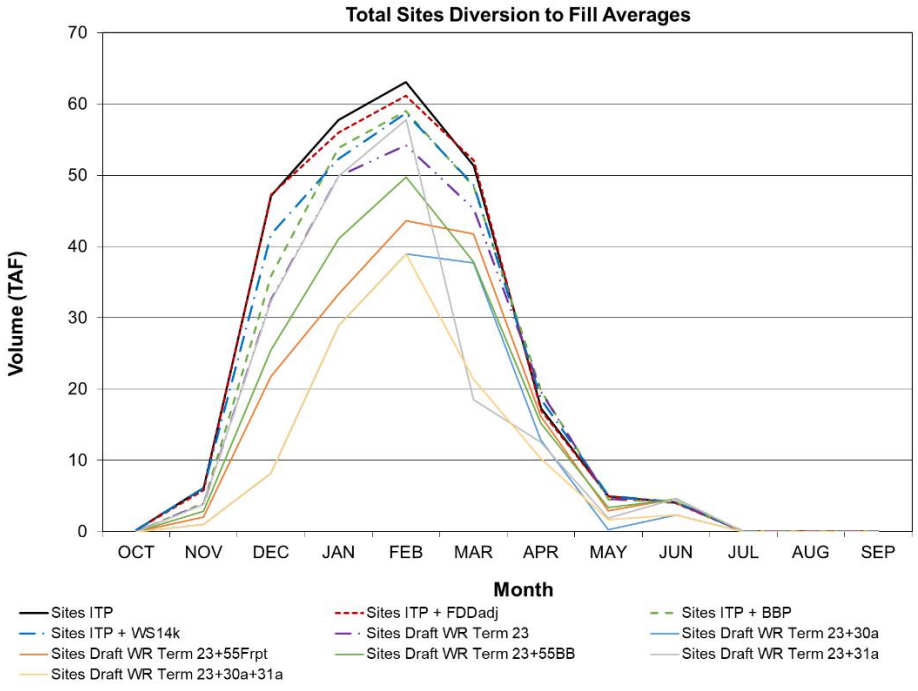


Figure 6-1. Monthly Average Sites Diversions for the 2024 ITP and Different Combinations of Drat Water Right Terms.

7. References

California Department of Fish and Wildlife. (2024). *California Endangered Species Act Incidental Take Permit No. 2081-2023-051-00: Operations of the Sites Reservoir Project.* https://sitesproject.org/wp-content/uploads/2025/02/Sites_Final_ITP2081-2023-051-00_signed.pdf

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California State Water Resources Control Board. (2024, October). *Draft strategic plan for the proposed agreements to support healthy rivers and landscapes.* https://waterboards.ca.gov/bay_delta/docs/2024/strategic-plan.pdf

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Walker, W. (2026). *Water supply effects of draft water right permit terms 23, 30, and 31.*

ATTACHMENT B

MBK ENGINEERS
Water Resources ◆ Flood Control ◆ Water Rights

DON TRIEU, P.E.
DARREN CORDOVA, P.E
NATHAN HERSHEY, P.E., P.L.S.
LEE G. BERGFELD, P.E.
BEN TUSTISON, P.E.
THOMAS ENGLER, P.E., CFM
MICHAEL MONCRIEF, P.E.
NICOLE ORTEGA-JEWELL, PMP
KYLE KNUTSON, P.E.
ANNE WILLIAMS, P.E.
PATRICK HO, P.E.
MICHAEL KYNETT, P.E.

FOUNDERS:
ANGUS NORMAN MURRAY
1913-1985
JOSEPH I. BURNS
1926-2021
DONALD E. KIENLEN
1930-2023

TECHNICAL M E M O R A N D U M

DATE: May 22, 2026

PREPARED BY: Wesley Walker, P.E.

REVIEWED BY: Lee Bergfeld, P.E.

SUBJECT: Water Supply Effects of Draft Water Right Permit Terms 23, 30, and 31

On March 20, 2026, the State Water Resources Control Board's (SWRCB) Administrative Hearing Office (AHO) transmitted the Draft Water Right Permit (Permit) and accompanying Draft Water Right Decision (Decision) to the Sites Project Authority (Authority) for the Sites Reservoir Project (Sites). Included within the Permit were terms that propose to provide greater protection of instream beneficial uses by applying additional restrictions on Sites diversions. These additional restrictions are primarily included within Permit terms 23, 30, and 31.

To analyze the potential effects of Permit terms 23, 30, and 31, MBK incorporated the additional diversion criteria into the "Sites Historical Water Availability Analysis (WAA) Tool[1]". The Sites Historical WAA Tool[2] was originally prepared by MBK and the Authority to estimate water availability from the Sacramento River on a daily basis over a recent historical period. The tool implements all of the diversion criteria proposed by the Authority, including the criteria listed in the Authority's Operations Incidental Take Permit (ITP) issued by the California Department of Fish and Wildlife. The tool also provides an estimate of potential diversions.

This memo provides a summary of the analytical approach taken to implement Permit terms 23, 30, and 31, along with the estimated effects to potential diversions resulting from the additional diversion criteria. The effects of these permit terms have also been evaluated using the CalSim 3 models developed by the Authority. The results of those analyses are summarized in an accompanying technical memorandum[3]. Results from the CalSim 3 modeling indicate similar effects to Sites diversions as demonstrated in this memorandum which uses the Sites Historical

[1] 2026-04-03 Sites Historical WAA Tool.xlsm
[2] The period of analysis was extended in the tool to cover the period of January 1, 2000, through March 31, 2026.
[3] "CalSim 3 Modeling Analysis of Sites Project Diversions Under Draft Water Right Terms 23, 30, and 31" prepared by Chad Whittington, P.E., Jacobs Engineering, dated May 22, 2026.

WAA Tool. Exact details may differ between the two analyses (CalSim 3 vs. Sites Historical WAA Tool, respectively) due to differences in model timestep (monthly vs. daily), simulation period (100 years vs. ~26 years), operational conditions (full reservoir operations vs. maximum possible diversions) and underlying hydrology (2040 Median vs. historical). However, the relative magnitudes and operational responses to the draft permits terms demonstrated by the two analyses indicate a high level of agreement and consistency regarding the adverse effects to Sites diversions.

Permit Term 23

Permit Term 23 prescribes three additional diversion requirements relative to the criteria included in the Operations ITP that is referenced in Term 22. This section provides a brief summary of each Permit Term 23 sub-term, the approach to implement the requirements in the Sites Historical WAA Tool, and a brief summary of the effects to potential diversions from each requirement, respectively. A more detailed summary of the collective effects of Permit Term 23 can be found at the end of this section.

23a: Red Bluff Flow-Dependent Diversion Criteria

The Operations ITP implemented Flow-Dependent Diversion (FDD) requirements at both the Red Bluff and Hamilton City points of diversion. At Red Bluff, the Operations ITP provided for two FDD requirements, one implemented from September 1 through December 31 and March 1 through June 14, and the other from January 1 through February 28/29. The January 1 through February 28/29 requirements were less restrictive. Permit Term 23a requires that the more restrictive FDD criteria at Red Bluff is also operated to during the January 1 through February 28/29 period.

Implementation of this requirement in the Sites Historical WAA Tool required changing the FDD lookup table for the January 1 through February 28/29 period. On its own, implementation of the more restrictive FDD requirement during January and February results in approximately a 3% reduction[4] to annual average diversions under the Operations ITP in the Sites Historical WAA Tool over the full period of analysis.

23b: Bend Bridge Pulse Flow Protection

Permit Term 23b requires implementation of the Bend Bridge Pulse Flow Protection (BBP). The BBP had previously been proposed by the Authority to protect out-migrating salmonids during qualified flow events. During development of the Operations ITP, CDFW replaced the BBP with the FDD requirements.

Implementation of the BBP into the Sites Historical WAA Tool only required turning the BBP "switch" back on, as the original BBP logic had been kept in the Sites Historical WAA Tool and Permit Term 23b does not propose any changes to the original BBPP logic. On its own, implementation of the BBP results in approximately a 5% reduction to annual average diversions

[4] When combined with Permit Terms 23b and 23c, the effects of Permit Term 23a are generally neutralized as Permit Term 23b, in particular, often applies during similar conditions but is typically more restrictive.

in the Sites Historical WAA Tool over the full period of analysis. The largest effects occur in December through February.

23c: Wilkins Slough Minimum Bypass Flow Requirement

For Sites diversions to occur, the Operations ITP requires a minimum bypass flow requirement for flow in the Sacramento River at Wilkins Slough of 10,930 cfs during the entire proposed diversion season. Permit Term 23c revises this requirement to be 14,125 cfs from December 1 through April 30.

Implementation of this requirement into the Sites Historical WAA Tool required changes to the bypass flow requirement lookup table for the months of December through April. On its own, implementation of the revised minimum bypass flow requirement at Wilkins Slough results in a 7% reduction to annual average diversions in the Sites Historical WAA Tool over the full period of analysis. Effects are comparable across each month from December through April.

Permit Term 23 Combined Effects

Collectively, the three additional diversion requirements from Permit Term 23 produce approximately a 12% reduction to annual average potential diversions in the Sites Historical WAA Tool over the full period of analysis. This is slightly less than the total of the respective effects from each requirement on its own, as there is some overlap of timing when one or more of these requirements may be limiting Sites diversions. Table 1 shows the monthly average potential diversions by water year (WY) type from the Sites Historical WAA Tool with only the Operations ITP diversion criteria. Table 2 shows the change to monthly average potential diversions by water year type when each of the Permit Term 23 requirements are implemented.

Table 1. Monthly Average Diversion by Sacramento Valley Water Year Type (Operations ITP[5]). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	64	147	102	207	166	37	19	0	0	0	743
Above Normal	0	2	24	110	143	100	40	65	3	0	0	0	481
Below Normal	0	0	21	82	49	57	11	3	7	0	0	0	226
Dry	0	0	20	22	13	12	0	0	0	0	0	0	68
Critical	0	0	21	11	17	0	0	0	0	0	0	0	49
All Years	0	0	30	73	62	72	42	20	6	0	0	0	301
Max Year (2006)	0	0	91	232	142	258	249	15	0	0	0	0	986

Permit Term 23 reduces potential diversions in all months except June, and in all year types. Relative changes are largest in Dry and Critical years and in December through February. As noted above, annual average potential diversions are reduced by approximately 12%. The volume of diversions does not change in the maximum year of potential diversions (WY 2006)

[5] This scenario includes the annual diversion limit of 986,000 acre-feet. Without this limit, the Sites Historical WAA Tool estimates that under the Operations ITP condition, annual average total diversions would be 310,000 acre-feet, with greater diversions in April through June of Wet years. Additionally, total diversions in water year 2006 (1,166,000 acre-feet) and water year 2017 (1,036,000 acre-feet) could have exceeded the 986,000 acre-feet limit.

since diversions reached the maximum annual limit specified in the Operations ITP and in Draft Permit Term 5. However, the timing of diversions changes, with fewer diversions in December through February and more in May since the annual limit was reached earlier in the year with only the Operations ITP diversion criteria.

Table 2. Change in Monthly Average Diversion by Sacramento Valley Water Year Type (Permit Term 23 – Operations ITP). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	-16	-18	-19	-7	-7	14	0	0	0	0	-51
Above Normal	0	-1	-7	-13	-9	-10	-16	-2	0	0	0	0	-56
Below Normal	0	0	-3	-10	-10	-8	-8	0	0	0	0	0	-37
Dry	0	0	-5	-4	-7	-4	0	0	0	0	0	0	-20
Critical	0	0	-3	-10	-12	0	0	0	0	0	0	0	-25
All Years	0	0	-6	-11	-11	-6	-6	2	0	0	0	0	-37
Max Year (2006)	0	0	-18	-7	-22	0	0	47	0	0	0	0	0

Figure 1 provides an example of the potential effects of Permit Terms 23 to diversions in WY 2005 (a Below Normal year). Under the Operations ITP criteria, potential annual Sites diversions are estimated to be approximately 280,000 acre-feet in WY 2005. With the addition of Permit Term 23, potential annual Sites diversions are reduced by 86,000 acre-feet (~31%) to approximately 194,000 acre-feet. Permit Term 23a (FDD) has a noticeable, but relatively small effect on potential diversions in the first half of January and in early February. In WY 2005, Permit Term 23a reduces potential diversions by approximately 8,000 acre-feet. Permit Term 23b (BBP) requires six different pulse events to be protected during WY 2005. The first two pulses largely occur at times when the Delta is still in a Balanced condition, however the remaining four pulse events occur at times when diversions were typically occurring under the Operations ITP condition. In WY 2005, Permit Term 23b reduces potential diversions by approximately 40,000 acre-feet. Permit Term 23c (Wilkins Slough) reduces potential diversions multiple times throughout the December through April period, with the most noticeable being in early February, early March, and early April. In WY 2005, Permit Term 23c reduces potential diversions by approximately 38,000 acre-feet.

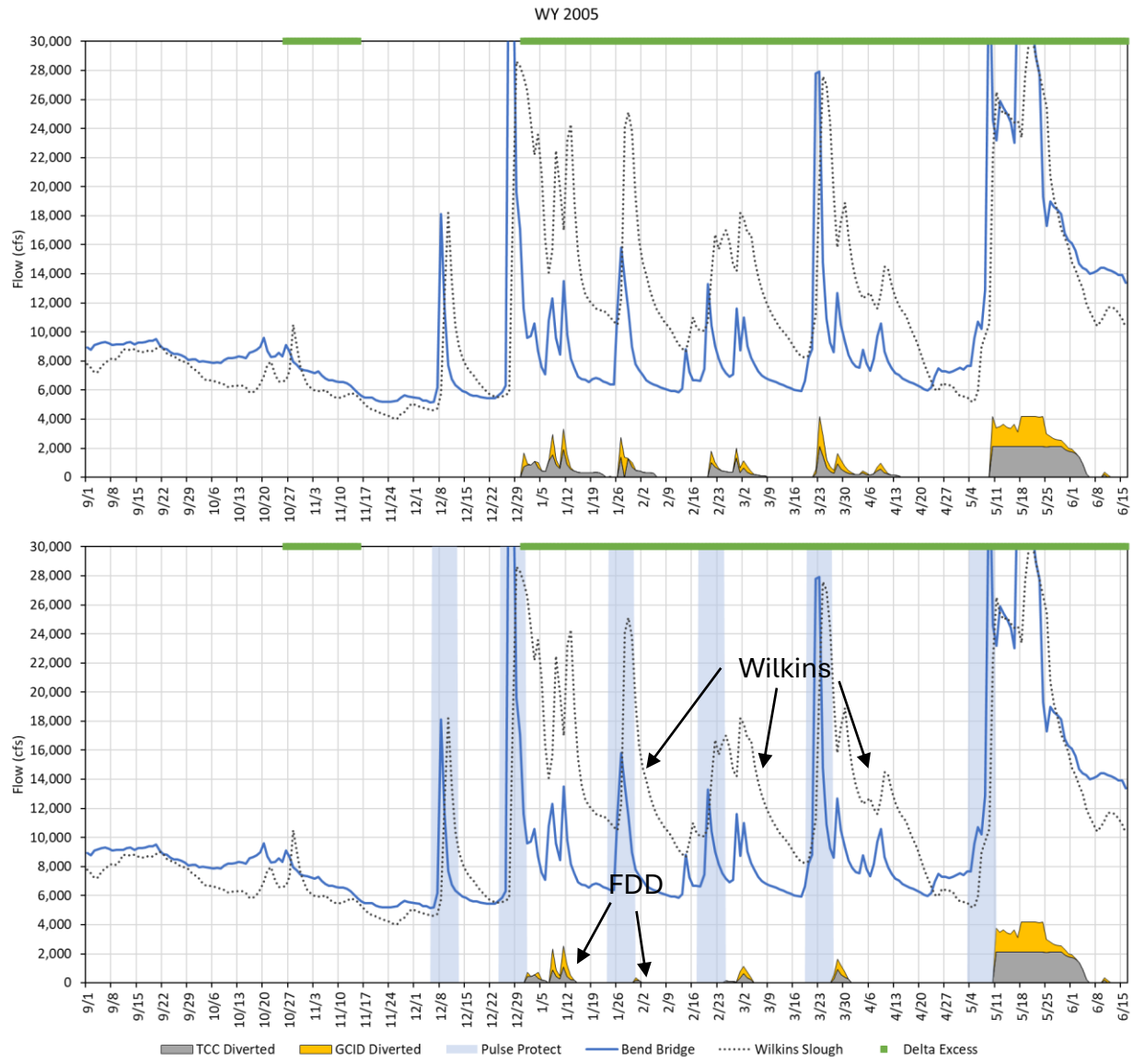

Figure 1. WY Flows, Delta Conditions, and Potential Diversions in WY 2005 under the Operations ITP Condition (top) and with Permit Term 23 (bottom).

Permit Term 30

Permit Term 30 includes multiple potential diversion criteria all related to the updated Bay-Delta Plan. Permit Term 30a prescribes an interim requirement that limits Sites diversions to the flows available above a 55% unimpaired (UIF) Delta outflow requirement. This requirement would be in place if/until the updated Bay-Delta Plan is adopted by the SWRCB. Following adoption of the updated Bay-Delta Plan, Permit Term 30c would require Sites diversions to comply with the Sacramento River inflow and inflow-based Delta outflow requirements included in the Bay-Delta Plan. Permit Term 30d prescribes a method to determine the effects to diversions when Permit Term 23 creates more restrictive diversion criteria than Permit Term 30a. The method allows for these effects to potentially be offset by future diversions during periods when Permit Term 30a would otherwise limit diversions.

Permit Term 30a: 55% Unimpaired Delta Outflow

Permit Term 30a limits Sites diversions to the volume of Delta outflow available above a calculated 55% unimpaired Delta outflow requirement. The method to estimate daily unimpaired Delta outflow is included with the Draft Permit as Attachment 4, the "Calculation of Daily Unimpaired Delta Outflow, Daily Delta Outflow, and Percent of Unimpaired Delta Outflow". The diversion requirement is evaluated by comparing the 7-day average observed Delta outflow to the 7-day average 55% unimpaired Delta outflow. A three-day lag is also applied to account for data availability constraints.

Implementation of Permit Term 30a was completed by first developing the unimpaired Delta outflow equation specified in Attachment 4. Data availability for many of the unimpaired flow data locations limited the calculation to a start date of October 1, 2012. The resulting 7-day average unimpaired Delta outflow was input to the Sites Historical WAA Tool and compared to observed 7-day average Delta outflow. The three day lag was also applied as instructed. By performing this analysis over the historical period, the assumption is made that hydrologic and operational conditions exist in a similar manner to what has been observed over this recent historical period. Specifically, this assumes that a watershed-wide regulatory action such as what is proposed in the updated Bay-Delta Plan has not been implemented.

On its own (i.e. relative to the Operations ITP), Permit Term 30a results in approximately a 37% reduction to annual average potential diversion in the Sites Historical WAA Tool over the shortened period[6] of analysis.

Over the shortened period of analysis, annual average potential diversions under the Operations ITP requirements are 297,000 acre-feet. Under Permit Term 23, annual average potential diversions over the shortened period of analysis are reduced by 32,000 acre-feet to 265,000 acre-feet. When Permit Term 30a is layered on top of Permit Term 23, annual average diversions are reduced by an additional 89,000 acre-feet to 176,000 acre-feet, for a total reduction of 121,000 acre-feet which represents a 41% reduction[7] from the Operations ITP condition. Table 3 shows the monthly average potential diversions by WY type from the Sites Historical WAA Tool with only the Operations ITP diversion criteria over the shortened period of analysis. Table 4 shows the change to monthly average potential diversions by water year type when Permit Term 23 and Permit Term 30a requirements are implemented over the same period of analysis.

[6] The period of analysis for each of the Permit Term 30 requirements is shortened to October 1, 2012 through March 31, 2026, due to the availability of portions of the unimpaired flow dataset.

[7] On its own, Permit Term 30a results in a 37% reduction to annual average diversions compared to the Operations ITP criteria. The relatively small difference between effects with and without Permit Term 23 indicates that there is a fairly limited frequency that Permit Term 23 is more restrictive than Permit Term 30a.

Table 3. Monthly Average Diversion by Sacramento Valley Water Year (Operations ITP analysis Oct. 2012 through Mar. 2026). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	34	141	116	206	153	47	11	0	0	0	707
Above Normal	0	4	46	105	218	144	52	0	0	0	0	0	570
Below Normal	0	0	26	103	27	61	6	0	0	0	0	0	221
Dry	0	0	49	2	0	0	0	0	0	0	0	0	50
Critical	0	0	27	0	8	0	0	0	0	0	0	0	35
All Years	0	1	34	68	64	78	44	11	3	0	0	0	297
Max Year (2017)	0	0	87	215	233	230	222	0	0	0	0	0	986[8]

Potential diversions are reduced in all months and in all water year types. Diversions in Dry and Critical years are reduced by over 80%, while diversions in Below Normal years are reduced by nearly 65%. On an average monthly basis, the largest relative reductions occur in December and January. Diversions in the wettest year (WY 2017) over the shortened period of analysis are reduced by 166,000 acre-feet (~17%), with diversions no longer reaching the annual diversion limit from Permit Term 5. Some additional diversions do occur in April and May of 2017 as the annual limit was reached earlier in the year under the Operations ITP condition.

Table 4. Change in Monthly Average Diversion by Sacramento Valley Water Year Type (Permit Terms 23 & 30a – Operations ITP). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	-30	-92	-34	-28	-8	-14	-5	0	0	0	-211
Above Normal	0	-4	-22	-71	-48	-29	-40	0	0	0	0	0	-216
Below Normal	0	0	-26	-60	-8	-43	-6	0	0	0	0	0	-141
Dry	0	0	-45	-2	0	0	0	0	0	0	0	0	-47
Critical	0	0	-20	0	-8	0	0	0	0	0	0	0	-28
All Years	0	-1	-27	-43	-18	-19	-9	-3	-1	0	0	0	-121
Max Year (2017)	0	0	-75	-92	-42	0	7	36	0	0	0	0	-166

Figure 2 provides an example of the potential effects of Permit Terms 23 and 30a to diversions in WY 2025 (an Above Normal year). Under the Operations ITP condition, annual Sites diversions are estimated to be approximately 580,000 acre-feet in WY 2025. With the addition of Permit Term 23, annual Sites diversions are reduced by 74,000 acre-feet (~13%) to approximately 506,000 acre-feet. With the addition of Permit Term 30a on top of Permit Term 23, annual Sites diversions are reduced by an additional 207,000 acre-feet (a combined total of ~49%) to approximately 299,000 acre-feet. Permit Term 30a (55% Outflow) reduces potential diversions during at least five distinct periods, including two periods in late-December and early-February when Sites diversions would have been at capacity under the Operations ITP condition. A

[8] Includes the annual diversion limit of 986,000 acre-feet. Without this limit, the Sites Historical WAA Tool estimates that under the Operations ITP condition, diversions in water year 2017 (1,036,000 acre-feet) could have exceeded the 986,000 acre-feet limit.

portion of the period in early February occurs when observed Delta outflow was above 100,000 cfs.

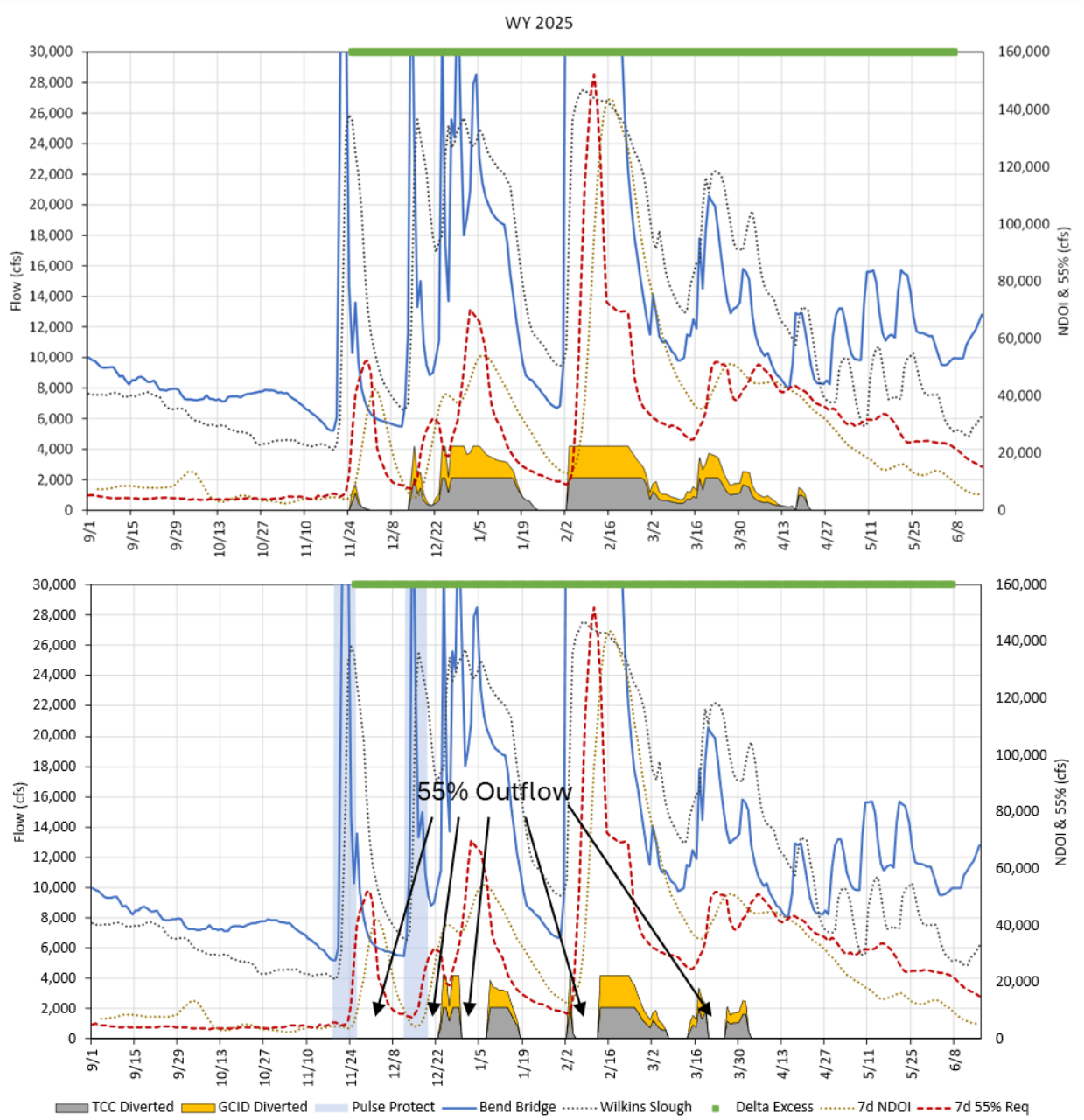

Figure 2. WY Flows, Delta Conditions, 7-day Average NDOI/55% Requirement, and Potential Diversions in WY 2025 under the Operations ITP Condition (top) and with Permit Terms 23 & 30a (bottom).

Permit Term 30a results in a substantial reduction to potential Sites diversions. Even with some refinement to the method of estimating unimpaired Delta outflow, effects are likely to remain large. There also remains a high degree of uncertainty around how the updated Bay-Delta Plan might affect other system conditions/operations under which this requirement or a similar regulatory action are in place and how those changes might further affect Sites diversions.

Nonetheless, the analysis provides a reasonable outlook on the potential magnitude of effects to Sites diversions resulting from Permit Term 30a.

Permit Term 30d

Permit Term 30d is analyzed prior to Term 30c, as Term 30d provides a mechanism to offset potential diversion reductions relative to Permit Terms 23 and 30a.

Permit Term 30d is understood to provide opportunities to "bank" diversion credits in each water year during times that the diversion criteria under Permit Term 23 is more restrictive than Permit Term 30a. These credits can then be potentially utilized to allow diversions during future periods within the same water year that Permit Term 30a is the most restrictive diversion criteria. To analyze this condition in the Sites Historical WAA Tool, a scenario with both Terms 23 and 30a implemented (scenario "A") was compared to a scenario with only Term 30a implemented (scenario "B"). Potential diversions were compared for each water year and for days that scenario B diversions were greater than scenario A, the difference resulted in a "credit" to the Permit Term 30d account. Scenario A was then compared to a scenario with only Permit Term 23 (scenario "C"). For days that scenario C diversions were greater than scenario A (i.e. a day when Term 30a was more restrictive than Term 23), daily diversions were then allowed to increase up to the minimum of the difference in diversions between scenarios C and A or the volume available in the Term 30d account.

Over the shortened period of analysis, an annual average of 12,000 acre-feet of credits can be generated, with credits developed in 10 of the 14 years over the shortened period of analysis. Over this same period, an annual average of 11,000 acre-feet of credits can be utilized, with unused credits remaining in five of the 10 years with developed credits. While Permit Term 30d may allow for a potential offset of diversion reductions of approximately 11,000 acre-feet, the utilizable credit would only reduce the reduction to Sites diversions due to Permit Terms 23 and 30a from approximately 41% to approximately 37%. This remaining magnitude is not surprising given what was previously noted in footnote 7.

Given the limited detail surrounding this credit system (including details that may limit when credits can be utilized), as well as the uncertainty surrounding updates to the Bay-Delta Plan, it is unlikely that the full volume of "utilizable" credits would actually be realized. Additionally, although Permit Term 30d.iii suggests similar provisions or actions may be allowed following adoption of the updated Bay-Delta Plan, neither the Permit, the Decision, nor the Draft Bay-Delta Plan Update provide any detail on what those provisions or actions might be. Accordingly, this analysis only provides an outlook of what the Permit Term 30d credit system might look like under these specific hydrologic and operational conditions.

Permit Term 30c

Permit Term 30c states that once the SWRCB takes regulatory action to implement the "Sacramento inflow and inflow-based Delta outflow requirements based on a percentage of unimpaired flow applicable to this Permit" such requirements will apply in lieu of Permit terms 30a and 30b. At this time it is not clear exactly how the requirements in the updated Bay-Delta Plan will be implemented throughout the Sacramento River watershed, let alone as it relates to

Sites. However, several different approaches can be taken to inform the potential range of effects to Sites diversions.

Freeport 55% Unimpaired Flow Requirement

One approach would be to assume that Sites diversions would be limited to the flows in excess of a 55% unimpaired flow requirement for the Sacramento River at Freeport. Freeport was chosen as it is generally recognized as the "outlet" of the Sacramento River watershed and thus provides a measuring point for a watershed-wide 55% UIF requirement.

Implementation of this approach was completed by calculating an unimpaired flow for the Sacramento River at Freeport by following the same methodology detailed in Attachment 4, but only including Unimpaired Delta Inflows from the Sacramento River watershed (Sacramento River at Bend Bridge, Feather River at Oroville, Yuba River at Smartsville, American River at Folsom, Stony Creek, Bear River, Sacramento River Westside Minor Streams, and Sacramento River Eastside Minor Streams). To account for spills into the Yolo Bypass through the Fremont and Sacramento weirs, the daily 55% unimpaired flow requirement was limited to a maximum of 60,000 cfs[9]. Following the calculation, the same 7-day average and 3-day offsets used for the Delta outflow equation were applied to the unimpaired Freeport requirement. In addition to Permit Term 23 requirements, daily Sites diversions were then limited to the flow in excess of the 55% unimpaired flow requirement at Freeport.

Over the shortened period of analysis, annual average potential diversions with Permit Term 23 and the 55% unimpaired flow requirement at Freeport are reduced by 79,000 acre-feet (~26%) to 219,000 acre-feet. Table 5 shows the change to monthly average potential diversions by water year type when Permit Term 23 and the 55% unimpaired flow requirement at Freeport are implemented over the shortened period of analysis (relative to Table 3). Effects on potential diversions are similar to what was seen under Permit Term 30a, although total reductions are generally of a smaller magnitude. The largest relative effects compared to Term 23 include additional reductions to diversions in December and January.

Table 5. Change in Monthly Average Diversion by Sacramento Valley Water Year Type (Term 23 & 55% UIF at Freeport – Operations ITP). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	-25	-44	-18	-13	-10	7	11	0	0	0	-103
Above Normal	0	-4	-20	-54	-45	-15	-22	0	0	0	0	0	-160
Below Normal	0	0	-24	-38	-6	-32	-6	0	0	0	0	0	-104
Dry	0	0	-24	-2	0	0	0	0	0	0	0	0	-26
Critical	0	0	-19	0	-8	0	0	0	0	0	0	0	-27
All Years	0	-1	-22	-26	-14	-12	-7	2	3	0	0	0	-79
Max Year (2017)	0	0	-60	-34	0	0	1	43	0	0	0	0	-50

[9] This is a simplifying assumption relative to the Sacramento River spilling over the Freemont Weir when flow at that location is approximately 56,000 cfs.

If the proposed Water Supply Adjustments[10] (WSA) were applied to the unimpaired flow requirement at Freeport, the reduction to potential diversions would be approximately 22%, with most of the reduced effects coming from smaller reductions to December and January diversions.

Bend Bridge 55% Unimpaired Flow Requirement

Another possible approach would be to assume that Sites diversions would be limited to flows in excess of a 55% unimpaired flow requirement at Bend Bridge and Hamilton City, as these are the closest possible UIF gage locations relative to Sites' Sacramento River points of diversions.

Implementation of this approach was completed by taking the daily Sacramento River at Bend Bridge unimpaired flow data[11], calculating the 7-day average, and limiting daily diversions at Red Bluff to the 7-day observed flow that is in excess of the 7-day average 55% unimpaired flow. Unimpaired flow data is not currently available for Hamilton City. An estimate was developed by taking the Sacramento River at Bend Bridge and adding the data calculated from the Attachment 4 methodology for the Sacramento River Westside Minor Streams and 50%[12] of the Sacramento River Eastside Minor Streams. The same approach as Bend Bridge was then taken by calculating the 7-day average, and limiting daily diversions at Hamilton City to the 7-day observed flow that is in excess of the 7-day average 55% unimpaired flow. Although the 7-day average was maintained for both locations, the 3-day lag was not as it would result in a significant difference between observed and calculated flow conditions.

Over the shortened period of analysis, annual average potential diversions with Permit Term 23 and the 55% unimpaired flow requirement at Bend Bridge and Hamilton City are reduced by 89,000 acre-feet (~30%) to 208,000 acre-feet. Table 6 shows the change to monthly average potential diversions by water year type when Permit Term 23 and the 55% unimpaired flow requirement at Bend Bridge and Hamilton City are implemented over the shortened period of analysis (relative to Table 3). Effects on potential diversions are similar to what was seen under the unimpaired flow requirement at Freeport, although total reductions are generally of a slightly larger magnitude and most of the changes occur from greater reductions in March and April.

[10] Water Supply Adjustments were calculated using historical data per the methodology proposed by the SWRCB as part of the updated Bay-Delta Plan.

[11] California Data Exchange Center station identification SBB, sensor 8

[12] 50% was used as a rough approximation for the relative percentage of this flow volume that enters the Sacramento River upstream of Hamilton City. Further analysis would be necessary to better refine this ratio, although any updated results are not likely to be particularly sensitive to any adjustment.

Table 6. Change in Monthly Average Diversions by Sacramento Valley Water Year Type (Term 23 & 55% UIF at Bend Bridge/Hamilton City – Operations ITP). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	-20	-47	-34	-43	-18	11	11	0	0	0	-152
Above Normal	0	-1	-33	-49	-23	-35	-28	0	0	0	0	0	-169
Below Normal	0	0	-16	-42	-7	-37	-6	0	0	0	0	0	-105
Dry	0	0	-24	-2	0	0	0	0	0	0	0	0	-25
Critical	0	0	-13	0	-8	0	0	0	0	0	0	0	-21
All Years	0	0	-20	-26	-14	-22	-10	3	3	0	0	0	-89
Max Year (2017)	0	0	-47	-16	-23	-41	-11	43	0	0	0	0	-95

If the proposed WSAs were applied to the unimpaired flow requirement at Bend Bridge and Hamilton City, the reduction to potential diversions would be approximately 22%, with most of the reduced effects coming from smaller reduction to December, January, and March diversions.

Permit Term 31

Permit Term 31 includes conditions and requirements under a scenario in which the SWRCB updates the Bay-Delta Plan to include a VA Pathway. Relative to Sites diversions, Permit terms 31a and 31b would also have a significant adverse effect on Sites diversions.

Permit Term 31a

Permit Term 31a prevents diversions "on any day when flow commitments provided pursuant to the VA pathway are present in the mainstem of the Sacramento River". As written, this term is potentially problematic for two reasons: 1) the mainstem of the Sacramento River is interpreted to mean the mainstem of the Sacramento River upstream of Freeport. In addition to this preventing diversions from occurring any time Sacramento River VA assets are present, it would also apply any time Feather River, Yuba River, American River, or any other Sacramento River tributary deploys a VA asset and that asset reaches the mainstem Sacramento River; and 2) while the "default" deployment schedule for most of the Sacramento watershed VA assets applies in Above Normal, Below Normal, and Dry years and generally in the March through May period, the flexibility brackets allow for flows to be deployed from January through June in Above Normal years and *year-round* in Below Normal and Dry years. Additionally, there remains uncertainty around the details (particularly the source[s]) of the "PWA Fixed Price Water Purchase Program" and the "State Water Purchase Flow Measures"; however, the current plans indicate implementation will occur in *all* water year types, with a default schedule of April through May and March through May, respectively.

Given the uncertainty around actual deployment of VA flows and implementation of Permit Term 31a, the ability to robustly analyze this condition is limited. Accordingly, we developed a scenario with a relatively strict interpretation and narrow application of Term 31a by curtailing Sites diversions in the Sites Historical WAA Tool during any month that a Sacramento River, Feather River, Yuba River, or American River VA asset would be deployed per the Default Plan. Through review of the most recent VA proposals, this would curtail Sites diversions in March through May of Above Normal, Below Normal, and Dry years, as well as March and April of

Critical years. Eliminating Sites diversions only in these months of the noted water years would reduce Sites diversions as calculated over the full period of analysis in the Sites Historical WAA Tool by 47,000 acre-feet compared to diversions with Permit Term 23[13] (relative to Table 2). Accordingly, this would result in a combined 84,000 acre-feet reduction (~28%) from potential diversions under the Operations ITP condition. The majority of the additional reduction comes from the loss of March diversions. Table 7 provides a more detailed overview of the monthly average change by water year type from the Operations ITP condition 9 (relative to Table 1).

Relative to Permit Term 23, Permit Term 31a further reduces potential diversions to zero in March, April, and May of all Above Normal, Below Normal, and Dry years. Accordingly, relative changes are largest in Above Normal years, with reductions to average monthly diversions in March, April, and May of Above Normal years of 100,000 acre-feet, 40,000 acre-feet, and 65,000 acre-feet, respectively.

Table 7. Change in Monthly Average Diversion by Sacramento Valley Water Year Type (Permit Terms 23 & 31a – Operations ITP). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	-16	-18	-19	-7	-7	14	0	0	0	0	-51
Above Normal	0	-1	-7	-13	-9	-100	-40	-65	0	0	0	0	-232
Below Normal	0	0	-3	-10	-10	-57	-11	-3	0	0	0	0	-91
Dry	0	0	-5	-4	-7	-12	0	0	0	0	0	0	-29
Critical	0	0	-3	-10	-12	0	0	0	0	0	0	0	-25
All Years	0	0	-6	-11	-11	-35	-12	-11	0	0	0	0	-84

Although curtailing diversions for the entire month is a broad approach to evaluating potential curtailments of Sites diversions due to the presence of Sacramento River Mainstem VA flows, this is offset by the potential for VA flows to be deployed during an even wider period of the year per the flexibility brackets, as well as the uncertainty around the potential sources of the PWA Water Purchase Program and Permanent State Water Purchases. If all or some portion of these supplies come from a Sacramento watershed source, then the affected period for the Default Plan would expand to cover the March through May period of all water year types, including Wet years that include Permanent State Water Purchases of the 123 TAF of water from that VA Pathway flow commitment.

Permit Term 31b

Permit Term 31b states that "no diversion is authorized on any day in which flow commitments provided pursuant to the VA Pathway are contributing to Delta outflow and Delta outflow remains below the sum of the Delta outflow requirement for diversion under Term 30 and the amount of VA Pathway flow commitments contributing to Delta outflow". This is understood to say that diversions cannot occur if the observed Delta outflow is less than the sum of the VA contribution to Delta outflow plus the Delta outflow requirement under Term 30.

[13] Term 30 diversion criteria was not included in this portion of the analysis to provide a bookend relative to the analysis completed for Term 31b and to provide an outlook on a condition in which Sites was a covered VA party but still required to comply with Permit terms 23 and 31a.

We are not able to explicitly model this requirement given the lack of data related to VA flow deployments on a daily basis. However, since the Delta outflow requirement references Term 30, the potential diversions under Term 30a can be used as a "base" condition, although in reality diversions would likely be lower due to the requirement that Delta outflow consider both the Term 30 requirement and the VA flows contributing to Delta outflow. Using Term 30a as a base, the same approach taken for Permit Term 31a can then be taken to curtail diversions when VA flows are present in the Sacramento River Mainstem. Applying these limitations results in an additional 7% reduction to Sites diversions compared to what was analyzed for Permit Term 30a over the shortened period of analysis. In total, this would be a 143,000 acre-foot reduction (~48%) to Sites diversions due to the combination of Permit Terms 23, 30a, and 31a. Table 8 provides a more detailed overview of the monthly average change by water year type from the Operations ITP condition (relative to Table 3). Results indicate that diversions would only occur after February in Wet years, which dramatically reduces annual average diversions in Above Normal and Below Normal years.

Table 8. Change in Monthly Average Diversion by Sacramento Valley Water Year Type (Permit Terms 23 & 30a & 31a/b – Operations ITP). Values in 1,000 acre-feet.

Month / WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Wet	0	0	-30	-92	-34	-28	-8	-14	-5	0	0	0	-211
Above Normal	0	-4	-22	-71	-48	-144	-52	0	0	0	0	0	-342
Below Normal	0	0	-26	-60	-8	-61	-6	0	0	0	0	0	-159
Dry	0	0	-45	-2	0	0	0	0	0	0	0	0	-47
Critical	0	0	-20	0	-8	0	0	0	0	0	0	0	-28
All Years	0	-1	-27	-43	-18	-40	-13	-4	-1	0	0	0	-143

We assume that the general reference in Permit Term 31b to "Permit Term 30" without more specific reference to 30a or 30c is to allow for the flexibility of the potential change to requirements pending the adoption of the updated Bay-Delta Plan. While potential effects to Sites diversions are likely to be somewhat lower under potential Permit Term 30c requirements relative to Permit Term 30a requirements, Permit Term 30c requirements still result in substantial reductions to Sites diversions. When considered along with the need to further curtail diversions when VA flows are present in the Sacramento River Mainstem and to comply with Delta outflow requirements when any VA flow is contributing to Delta outflow, the potential effects remain large.

Conclusions

Permit terms 23, 30, and 31 result in varying significant degrees of reductions to Sites diversions as compared to the Operations ITP when calculated in the Sites Historical WAA Tool. Due to data availability and uncertainty surrounding implementation of some of the requirements, the impacts of implementation of Permit terms 30 and 31 are reasonable approximations. Nonetheless, the analyses completed provide an outlook on the potential magnitude of the possible effect of each of these Permit terms on Sites diversions, as well as some of the operational considerations necessary if any or all of these requirements are implemented. Table 9

provides a summary of the annual average change to potential diversions resulting from each Permit Term, along with some additional reference information.

Table 9. Summary of Annual Average Diversions and Change from Operations ITP Criteria for Each Permit Term. Values in 1,000 acre-feet.

Condition	Analysis Period	Annual Average Diversion	Change from Operations ITP	Notes
Operations ITP	Jan 2000 – Sep 2024 Jan 2000 – Mar 2026 Oct 2012 – Mar 2026	288 301 297	-	288,000 acre-feet is comparable to Appendix 2 of SITES-334-R with the 986 TAF face value applied
Term 23	Jan 2000 – Mar 2026	264	-37 (-12%)	
Terms 23 + 30a	Oct 2012 – Mar 2026	176	-121 (-41%)	Term 30a accounts for approximately 37% of the 41% reduction
Terms 23 + 30c (Freeport)	Oct 2012 – Mar 2026	219	-79 (-26%)	Reduction is -22% with WSA
Terms 23 + 30c (Bend Bridge/ Hamilton City)	Oct 2012 – Mar 2026	208	-89 (-30%)	Reduction is -22% with WSA
Term 23 + 30a + 30d	Oct 2012 – Mar 2026	187	-110 (-37%)	Utilizable credits are added back to Terms 23 + 30a diversions
Terms 23 + 31a	Jan 2000 – Mar 2026	217	-84 (-28%)	Does not include any Term 30 criteria
Terms 23 + 30a + 31a	Oct 2012 – Mar 2026	154	-143 (-48%)	

As previously noted, the effects of Permit terms 23, 30, and 31 on potential Sites diversions were also evaluated using the Authority's CalSim 3 models. Table 10 provides a comparison of the change in potential Sites diversions from the Operations ITP for each of the proposed Permit Terms as evaluated in the Historical WAA Tool and the CalSim 3 model. Although some differences exist, given the differences in model inputs and operational parameters between the two analyses, the relative magnitudes and operational responses to the draft permits terms demonstrated by the two analyses indicate a high level of agreement and consistency regarding the adverse effects to Sites diversions.

Table 10. Modeling Summary of Sites Diversions with the Sites Draft Permit Terms. All values in 1,000 acre-feet, with changes shown relative to the ITP Scenario.

Scenarios	Daily Historical WAA	CalSim 3
Operations ITP	301 (-28% from ITP Application)	252 (-15% from ITP Application)
ITP + Term 23	-37 (-12%)	-38 (-15%)
ITP + Terms 23 + 30a	-121 (-41%)	-122 (-48%)
ITP + Terms 23 + 30c	-79 (-26%) to -89 (-30%)	-72 (-28%) to -86 (-34%)
Max Term 30d Savings	11 (4%)	N/A
Terms 23 + 31a	-84 (-28%)	-71 (-28%)
ITP + Terms 23 + 30a + 31a	-143 (-48%)	-139 (-55%)

Accordingly, each of the analyses developed consistently demonstrate the substantial effects on Sites diversions resulting from each of the Permit Terms in the Draft Permit.



Wesley Walker, P.E.

WW/lgb

ATTACHMENT C

ATTACHMENT 3

Proposed Revised Draft Permit Terms

Permit Term 22

~~22. No diversion under this right is authorized unless permittee is operating in compliance with Incidental Take Permit No. 2081-2023-051-00 for operation of the Sites Reservoir Project issued by CDFW on October 24, 2024 (2024 ITP. Permittee shall comply with all applicable diversion requirements specified in the 2024 ITP, including but not limited to Conditions of Approval 9.4, and 9.8 through 9.14, which are also listed in Attachment 1 of this Permit.~~

~~Permittee shall continue to comply with the diversions requirements in the 2024 ITP unless and until this term is amended. Within 30 days of issuance of a new or modified ITP for operations of the Sites Reservoir Project, Permittee shall submit to the Executive Director the new or modified ITP and a summary of any changes relative to the 2024 ITP. The Executive Director may amend this term and Attachment 1 without a petition for change by the Permittee to be consistent with the new or modified ITP if, after notice and opportunity for public comment, the Executive Director determines and CDFW concurs in writing that the amendments to this Term and Attachment 1 would be equally or more protective of fish and wildlife.~~

Replace with Special Permit Term 8 language previously provided:

[SP8] For the protection of the fisheries in the Sacramento River and Sacramento-San Joaquin Delta, diversions under this permit shall be subject to the Permittee complying with the California Endangered Species Act (Fish & G. Code, § 2050 et seq.), including any conditions of approval relative to Permittee's water operations in an Incidental Take Permit.

Permit Term 22 alternative language:

22. No diversion under this right is authorized unless permittee is operating in compliance with Incidental Take Permit No. 2081-2023-051-00 for operation of the Sites Reservoir Project issued by CDFW on October 24, 2024 (2024 ITP), as may be amended. ~~Permittee shall comply with all applicable diversion requirements specified in the 2024 ITP, including but not limited to Conditions of Approval 9.4, and 9.8 through 9.14, which are also listed in Attachment 1 of this Permit.~~

~~Permittee shall continue to comply with the diversions requirements in the 2024 ITP unless and until this term is amended. Within 30 days of issuance of a new or modified ITP for operations of the Sites Reservoir Project, Permittee shall submit to the Executive Director the new or modified ITP and a summary of any changes relative to the 2024 ITP. The Executive Director may amend this term and Attachment 1 without a petition for change by the Permittee to be consistent with the new or modified ITP if, after notice and opportunity for public comment, the Executive Director determines and CDFW concurs in writing that the amendments to this Term and Attachment 1 would be equally or more protective of fish and wildlife.~~

Permit Term 23

~~23. The following requirements shall apply to diversions at the Tehama-Colusa Canal POD (also referred to as the Red Bluff POD) and Glenn-Colusa Irrigation District POD (also referred to as the Hamilton City POD) in addition to the requirements of Term 22.~~

~~a. The Flow-Dependent Diversion requirements for the Red Bluff POD specified in the 2024 ITP for the period from March 1 to June 14, as identified in Attachment 1, shall also apply to diversions at the Red Bluff POD from January 1 to February 28 of each year.~~

~~b. No diversions are authorized during the first seven days of qualified precipitation-generated pulse flow events (pulse protection). The pulse protection shall be initiated when three-day forecasted average flow at Bend Bridge, as measured at USGS Gage No. USGS-11377100 (Sacramento R AB Bend Bridge NR Red Bluff CA), is greater than 8,000 cfs, and the three-day forecasted average combined tributary flow (as determined by summing the flow in Cow Creek near Millville, Cottonwood Creek near Cottonwood, and Battle Creek below Coleman Fish Hatchery) is greater than 2,500 cfs. The pulse protection shall remain in effect for seven consecutive days upon initiation. If the average daily flow at Bend Bridge exceeds 29,000 cfs, the pulse protection may be terminated before seven days and diversions may resume, provided that flow remains above 25,000 cfs at Bend Bridge during the remainder of the seven-day period. After completion of the pulse protection, resetting criteria must occur before another pulse protection may go into effect. The resetting criteria are met when the three-day moving average flow in the Sacramento River above Bend Bridge is below 7,500 cfs for seven consecutive days and the above-referenced three-day moving average tributary flow is below 2,500 cfs for seven consecutive days.~~

~~c. No diversions shall occur if the flow in the Sacramento River at Wilkins Slough, as measured at USGS station 11390500, is below 14,125 cfs, or the diversion will cause the flow in the Sacramento River at Wilkins Slough, as measured at USGS station 11390500, to fall below 14,125 cfs, from December 1 to April 30, inclusive.~~

~~d. The Executive Director may amend this term at the request of Permittee based on new information if, after notice and opportunity for public comment, the Executive Director determines and CDFW concurs in writing that the amended term will prevent unreasonable effects on fish and wildlife, including listed species under the California Endangered Species Act (CESA) and non-CESA listed species.~~

Permit Term 23 alternative language:

23. The following requirements shall apply to diversions at the Tehama-Colusa Canal POD (also referred to as the Red Bluff POD) and Glenn-Colusa Irrigation District POD (also referred to as the Hamilton City POD) in addition to the requirements of Term 22.

    a. The Flow-Dependent Diversion requirements for the Red Bluff POD specified in the 2024 ITP for the period from March 1 to June 14, as

identified in Attachment 1, shall also apply to diversions at the Red Bluff POD from January 1 to February 28 of each year.

~~b. No diversions are authorized during the first seven days of qualified precipitation-generated pulse flow events (pulse protection). The pulse protection shall be initiated when three-day forecasted average flow at Bend Bridge, as measured at USGS Gage No. USGS-11377100 (Sacramento R AB Bend Bridge NR Red Bluff CA), is greater than 8,000 cfs, and the three-day forecasted average combined tributary flow (as determined by summing the flow in Cow Creek near Millville, Cottonwood Creek near Cottonwood, and Battle Creek below Coleman Fish Hatchery) is greater than 2,500 cfs. The pulse protection shall remain in effect for seven consecutive days upon initiation. If the average daily flow at Bend Bridge exceeds 29,000 cfs, the pulse protection may be terminated before seven days and diversions may resume, provided that flow remains above 25,000 cfs at Bend Bridge during the remainder of the seven-day period. After completion of the pulse protection, resetting criteria must occur before another pulse protection may go into effect. The resetting criteria are met when the three-day moving average flow in the Sacramento River above Bend Bridge is below 7,500 cfs for seven consecutive days and the above-referenced three-day moving average tributary flow is below 2,500 cfs for seven consecutive days.~~

~~c. No diversions shall occur if the flow in the Sacramento River at Wilkins Slough, as measured at USGS station 11390500, is below 14,125 cfs, or the diversion will cause the flow in the Sacramento River at Wilkins Slough, as measured at USGS station 11390500, to fall below 14,125 cfs, from December 1 to April 30, inclusive.~~

~~d~~b. The Executive Director may amend this term ~~at the request of Permittee~~based on new information and without a petition for change by the Permittee if, after notice and opportunity for public comment, the Executive Director determines and CDFW concurs in writing that the amended term will prevent unreasonable effects on fish and wildlife, including listed species under the California Endangered Species Act (CESA) and non-CESA listed species.

Permit Term 29

29. ~~No diversion is authorized when any~~Diversions authorized under this Permit shall be consistent with the Permittee's implementation of the numeric Sacramento River inflow, Sacramento River salinity, or Delta outflow, including salinity-based Delta outflow objectives of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta Plan) in accordance with either the non-VA Pathway regulatory provisions or the VA Pathway provisions of the Bay-Delta Plan, and consistent with any future amendments of said numeric objectives~~thereto, are not being met~~.

Permit Term 30

30. The following requirements apply to diversions under this Permit:

    a. Except as provided in part (d), diversions are not authorized when Sacramento River inflow and Sacramento River inflow-based Delta

outflow is less than 55 percent of unimpaired ~~Delta out~~flow calculated as a seven-day running average or if diversions would reduce Sacramento River inflow and Sacramento River inflow-based Delta outflow below 55 percent of unimpaired ~~Delta out~~flow calculated as a seven-day running average.

b. The methodology and data sources in Attachment 4 shall be used to calculate the requirements of part (a) of this term. The Executive Director may amend Attachment 4 either at their election or upon request of the Permittee or any interested party to improve accuracy of the methodology or data sources. Notice of any change to Attachment 4 will be provided by the Board's email distribution list for Bay-Delta-related matters and to the Permittee and posted on the State Water Board's website at least 60 days in advance of any decision to amend Attachment 4 by the Executive Director.

c. If the Board updates the Bay-Delta Plan to include Sacramento River inflow and inflow-based Delta outflow requirements based on a percentage of unimpaired flow applicable to this Permit, and the Board takes regulatory actions to implement those requirements, then Permittee shall comply with those regulatory requirements in lieu of the requirements of parts (a) and (b) of this term. Applicable Sacramento River inflow and Delta outflow requirements do not include water supply adjustments or local cooperative solutions unless this Permit is ~~identified~~approved as qualifying for water supply adjustments or local cooperative solutions in accordance with the Bay-Delta Plan, or this term is modified pursuant to the Board's reservation of authority in Term 57.

~~d. The conditions on diversion in this Term shall be subject to the following exception:~~

~~i. If Term 23 prohibits or limits diversions when all other conditions for diversion are met, the Permittee may quantify the additional volume of water it would have been able to divert absent the requirements of Term 23. The methodology for quantifying the volume shall take into consideration all relevant factors, including infrastructure capacity, and must be approved by the Executive Director.~~

~~ii. If, in the same water year, Term 30(a) prohibits or limits diversions but all other conditions for diversion are met, including but not limited to Term 23, the Permittee may divert up to the additional volume of water quantified under part (i). The Executive Director may suspend application of this part upon finding that the diversions authorized by this part would have an unreasonable effect on fish or other instream beneficial uses.~~

~~iii. If the Bay-Delta Plan is updated to include adaptive implementation provisions such as flow shaping, and the Board takes regulatory actions applicable to this Permit to implement Delta outflow requirements, then the procedures described in the Bay-Delta Plan shall apply in lieu of part (ii).~~

~~iv. Annually, the Permittee shall report to the Board the volume of water quantified under part (i) of this Term, the dates water was diverted under part (ii) of this Term, and the volume of water diverted under part (ii) of this Term.~~

d. If the Board updates the Bay-Delta Plan to include a VA Pathway and this Permit is subsequently approved by the Board for inclusion in the water rights list in Appendix B.1 of the Bay-Delta Plan in accordance with the applicable provisions of the Bay-Delta Plan, then Permittee shall comply with its commitments as described in and required under the VA Pathway in lieu of the requirements in parts (a) and (b) of this term so long as the VA Pathway is in effect under the Bay-Delta Plan and any future amendments thereto.

Permit Term 31

31. If the Board updates the Bay-Delta Plan to include a VA Pathway, diversions under this Permit shall not interfere with the intended benefits to fish and wildlife beneficial uses of flow and non-flow commitments provided pursuant to the VA Pathway. ~~At a minimum,~~ tThe following conditions apply:

~~a. No diversion is authorized on any day when flow commitments provided pursuant to the VA Pathway are present in the mainstem of the Sacramento River.~~

~~b. No diversion is authorized on any day in which flow commitments provided pursuant to the VA Pathway are contributing to Delta outflow and Delta outflow remains below the sum of the Delta outflow requirement for diversion under Term 30 and the amount of VA Pathway flow commitments contributing to Delta outflow.~~

a. For all days when Sacramento River HRL participants' flow commitments provided pursuant to the VA Pathway are present in the Bay-Delta watershed, the allowable diversions under this Permit shall be based on flow conditions absent any such Sacramento River HRL participants' flow commitments.

~~c~~b. The accounting methodology in the Bay-Delta Plan shall be used to determine when Sacramento River HRL participants' flow commitments are present in the Bay-Delta watershed~~mainstem of the Sacramento River~~, and the presence and amount of those flow commitments contributing to Delta outflow. During those years when Sacramento River HRL participants' flow commitments are provided pursuant to the VA Pathway and concurrent with diversions under this Permit, Permittee shall provide reports to the Deputy Director to substantiate Permittee's compliance with this term on a schedule that the Deputy Director determines is consistent with other reporting requirements in the Bay-Delta Plan.

~~d~~c. The Board reserves the authority to modify this term, following notice and opportunity for public comment, to ensure consistency with the Bay-Delta Plan and approved VAs.

Permit Term 33

33. Prior to construction of Sites Reservoir, Permittee shall conduct pre-construction total mercury soil~~sediment~~ screening, sediment coring, and other actions to identify areas that may have higher concentrations of mercury within the inundation area. Permittee shall identify to the Executive Director any actions that will be taken prior to construction to address any areas that may have increased concentrations of mercury.

Permit Term 34

34. Permittee shall consolidate the applicable requirements of Terms 35 through 43 into a Water Quality Portfolio for review and approval by the State Water Board. The Water Quality Portfolio shall include ~~the~~ Reservoir Management Plan (Sites RMP) Sections 2D3.1 and 2D3.2 described in Appendix 2D of the EIS/EIR, and any additional actions or plans under Terms 35 through 43. No diversions or rediversions shall occur unless the Water Quality Portfolio is approved and the actions described by the approved Water Quality Portfolio are conducted in accordance with the deadlines described in the Water Quality Portfolio.

Permittee shall post a draft of the Water Quality Portfolio and drafts of any subsequent updates to the Water Quality Portfolio on its website and offer a 30-day period for public review and comment. Permittee shall consider and respond to any comments in writing, and shall submit the Portfolio, comments, and responses to the State Water Board.

Permittee shall consult with the Central Valley Water Quality Control Board, CDFW, and any California Native American Tribe ~~requesting consultation~~ with ancestral lands in the counties adjacent to the Sacramento River downstream of Lake Shasta and throughout the Delta, the Feather River downstream of Lake Oroville (assuming exchanges may affect the Feather River), within the Sites Reservoir inundation area, and adjacent to any Project infrastructure prior to submitting the initial Water Quality Portfolio to the State Water Board for its consideration and prior to submitting any update to the Water Quality Portfolio. Permittee shall develop a notification list of representatives of California Native American Tribes by submitting requests to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands Inventory and the NAHC Contact List for Tribal Consultation, to identify Tribes with current or ancestral lands in any county that overlies either the Delta, as defined by Water Code section 12220, or the Sacramento River watershed. The notification list of Tribes shall also include all Tribes that have requested, in writing, notification of the opportunity to consult and all Tribes that participated as parties in the hearing for Decision XXXX. Permittee shall update this list and notify Tribal representatives on the list of the opportunity to consult at least 180 days prior to submission of the Water Quality Portfolio to the State Water Board and 180 days prior to submission of updates to the Water Quality Portfolio.

Permittee shall submit updates to the Water Quality Portfolio at least every five years following initial approval by the State Water Board. Updates to the Water Quality Portfolio shall identify actions implemented during the prior five years, the impact of those actions on water quality in waterbodies affected by project operations, and any proposed changes or additions to actions in the Water Quality Portfolio. Proposed updates to the Water Quality Portfolio may include revised criteria for prohibitions of releases to the Colusa Basin Drain, Yolo Bypass, or the

Sacramento River based on changes to applicable water quality control plans, including changes to water quality objectives or programs of implementation provisions, or other new information relevant to the protection of beneficial uses or public health. Approval of the Water Quality Portfolio and subsequent updates shall expire six years after their respective approval dates. Updates to the Water Quality Portfolio shall become effective upon approval by the Executive Director and may include unchanged components of prior Water Quality Portfolios.

Permit Term 35

35. Permittee shall include a monitoring plan for cyanobacteria and cyanotoxins in the Water Quality Portfolio. The plan shall include:

    a. Locations and frequency of monitoring for cyanobacteria and cyanotoxins in Sites Reservoir.

    b. Locations and frequency of monitoring for cyanobacteria and cyanotoxins in the Colusa Basin Drain, Yolo Bypass, Sacramento River, and Delta that is coordinated with and supplements existing monitoring for harmful algal blooms (HABs) under other programs, including the Bay-Delta Monitoring and Evaluation Program.

    The five-year updates to the Water Quality Portfolio shall include the following information:

    c. Whether HABs increased or decreased in duration, intensity, or frequency at any of the monitoring locations;

    d. Whether detections of cyanobacteria or cyanotoxins occurred, and the timing of these occurrences in relation to releases~~diversions~~ under this Permit and HABs drivers such as flow, temperature, or nutrient conditions in the water body where cyanobacteria or cyanotoxins occurred.

    e. The varieties of cyanobacteria or cyanotoxins that were detected using methods consistent with the Bay Delta Monitoring and Evaluation Program, including monitoring discrete physical and chemical water quality parameters, conducting discrete phytoplankton and algal pigment analysis, using visual indices, and cyanotoxin analysis, and whether varieties detected downstream of the reservoir were of the same variety as those occurring in the reservoir.

Permit Term 37

37. If an approved Water Quality Portfolio does not include a HABs Strategy developed pursuant to Term 36, then no water shall be released from Sites Reservoir when cyanobacteria or cyanotoxin levels in the released water are above California's Cyanobacteria and Harmful Algal Bloom Network ~~Caution~~ Warning Level as demonstrated by the monitoring procedures described in the Sites RMP. If an applicable water quality objective for cyanobacteria or cyanotoxin is adopted, and the objective is included in the approved Water Quality Portfolio or any update as provided for in Term 34, that objective will be substituted for the Cyanobacteria and Harmful Algal Bloom Network Caution Level in this term. Permittee shall describe the effectiveness of any HABs

management practices used within the reservoir as part of each five-year update to the Water Quality Portfolio.

Permit Term 41

41. Permittee may develop a Sacramento River Temperature Strategy (Temperature Strategy) to address impacts to fisheries from temperature changes in the Sacramento River caused by release of Sacramento River Conveyance Water to be included in the Water Quality Portfolio. Permittee shall receive concurrence from CDFW that the Temperature Strategy will avoid temperature-related detrimental effects on fisheries in the Sacramento River prior to submitting the Temperature Strategy to the State Water Board. Upon approval of the Water Quality Portfolio, the requirements in the Temperature Strategy shall supersede the numeric requirements of Term 42. The Temperature Strategy must include:

    a. Monitoring sufficient to support development and validation of modeling to accurately quantify and forecast temperature changes in the Colusa Basin Drain and the Sacramento River that will be caused by releases of water from Sites Reservoir.

    b. Integration of the operation of Sites Reservoir with other reservoir operations affecting temperature in the Sacramento River downstream of Shasta Dam to avoid temperature impacts to fisheries. Specific actions to be evaluated include exchanges between Sites Reservoir and Shasta Reservoir to increase cold-water pool available in Shasta Reservoir for temperature management, or other actions to offset temperature increases that may result from the release of Sacramento River Conveyance Water.

    c. Temperature thresholds at which releases of Sacramento River Conveyance Water will cease or be reduced to avoid detrimental impacts to fisheries, and the conditions under which each threshold applies.

    d. If the temperature thresholds would allow releases of Sacramento River Conveyance Water when such releases may cause or contribute to temperature increases in the Sacramento River above a seven-day average daily maximum of 68 degrees Fahrenheit (F), a description and supporting documentation of conditions under which temperature increases above a seven-day average daily maximum of 68 degrees F between Hamilton City and the I Street Bridge will not be detrimental to fisheries. For salmonids, the determination of whether a temperature impact would be detrimental may take into account the broader condition of the fishery.

Permit Term 42

42. If an approved Water Quality Portfolio does not include a Temperature Strategy developed pursuant to Term 41, then no water shall be released from Sites Reservoir and conveyed in the Sacramento River unless the Project water, when released from the Colusa Basin Drain into the Sacramento River, is (a) cooler than the Sacramento River or (b) would not cause the Sacramento River to exceed~~less than~~ 68 degrees F. Temperatures shall be measured and compared on a seven-day average daily maximum~~an instantaneous~~ basis.

Permit Term 46

46. No rediversion of water under this Permit at the Export Facilities shall occur ~~until the numeric water quality objectives in the Bay-Delta Plan, as it may be amended are met~~ when DWR and Reclamation are deemed to be out of compliance with the objectives currently required of DWR and Reclamation set forth in Tables 1, 2, and 3 on pages 181 to 187 of State Water Board Revised Decision 1641 (D-1641), or any future State Water Board order or decision implementing Bay-Delta water quality objectives at those plants.

Permit Term 49

49. No rediversion of water under this Permit at the Export Facilities shall occur when water ~~depths~~levels in Delta channels are not adequate to support diversions by reasonable methods pursuant to any valid water right with a priority date senior to this Permit. Rediversions of water at the Export Facilities shall comply with the various plans required under D-1641 as prerequisites for the use of the Joint Points of Diversion by the Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR), including but not limited to the water level response plan and the water quality response plan. ~~The Executive Director may approve, after notice and opportunity for public comment:~~

~~a. Water depths at specific measurement locations developed by the Permittee in consultation with South Delta Water Agency (SDWA) that demonstrate adequate water depths to prevent injury to senior right holders; or~~

~~b. A physical solution to prevent injury to senior right holders that is submitted by the Permittee with written concurrence from SDWA.~~

~~Upon approval by the Executive Director, water may be rediverted at the Export Facilities if (a) the approved water depths are met, or (b) the physical solution is implemented to prevent injury.~~

~~In the alternative to the above conditions on rediversion, the Executive Director may approve, after notice and opportunity for public comment, a regulatory program that comprehensively manages operation of the Export Facilities to prevent injury to right holders from inadequate water depths in Delta channels. Such a regulatory program may include but is not limited to a regulation implementing the Bay-Delta Plan or an approved comprehensive plan to address water depths in the southern Delta pursuant to a federal or state-issued permit, license, or other approval. The Executive Director shall find that the regulatory method applies to rediversions under this Permit or amend this term to require Permittee to comply with the regulatory program. Upon approval by the Executive Director, water may be rediverted at the Export Facilities in compliance with the approved regulatory program.~~

Permit Term 52

52. ~~Prior to commencing diversions, Permittee shall develop and submit to the Deputy Director for approval a groundwater monitoring program prepared by a professional hydrogeologist to identify whether diversions under this Permit are causing or threatening to cause injury to groundwater right holders. The Permittee may rely on and incorporate existing monitoring locations, protocols, and~~

~~thresholds being implemented pursuant to the Sustainable Groundwater Management Act. The program shall identify monitoring locations, sampling frequencies, and explanation of how the monitoring will be sufficient to identify changes in groundwater conditions potentially caused by the diversions. For each monitoring location, the program shall identify water elevation thresholds at which the Permittee shall conduct analyses to determine whether diversions under the Permit are contributing to groundwater level declines or other adverse effects to groundwater conditions that may injure groundwater right holders. In the absence of existing monitoring activities that are sufficient to monitor the potential effects of diversions, Permittee shall conduct its own groundwater elevation monitoring. Any data collected by the Permittee pursuant to this term shall be submitted to DWR's Water Data Library or another publicly accessible data system approved by the Deputy Director.~~

Permittee shall coordinate with the Colusa Subbasin Groundwater Sustainability Agencies (GSAs). If a sustainable ~~a groundwater~~management criteria (SMC) threshold ~~level reaches a monitoring threshold at any location~~identified in the Colusa Subbasin Groundwater Sustainability Plan ~~program~~is exceeded, Permittee shall consult with the Colusa Subbasin GSAs~~relevant groundwater sustainability agency~~ and shall analyze the extent to which Sites Reservoir operations~~diversions~~ under the Permit, either during that year or as a cumulative effect, may have contributed to a threshold exceedance~~groundwater elevation declines~~. The analysis and any supporting information, including any actions by the Permittee to address the effects of Sites Project operations~~diversions~~ on groundwater conditions, shall be included in the Permittee's next Annual Report.

Upon receipt of evidence that Sites Project operations~~diversions~~ authorized by this Permit may cause or threaten to cause injury to groundwater right holders in subbasins adjacent to the Sacramento River downstream of the points of diversion, the State Water Board reserves the authority to modify the terms and conditions of this Permit if, after notice to interested parties and opportunity for a hearing, the Permittee fails to demonstrate that operations under this Permit will not cause injury.