VI.

San Luis & Delta-Mendota Water Authority

P.O. Box 2157
Los Banos, CA 93635
Phone: (209) 826-9696
Fax: (209) 826-9698

March 30, 2022

VIA EMAIL

Cindy Meyer
Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Cindy Meyer: sha-MPR-BDO@usbr.gov

Re: Re: Notice of Intent to Prepare an Environmental Impact Statement for Analyzing Potential Modifications to the Long-Term Operation of the Central Valley Project and State Water Project – Scoping Comments

Dear Ms. Meyer:

The San Luis & Delta-Mendota Water Authority ("Water Authority") appreciates the opportunity to comment in response to the U.S. Bureau of Reclamation's ("Reclamation") Notice of Intent to Prepare an Environmental Impact Statement ("EIS") and Hold Public Scoping Meetings on the 2021 Endangered Species Act Reinitiation of Section 7 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project, published in the Federal Register on February 28, 2022 ("NOI"), 87 Fed. Reg. 11093 (Feb. 28, 2022).

The Water Authority is a public agency with its principal office located in Los Banos, California. It was formed in 1992 as a joint powers authority, and has twenty-seven member agencies. Twenty-five of the Water Authority's member agencies contract with the United States for the delivery of water from the federal Central Valley Project ("CVP"). Most of the Water Authority's member agencies depend upon the CVP as the principal source of water they provide to users within their service areas. That water supply serves approximately 1.2 million acres of agricultural lands within areas of San Joaquin, Stanislaus, Merced, Fresno, Kings, San Benito, and Santa Clara Counties, a portion of the water supply for nearly 2 million people, including in urban areas within Santa Clara County referred to as the "Silicon Valley," and millions of waterfowl that depend upon nearly 200,000 acres of managed wetlands and other critical habitat within the largest contiguous wetland in the western United States. The operations of the CVP are therefore of vital interest and importance to the Water Authority, its member agencies, and the people, farms, businesses, communities, and wildlife refuges they serve.

The existing plan of operations for the CVP is included in the Record of Decision: Reinitiation of Consultation on the Coordinated Long-Term Modified Operations of the CVP and State Water Project ("SWP"), signed February 18, 2020 ("2020 ROD") and the Biological Opinion on Long-term Operation of the CVP and SWP issued by the National Marine Fisheries Service on October 21, 2019, and the Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the CVP and SWP issued by the U.S. Fish and Wildlife Service on October 21, 2019 (together "2019 BiOps"), which are based on the best available scientific data available as of the documents' issuance. The existing plan of operations ensures that CVP operations will not jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. The existing plan of operations provides a comprehensive, yet flexible, operations plan that enables Reclamation to effectively serve the CVP's various purposes, including protecting federally listed species, even when faced with prolonged drought conditions.

The Water Authority offers the following comments in response to the NOI, with the aim of encouraging Reclamation to achieve the same end with any new plan of operations.

1. Proposed Action

Under CEQ regulations, a notice of intent must briefly describe "the proposed action and possible alternatives." 40 C.F.R. § 1508.22. Under the heading "Proposed Action and Preliminary Alternatives To Be Considered," the NOI describes alternatives that may be considered in the EIS, but does not specifically describe a proposed action. 87 Fed. Reg. at 11094.

For purposes of this letter, the Water Authority assumes that the proposed action is the continued long-term operations of the CVP, consistent with Congressional authorizations, in coordination with the SWP, and consistent with applicable agreements and law. The remaining comments are made with this assumption in mind.

2. Purpose and Need

An EIS must contain a statement of "purpose and need" that briefly specifies "the underlying purpose and need to which the [lead] agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. § 1502.13. The statement of purpose and need "is a critical element that sets the overall direction of the process and serves as an important screening criterion for determining which alternatives are reasonable." Reclamation's NEPA Handbook (Feb. 2012) at 8-5. The statement is important because it will guide selection of alternatives, and "[a]ll reasonable alternatives examined in detail must meet the defined purpose and need." *Id.*

The Department of Interior's NEPA regulations provide that in "some instances it may be appropriate for the bureau to describe its 'purpose' and its 'need' as distinct aspects. The 'need' for the action may be described as the underlying problem or opportunity to which the agency is responding with the action. The 'purpose' may refer to the goal or objective that the bureau is

trying to achieve, and should be stated to the extent possible, in terms of desired outcomes." 43 C.F.R § 46.420(a)(1). In this case, the need for the action and the purpose of the action are distinct—and, the EIS should reflect that difference.

Under the heading "Purpose and Need for the Proposed Action," the NOI explains why Reclamation reinitiated consultation. That explanation may provide important context but it does not replace the requirement for a clear and concise statement of need. The Proposed Action—simply put, the continued long-term operations of the CVP, in coordination with the SWP—is needed to allow Reclamation and DWR to respectively serve the purposes Congress established for the CVP and the California Legislature established for the SWP.

The statement of purpose also suffers from ambiguity and would benefit from being stated succinctly. The NOI explains the "purpose of the proposed action considered in this EIS is to continue the operation of the CVP and the SWP for authorized purposes, in a manner that: [1] [m]eets requirements under Federal Reclamation law; other Federal laws and regulations; Federal permits and licenses; and State of California water rights, permits, and licenses pursuant to section 8 of the Reclamation Act; [2] [s]atisfies Reclamation contractual obligations and agreements; and [3] implements authorized CVP fish and wildlife project purposes." 87 Fed. Reg. at 11094. This statement creates uncertainty by stating a purpose in the first bullet that may encompass the purpose stated in the last bullet. Reclamation should state the purpose of the Proposed Action is to ensure Reclamation and DWR are able to operate the CVP and SWP, respectively, consistent with Federal Reclamation law; other Federal laws and regulations; contractual obligations; Federal permits and licenses; and State of California water rights, permits, and licenses pursuant to section 8 of the Reclamation Act.

3. Affected Environment

To satisfy NEPA requirements, an EIS must "succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. This discussion should include a "general description of the physical environment of the project area and a map defining the project area, the associated ecosystem(s), and the affected environment." Reclamation's NEPA Handbook at 8-13. This general description "should include not only the physical setting for the project, but it should describe those features—geographic, cultural, recreation, or unique or significant wildlife or vegetation—that distinguish the affected area from other areas." *Id.*

a. Clarification Regarding Areas Included

The NOI does not use the term "affected environment." Under the heading "Project Area (Area of Analysis)," the NOI states that "[t]he project area includes CVP service areas and CVP dams, power plants, diversions, canals, gates, and related Federal facilities located on Clear Creek; the Trinity, Sacramento, American, Stanislaus, and San Joaquin rivers; and in the Sacramento-San Joaquin Delta (Delta)." 87 Fed. Reg at 11094 (emphasis added). In addition, the NOI states, "The

project area includes SWP service areas downstream of the Feather River and SWP facilities in the Sacramento-San Joaquin Delta, Cache Slough Complex, and Suisun Marsh." *Id.*

First, to ensure a complete analysis of potential impacts of the Proposed Action, the project area must include the CVP service areas and facilities located within the watersheds for the rivers listed above, and not be limited to CVP facilities located "on" the listed rivers and in the Delta (in addition to CVP service areas).

Second, further clarity should be provided regarding whether and how the project area includes the Trinity River Division and Friant Division. Based on the first bullet point in this section of the NOI, regarding the Trinity River, and the fifth bullet point, regarding the San Joaquin River, it appears they will be included. 87 Fed. Reg. at 11094. However, given the unique complexities associated with both Trinity River and Friant Division operations[1] the Water Authority recommends clearly identifying which components of divisional operations will be analyzed.

b. Importance of Analyzing Effects on Communities South of the Delta

The project area appropriately "includes CVP service areas." 87 Fed. Reg. at 11094. The CVP service areas are a critical component of the human environment potentially affected by changes in CVP operations. When CVP water deliveries to communities and lands south of the Delta are restricted or absent, the people who live and work in this region suffer. This suffering manifests itself in many ways, including:

1. Reduced employee hours, lost wages and jobs, loss of tax revenue to fund municipal services such as fire and police protection, and the resulting reduction in staffing at the local government level, thereby contributing to family disruption and dislocation;

2. Adverse impacts to local schools from the relocation of farming-dependent families, lost school revenues, and additional social costs for schools, food shortages and increased demand for public services such as food banks, and an increased incidence of crime;

3. Loss of crops, including the destruction of permanent crops, which increases the amount of fallowed land that diminishes air quality due to dust and particulate matter and decreases

[1] For example, Reclamation operates the Trinity River Division consistent with a Long-Term Plan for Protecting Late Summer Adult Salmon in the Lower Klamath River, but the species analyzed in this plan are not listed as threatened or endangered under the ESA. Will these operations be included in the proposed action? Another question: does Reclamation intend to include the Trinity River Restoration Program Winter Flow Variability, or operations for coho salmon? And with respect to the Friant Division, does Reclamation intend to include the San Joaquin River Restoration Program?

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public health through increased instances of Valley fever and other respiratory ailments; and

4. Increased groundwater pumping, resulting in decreased irrigation water quality and impacts to crops from increased soil salinity, groundwater overdraft resulting in land subsidence and associated impacts to infrastructure, increased energy usage and associated environmental impacts - including greenhouse gas emissions - related to increased pumping, and depletion of groundwater reserves.

The above-listed impacts should be part of the analysis of the proposed action and project alternatives. That analysis will be important when assessing the ability of each alternative to serve the purpose and need for the proposed action.

4. Scope of Alternatives

In the alternatives analysis, federal agencies must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. §§ 4332(2)(E), 4332(2)(C)(iii). Reasonable alternatives are those that are "technically and economically practical or feasible and meet the purpose and need of the proposed action." 43 C.F.R. § 46.420.

As the existing plan of operations already provides a comprehensive and flexible method for Reclamation to effectively serve the CVP's various purposes, alternatives should be limited to those that reflect and incorporate scientific and other data that has become available since the 2020 ROD and that meet the purpose and need for the proposed action.

Modifications to operations included in the various alternatives should also be tailored to address the effects of CVP operations. New scientific data and information can assist in this process. For example, the study published by Dr. Rebecca Buchanan et al. in 2021[2] regarding outmigration survival of steelhead is relevant scientific information that Reclamation should consider when developing measures to protect out-migrating San Joaquin River steelhead.

Finally, Reclamation should not volunteer to take actions that DWR may be required to take pursuant to CESA, if Reclamation's action could diminish CVP water supply available to CVP contractors, change the timing of deliveries to the detriment of the needs of CVP contractors, or place financial commitments on the CVP contractors. The Water Authority acknowledges that there is some difficulty in coordinating CVP and SWP operations where the SWP must comply with conditions imposed under CESA. However, Reclamation is not subject to CESA. To reduce conflict between CVP and SWP operations, Reclamation and DWR should explore (1) changes to

[2] Buchanan, R.A., E. Buttermore, and J. Israel. 2021. Outmigration survival of a threatened steelhead population through a tidal estuary. Can. J. Fish. Aquat. Sci. 78: 1869-1886.

CVP operations only if the changes do not adversely affect the timing or quantity of water available for CVP purposes or the cost to CVP contractors, and (2) changes that align SWP operations to CVP operations, as part of each alternative.

5. Conclusion

The Water Authority appreciates this opportunity to submit these comments and looks forward to working with Reclamation and others in this planning process.

Sincerely,

J. Scott Petersen, P.E.
Director of Water Policy
San Luis & Delta-Mendota Water Authority

From the California Natural Resources Agency:

State, federal and local water leaders announced broad agreement today on measures to provide additional water flows and new habitat to help improve conditions in the Sacramento-San Joaquin River Delta watershed.

The memorandum of understanding (MOU) signed today outlines terms for a transformational eight-year program that would provide substantial new flows for the environment to help recover salmon and other native fish, create new and restored habitat for fish and wildlife, and provide significant funding for environmental improvements and water purchases. It also outlines a governance and habitat monitoring framework with clear metrics and goals to allow state, federal and local partners to analyze progress, manage adaptively and decide whether the program should be continued, modified or ended after eight years.

"Since my first days in office, I have sought to reject old binaries and find new solutions to problems – we don't have to choose between healthy ecosystems or a healthy economy, we can choose a path that provides for both," Governor Gavin Newsom said. "This is a meaningful, hard-earned step in the right direction. I am thankful to our partners on this historic agreement and look forward to continued collaboration as we adapt for the future."

The state has been actively working with local water agencies since 2016 to develop enforceable agreements to provide additional river flows and new habitat to help change the trajectory of declining native fish species. Following the release of a framework document in February 2020, state agencies have continued to work with local water agencies to refine elements of agreements that would enable adaptive, holistic management and deliver environmental improvements more quickly than a regulatory proceeding that would likely be contentious.

"Today's MOU is an important milestone, but there is much work ahead," California Secretary for Natural Resources Wade Crowfoot said. "We're committed to advancing these critical agreements because they hold promise to improve environmental conditions more quickly and holistically than regulatory requirements, while providing

more certainty to communities, farms and businesses. The severity of this drought shows us how quickly we need to move and how much we can get done with a mutual commitment to increase flows, accelerate habitat restoration, and learn together what works best so that we can do more of it."

"Extreme weather caused by climate change is wreaking havoc with California's water supplies. By adaptively managing this complex system, the Voluntary Agreements speed up the delivery of additional water and critical habitat," California Secretary for Environmental Protection Jared Blumenfeld said. "This agreement will move us away from 'water wars' of yesteryear, ushering in a new era of collaboration in the battle to fight climate change."

"Today marks a key milestone in California water – a step that symbolizes the importance of working together to address the challenges that come with a changing climate," said Reclamation Regional Director Ernest Conant. "Reclamation welcomes this partnership opportunity to move towards a more comprehensive approach to improving the health of the environment and water supply reliability for the cities, farms, and refuges we serve."

The State Water Resources Control Board is required to update its Bay-Delta Water Quality Control Plan to protect native fish, wildlife and other "beneficial uses" of water, including municipal, domestic and agricultural water supplies.

The MOU signed today seeks to meet those objectives through an integrated program that includes habitat creation, new flows for the environment above existing regulatory requirements, funding for environmental improvements and water purchases, and a new, collaborative science program for monitoring and adaptive management.

Habitat creation would range from targeted improvements in tributaries to large landscape-level restoration in the Sacramento Valley. Improvements include creation of spawning and rearing habitat for salmon and smelt, completion of high-priority fish screen projects, restoration and reactivation of flood plains, projects to address predation, and fish passage improvements.

"Today's action is a major step in significantly improving how we manage our water supplies to support our environment and all Californians," said Jennifer Pierre, general manager of the State Water Contractors. "Our only path forward is together and the VAs create an appropriately sourced governance approach that will allow resource agencies, public water agencies and conservation groups to work together to better balance the environmental and economic needs of our State. We look forward to working with our partners and state leaders to move the VAs forward to achieve reliable water supplies for Californians and our ecosystems."

"The program advanced today represents a fundamental change in how state agencies, federal agencies, public water agencies, and other interested groups approach efforts to protect the environment and provide water for cities, industries, and farms," said Thomas Birmingham, general manager of Westlands Water District. "This program will

take a comprehensive approach to restoring healthy rivers and ecosystems, improving the viability of native fish populations, and providing water supply reliability to communities and farms in nearly every region of the state. This is vitally important to California agriculture, which provides more than two-thirds of the nation's fruits and nuts and more than one-third of the nation's vegetables."

"This is a critical milestone in our joint effort to develop a balanced and holistic watershed-wide approach to address the environmental and water reliability challenges we face in the Sacramento-San Joaquin Delta," Metropolitan General Manager Adel Hagekhalil said. "But this is just the first step. We need to work collaboratively with all of our state, federal, environmental and water agency partners to ensure we have a comprehensive action plan that improves water reliability and delivers real results for the environment."

"We look forward to the new collaborative governance and trust building that will occur through decision-making processes in the agreement, and appreciate the framework to balance beneficial water needs for fish, farms, communities and the environment," said Thad Bettner, general manager of Glenn-Colusa Irrigation District.

Local water agency managers signing the MOU have committed to bring the terms of the MOU to their boards of directors for their endorsement and to work to settle litigation over endangered species protections in the Delta.

Signatories to the agreement also committed to finalize the following elements:

- Up to 824,000 acre-feet of additional flow to and through the Delta in the ecologically important window of January through June. Target flow volumes vary depending upon how wet or dry a year is, and flows made available under the agreement will be above current regulatory conditions.
- 20,000 acres of additional floodplain habitat
- 20,000 acres of rice cropland inundated in ways to improve generation of microscopic plants and animals that provide fish food
- Over 5,000 acres of additional tidal wetlands and associated floodplain
- Nearly 3,300 acres of additional spawning, and instream and floodplain juvenile rearing habitat
- A new state multi-disciplinary restoration unit to accelerate permitting and implementation of habitat projects
- Annual reports informing adaptive management and describing status and trend of native fish populations and whether commitments by voluntary agreement parties are being met
- Triennial reports and public workshops in years three and six of the agreement to analyze progress
- A "red," "yellow," or "green" decision by state water quality regulators in year eight to determine if the voluntary agreements are achieving ecological objectives and should be continued, modified, or ended.

Water agencies in the Bay-Delta watershed that do not sign onto the approach outlined in the MOU would need to comply with regulatory requirements established by the State Water Board.

Implementation of the agreements outlined in the MOU is estimated to cost $2.6 billion, to be shared by water users and the state and federal governments. Water agencies will self-assess fees to support implementation of the voluntary agreements. Water users and the state will make flows available through a combination of reduced diversions, year-by-year purchases of water, long-term or permanent purchase of water, and voluntary fallowing of agricultural or pasture lands.

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Press release from Cal EPA:

Cal-EPA
California Environmental Protection Agency

Federal and state agencies along with Sacramento River Settlement Contractors (SRSCs) agreed this week on an approach to addressing Central Valley Project operations on the Sacramento River this year (mid-April through November). As a result of extreme weather brought on by climate change, California is experiencing one of the driest years within the driest decade on record. The Sacramento River watershed has been especially impacted with the current storage in Lake Shasta at 1.7 million acre-feet, compared with the average 3.5 million acre-feet for this time of year. The unprecedented conditions will result in significant environmental impacts to native fish, birds, and other wildlife, along with critically low water supply to agriculture, resulting in substantial fallowing of crop lands in the Sacramento Valley.

In order to respond to the dire circumstances and ensure the system can continue to serve multiple beneficial purposes that include water for cities and rural communities, farms, and fish and wildlife and their habitats in the Sacramento Valley, the agencies and SRSCs developed an approach to a proposed temperature management plan to be submitted by the Bureau of Reclamation to the State Water Resources Control Board for approval. This approach seeks to maintain winter-run Chinook salmon habitat for the longest period possible and creates a target for an average water release schedule of 4,500 cubic feet per second from Keswick Dam below Lake Shasta and a target for Wilkins Slough on the Sacramento River of more than 3,000 cubic feet per second. Given this, Shasta would have a projected end of September storage greater than a million acre-feet.

The agencies and SRSCs will coordinate weekly to adaptively manage the available water supplies, knowing dry years are challenging and unforeseen circumstances may arise this summer. As a part of this collaboration, the group will identify approaches to mitigating impacts to drought-related economic disruption and fish and wildlife impacts. In addition to the near-term actions, the agencies will continue to work together to support healthy rivers, farms and landscapes in the Sacramento Valley.

Agencies involved in this effort include the U.S. Bureau of Reclamation, which supplies the SRSC with water from the federal Central Valley Project, the California Environmental Protection Agency, the California Department of Water Resources, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife.

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MEMORANDUM

TO: SLDMWA Water Resources Committee Members and Alternates

FROM: Scott Petersen, Water Policy Director

DATE: April 4, 2022

RE: Update on Water Policy/Resources Activities

BACKGROUND

This memorandum is provided to briefly summarize the current status of various agency processes regarding water policy activities, including but not limited to the (1) Reinitiation of Consultation on Long-Term Operations of the Central Valley Project and State Water Project, including environmental compliance; (2) State Water Resources Control Board action; (3) San Joaquin River Restoration Program; (4) Delta conveyance; (5) Reclamation action; (6) Delta Stewardship Council action; (7) San Joaquin Valley Water Blueprint and San Joaquin Valley Water Collaborative Action Plan.

POLICY ITEMS

Reinitiation of Consultation on Long-Term Operations of the Central Valley Project and State Water Project

In August 2016, the Bureau of Reclamation and California Department of Water Resources (DWR) requested reinitiation of consultation with NOAA Fisheries, also known as National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) due to multiple years of drought, low populations of listed species, and new information developed as a result of ongoing collaborative science efforts over the last 10 years.

On Jan. 31, 2019, Reclamation transmitted its Biological Assessment to the Services. The purpose of this action is to continue the coordinated long-term operation of the CVP and SWP to optimize water supply delivery and power generation consistent with applicable laws, contractual obligations, and agreements; and to increase operational flexibility by focusing on nonoperational measures to avoid significant adverse effects to species.

The biological opinions carefully evaluated the impact of the proposed CVP and SWP water operations on imperiled species such as salmon, steelhead and Delta smelt. FWS and NMFS documented impacts and worked closely with Reclamation to modify its proposed operations to

minimize and offset those impacts, with the goals of providing water supply for project users and protecting the environment.

Both FWS and NMFS concluded that Reclamation's proposed operations will not jeopardize threatened or endangered species or adversely modify their critical habitat. These conclusions were reached for several reasons – most notably because of significant investments by many partners in science, habitat restoration, conservation facilities including hatcheries, as well as protective measures built into Reclamation's and DWR's proposed operations.

On Oct. 21, 2019, FWS and NMFS released their biological opinions on Reclamation's and DWR's new proposed coordinated operations of the CVP and SWP.

On Dec. 19, 2019, Reclamation released the final Environmental Impact Statement analyzing potential effects associated with long-term water operations for the CVP and SWP.

On Feb. 18, 2020, Reclamation approved a Record of Decision that completes its environmental review for the long-term water operations for the CVP and SWP, which incorporates new science to optimize water deliveries and power production while protecting endangered species and their critical habitats.

On January 20, 2021, President Biden signed an Executive Order: "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis", with a fact sheet[1] attached that included a non-exclusive list of agency actions that heads of the relevant agencies will review in accordance with the Executive Order. Importantly, the NOAA Fisheries and U.S. Fish and Wildlife Service Biological Opinions on the Long-Term Operation of the Central Valley Project and State Water Project were both included in the list of agency actions for review. It's unclear what this agency review will analyze, but staff will be engaged.

On September 30, 2021, Reclamation Regional Director Ernest Conant sent a letter to U.S. FWS Regional Director Paul Souza and NMFS Regional Administrator Barry Thom requesting reinitiation of consultation on the Long-Term Operation of the CVP and SWP. Pursuant to 50 CFR § 402.16, Reclamation indicated that reinitiation is warranted based on anticipated modifications to the Proposed Action that may cause effects to listed species or designated critical habitats not analyzed in the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) Biological Opinions, dated October 21, 2019. To address the review of agency actions required by Executive Order 13990 and to voluntarily reconcile CVP operating criteria with operational requirements of the SWP under the California Endangered Species Act, Reclamation and DWR indicated that they anticipate a modified Proposed Action and associated biological effects analysis that would result in new Biological Opinions for the CVP and SWP.

[1] https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/fact-sheet-list-of-agency-actions-for-review/

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Following this action, on October 20, 2021, the SLDMWA sent a letter to Reclamation Regional Director Ernest Conant requesting participation in the reinitiation of consultation pursuant to Section 4004 of the WIIN Act and in the NEPA process as either a Cooperating Agency or Participating Agency.

On February 26, 2022, the Department of the Interior released a Notice of Intent To Prepare an Environmental Impact Statement and Hold Public Scoping Meetings on the 2021 Endangered Species Act Reinitiation of Section 7 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project[2]. In response to this, on March 30, 2022, the SLDMWA submitted a letter[3] highlighting a few points for Reclamation to consider during while preparing the EIS.

After the draft EIS is completed, anticipated in 2023, Reclamation will publish a notice of availability (NOA) and request public comments on the draft EIS. After the public comment period ends, Reclamation will then develop the final EIS and anticipates making the final EIS available to the public in 2024. In accordance with 40 CFR 1506.11, Reclamation will not make a decision or issue a Record of Decision (ROD) sooner than 30 days after the final EIS is released. Reclamation anticipates the issuance of a ROD by October 2024.

Reclamation Manual

Documents out for Comment

Draft Policy

- There are currently no Policies out for review.

Draft Directives and Standards

- On March 18, 2022, Reclamation posted the final version of PEC 05-03, the Reclamation policy on the newly created aging infrastructure account and associated loan program. Recall that the Authority provided comments on a Family Farm Alliance letter sent last fall to Reclamation, outlining concerns with the earlier draft version of PEC 05-03.

  It appears to us that Reclamation has taken into account many comments in the final version of the policy with some clarifications to what they meant in the proposed policy verbiage. For some of our members, the main issue was the ability for a project beneficiary, other than the transferred work operator, that is responsible for paying their share of the costs associated with implementing extraordinary maintenance (XM) on a Reclamation facility (transferred or reserved work) to enter into a repayment contract to repay federal funding necessary for the XM work to be completed.

  In their final policy, Reclamation has determined that a project beneficiary of a transferred work operator can enter into a third party contract with Reclamation to repay its portion of XM costs to Reclamation under the aging infrastructure account and loan program. This can occur if the transferred work operator doing the XM work agrees to

[2] https://www.govinfo.gov/content/pkg/FR-2022-02-28/pdf/2022-04160.pdf
[3] Attached in Appendix.

accept the federal funding provided by Reclamation under the program and the project beneficiary agrees to enter into a repayment agreement to repay the funding to Reclamation. The other option also remains available for the transferred work operator to take out the entire XM loan itself and secure repayment from the project beneficiaries directly.

The only other potential concern was on the term of the loan. Reclamation policy says that up to a 30-year repayment term can be applied for without further information required, but to get a loan repayment between 30 and 50 years will require additional information to prove the need for such a term, including but not limited to an ability to pay analysis. Reasons for a longer term repayment can include strengthening the borrower's reserve account or low crop values affecting the affordability of a quicker repayment. We all concurred that the law did not require this, but that Reclamation made a policy call to require such documentation for greater than 30-year repayment terms.

Draft Facilities Instructions, Standards, and Techniques (FIST)

- There are currently no Facilities Instructions, Standards, and Techniques out for review.

Draft Reclamation Safety and Health Standards (RSHS)

- There are currently no Safety and Health Standards out for review.

Draft Reclamation Design Standards

- There are currently no Design Standards out for review.

State Water Resources Control Board (State Water Board) Activity

Documents out for Comment

Proposed Administrative Draft on Hexavalent Chromium Maximum Contaminant Level

Background

California Health and Safety Code section 116365(a) requires the State Water Board to establish an MCL at a level as close to the public health goal (PHG) as is technologically and economically feasible. The PHG is the concentration of a contaminant in drinking water that is not anticipated to cause or contribute to adverse health effects.

Hexavalent chromium has been detected in numerous drinking water sources in California. In 2011, the Office of Environmental Health Hazard Assessments (OEHHA) established a hexavalent chromium PHG of 0.02 parts per billion (ppb) based on cancer risk. In 2014, the California Department of Public Health established an MCL of 10 ppb (0.010 mg/L) for hexavalent chromium. In 2017, the Superior Court of California, Sacramento County, invalidated that MCL and directed the State Water Board to withdraw the current MCL and establish a new MCL.

As part of the development of the MCL, State Water Board staff have developed a draft proposal, which includes the regulation text, a staff report, and tables with cost estimates and occurrence information. The primary regulatory information contained in these documents is summarized below:

- The proposed hexavalent chromium MCL is 10 ppb.
- The proposed hexavalent chromium detection limit for purposes of reporting (DLR) is 0.05 ppb.

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- The proposed compliance schedule based on water system size is as follows:
  - Systems with 10,000 or more service connections will have a 2-year compliance schedule;
  - System with 1,000 to 10,000 service connections will have a 3-year compliance schedule;
  - Systems with less than 1,000 service connections will have 4-year compliance schedule.

The release of preliminary information on hexavalent chromium occurrence and costs of treatment at potential MCLs in advance of the formal rulemaking process will allow for additional public input prior to the development of the proposed regulation.

Document Availability

Draft determinations of hexavalent chromium occurrence and estimates of costs, along with the draft regulation text and a summary staff report are available for review on the Division of Drinking Water's Hexavalent Chromium MCL webpage at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Regulations.html.

Requests for copies of the administrative draft regulation text, summary staff report, and supporting figures, or other inquiries concerning development of the hexavalent chromium MCL may be directed to:

Melissa Hall, P.E.
Senior Water Resource Control Engineer
State Water Resources Control Board, Division of Drinking Water
1001 I Street, 17th Floor
Sacramento, CA 95814
Email: Melissa.Hall@Waterboards.ca.gov

Please identify the correspondence by using the State Water Board identifier, "Comment Letter – Hexavalent Chromium Workshop" in any inquiries or written comments.

Public Workshop

The State Water Resources Control Board (State Water Board) will hold two public workshops to present information and solicit public input regarding the proposed administrative draft of the hexavalent chromium maximum contaminant level (MCL). These workshops are not part of the formal rulemaking under the Administrative Procedure Act. The formal rulemaking process for the hexavalent chromium regulations will be begin later this year after receipt and consideration of comments on the administrative draft.

State Water Board staff will conduct two public workshops at the time and place described below. At the workshops, any person may present comments orally or in writing relevant to the subject described in this notice. The workshops will begin with a staff presentation summarizing the proposed administrative draft MCL, followed by an opportunity for public comment. During the comment period, members of the public will be allowed three minutes to provide oral comments, unless additional time is approved.

Tuesday, April 5, 2022 – 5:30 p.m. PDT

Thursday, April 7, 2022 – 9:00 a.m. PDT

Video and Teleconference Participation Only - No Physical Meeting Location

If you would like to watch the workshops without making oral comment, join at https://video.calepa.ca.gov/. This link will work for both workshop dates. If you would like to make oral comments during the workshop, join via Zoom using the link below:

- Tuesday, April 5, 2022 (Join at bit.ly/HexChrome_040522)
- Thursday, April 7, 2022 (Join at bit.ly/HexChrome_040722)

While a quorum of the State Water Board may be present, these workshops are for the public to provide comments. The Board will not take formal action. Additional information regarding State Water Board meetings, hearings, and workshops is available on the Board's website at https://www.waterboards.ca.gov/board_info/calendar/

Submission of Written Comments

Any interested person, or their representative, may submit written comments relevant to the subject described in this notice to the Clerk to the State Water Board. To facilitate timely identification and review of written comments, please use the subject line: "Comment Letter – Hexavalent Chromium Workshop".

The formal procedure for adopting regulation under the Administrative Procedure Act has not yet begun, and these workshops are not part of that process. However, input provided on the proposed administrative draft of the MCL may be used to inform the development of the regulation. In order for those comments to be considered during the development of the formal regulations package, written comments, regardless of the method of transmittal, must be received by the Clerk by 12:00 p.m. noon, Friday, April 29, 2022. Additional opportunities to comment on the administrative draft of the proposed drinking water standard will be available once the formal rulemaking process is initiated later this year.

Bay Delta Water Quality Control Plan Update

The State Water Board is currently considering updates to its 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("Bay Delta Plan") in two phases (Plan amendments). The first Plan amendment is focused on San Joaquin River flows and southern Delta salinity ("Phase I" or "San Joaquin River Flows and Southern Delta Salinity Plan Amendment"). The second Plan amendment is focused on the Sacramento River and its tributaries, Delta eastside tributaries (including the Calaveras, Cosumnes, and Mokelumne rivers), Delta outflows, and interior Delta flows ("Phase II" or "Sacramento/Delta Plan Amendment").

During the December 12, 2018 Water Board Meeting, the Department of Water Resources ("DWR") and Department of Fish and Wildlife presented proposed "Voluntary Settlement Agreements" ("VSAs") on behalf of Reclamation, DWR, and the public water agencies they serve

to resolve conflicts over proposed amendments to the Bay-Delta Plan update.[4] The State Water Board did not adopt the proposed VSAs in lieu of the proposed Phase 1 amendments, but as explained below, directed staff to consider the proposals as part of a future Delta-wide proposal.

Phase 1 Status: The State Water Board adopted a resolution[5] to adopt amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and adopt the Final Substitute Environmental Document during its December 12, 2018 public meeting.

Phase 2 Status: In the State Water Board's resolution adopting the Phase 1 amendments, the Water Board directed staff to assist the Natural Resources Agency in completing a Delta watershed-wide agreement, including potential flow and non-flow measures for the Tuolumne River, and associated analyses no later than March 1, 2019. Staff were directed to incorporate the Delta watershed-wide agreement as an alternative for a future, comprehensive Bay-Delta Plan update that addresses the reasonable protection of beneficial uses across the Delta watershed, with the goal that comprehensive amendments may be presented to the State Water Board for consideration as early as possible after December 1, 2019. As the State Water Board further refines this update, there will be opportunity for public comment.

The effort has made progress since an initial framework was presented to the State Water Board on December 12, 2018.

On March 1, 2019, the California Department of Water Resources and the Department of Fish and Wildlife submitted documents[6] to the State Water Board that reflect progress since December to flesh-out the previously submitted framework to improve conditions for fish through targeted river flows and a suite of habitat-enhancing projects including floodplain inundation and physical improvement of spawning and rearing areas.

Since the March 1 submittal, work has taken place to develop the package into a form that is able to be analyzed by State Water Board staff for legal and technical adequacy. On June 30, 2019, a status update with additional details was submitted to the Board for review. Additionally, on February 4, 2020, the State team released a framework for the Voluntary Agreements to reach "adequacy", as defined by the State team.

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[4] Available at https://water.ca.gov/-/media/DWR-Website/Web-Pages/Blogs/Voluntary-Settlement-Agreement-Meeting-Materials-Dec-12-2018-DWR-CDFW-CNRA.pdf.

[5] Available at https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/rs2018_0059.pdf.

[6] Available at http://resources.ca.gov/docs/voluntary-agreements/2019/Complete_March_1_VA_Submission_to_SWRCB.pdf

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Further work and analysis is needed to determine whether the agreements can meet environmental objectives required by law and identified in the State Water Board's update to the Bay-Delta Water Quality Control Plan.

On December 8, the State Water Resources Control Board heard an information item on upcoming actions to update and implement the Water Quality Control Plan for the San Francisco Bay Sacramento San Joaquin Delta. During this presentation, State Water Board staff provided the following updates on various activities:

Biological Goals

Past Activities

- January 2019 – Independent Science Advisory Panel: Concepts and Ideas for Developing Biological Goals for the Bay-Delta Plan
- September 2019 – Draft Initial Biological Goals for the LSJR for public comment

Current Activities

- Completion of revisions based on public comment to produce a draft Final Biological Goals Report

Future Activities

- Winter/Spring 2022 – Release draft Final Biological Goals Report
- Winter/Spring 2022 – Public Workshop & comment
- Summer 2022 – Board consideration of adoption

LSJR Flow/SD Salinity Implementation Next Steps Assuming Regulation Path (Phase 1)

Spring 2022 – Spring 2023

- Initiate CEQA process
- Draft environmental document and public comment
- Notice of draft regulation
- Final environmental document

Summer 2023

- State Water Board consideration of approval
- Notice of final regulation
- Submission to Office of Administrative Law

Sac/Delta Update: Key Milestones

- Early 2022: expected submittal of proposed voluntary agreement
- Winter – Summer 2022: development of Scientific Basis Report for any voluntary agreement, including public review and comment
- Fall 2022: Draft Staff Report public review and comment
- Winter 2023: Public workshop on Draft Staff Report
- Early Fall 2023: Response to comments and development of proposed final changes to the Bay-Delta Plan
- Late Fall 2023: Board consideration of adoption

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Relatedly, on March 29, 2022, members of the Newsom Administration joined federal and local water leaders in announcing the signing of a memorandum of understanding[7] that advances integrated efforts to improve ecosystem and fisheries health within the Sacramento-San Joaquin Bay-Delta. State and federal agencies also announced an agreement[8] specifically with the Sacramento River Settlement Contractors on an approach for 2022 water operations on the Sacramento River.

Both announcements represent a potential revival of progress toward what has been known as "Voluntary Agreements," an approach the Authority believes is superior to a regulatory approach to update the Bay-Delta Water Quality Control Plan.

The broader MOU outlines terms for an eight-year program that would provide substantial new flows for the environment to help recover salmon and other native fish. The terms also support the creation of new and restored habitat for fish and wildlife, and provide significant funding for environmental improvements and water purchases, according to a joint news release from the California Natural Resources Agency and the California Environmental Protection Agency (CalEPA). Local water agency managers signing the MOU have committed to bringing the terms of the MOU to their boards of directors for their endorsement and to work to settle litigation over engaged species protections in the Delta.

CalEPA issued a second announcement on the agreement with the Sacramento River Settlement Contractors (SRSCs). In that agreement, state and federal agencies, and the SRSCs, have developed an approach to a proposed temperature management plan to be submitted by the Bureau of Reclamation to the State Water Resources Control Board for approval. This approach seeks to maintain winter-run Chinook salmon habitat for the longest period possible and creates a target for an average water release schedule of 4,500 cubic feet per second from Keswick Dam below Lake Shasta and a target for Wilkins Slough on the Sacramento River of more than 3,000 cubic feet per second. Given this, Shasta would have a projected end of September storage greater than a million acre-feet.

Delta Conveyance

2022 Public Engagement Outlook

The upcoming year will mark an important milestone in the proposed Delta Conveyance Project planning process with the anticipated release of the Draft Environmental Impact Report (EIR) for public review and comment in mid-2022. To outline the public outreach and engagement activities planned for 2022, the Department of Water Resources (DWR) has put together a plan that details these actions intended to improve public access to information and participation in the public review process. Read more about the plan here.

[7] Available at https://resources.ca.gov/-/media/CNRA-Website/Files/NewsRoom/Voluntary-Agreement-Package-March-29-2022.pdf

[8] Available at https://calepa.ca.gov/2022/03/29/informational-statement-state-federal-agencies-and-sacramento-river-settlement-contractors-agree-on-approach-for-2022-water-operations-on-the-sacramento-river/

NEW Informational Webinars Materials Now Available

As follow-up to the four informational webinars held between July and September 2021 to provide background information related to preparation of the Draft EIR for the proposed Delta Conveyance Project, DWR has prepared and published digital articles highlighting the information provided during each webinar:

- NEW: Operations of the State Water Project and Delta Conveyance
- NEW: Climate Change
- NEW: Environmental Justice
- Fisheries *(published in November 2021)*

As a reminder, all other information and resources from the webinars, including the presentations (in English and Spanish), videos (in English and Spanish) and a comprehensive Frequently Asked Questions document can be found on the project website.

Water Blueprint for the San Joaquin Valley Activity

Background

The Water Blueprint for the San Joaquin Valley (Blueprint) is a non-profit with a broad and evolving group of stakeholders, working to better understand shared goals for water solutions that support environmental stewardship with the needs of communities and industries throughout the San Joaquin Valley. The Blueprint has engaged with stakeholders to try and ensure that everyone has safe, reliable, and affordable access to water for drinking, supporting their farms and communities and a thriving ecology.

The SJV faces significant impacts to its long-term economic, social, and environmental health if nothing is done to address water scarcity, as highlighted in Phase I of Dr. David Sunding's Economic Impact Assessment (EIA) https://www.waterblueprintca.com.

The board, large group and committees continue to meet and pursue the mission of Blueprint, including outreach, technical support and working in collaboration with other stakeholders.

Mission/Vision: The Blueprint's new board of 20 directors and other Blueprint participants held a strategic planning session to create an updated mission and vision for the San Joaquin Valley Water Blueprint. This aligns with the goals of creating a comprehensive plan that, if implemented among partners, would result in a long-term water balance in the San Joaquin Valley in a way that minimizes land retirement of agricultural lands and allows the region's economy to thrive under future conditions. It is to be developed in collaboration with key interest groups, public agencies, and elected officials so that all stakeholders could advocate for a single Blueprint. This valley-wide plan would focus on three categories: 1) New/improved regional infrastructure recommendations for both short (less than 10 years) and long (10+ years) term; 2) Approach for capturing water in the Delta; and 3) Partnering on land repurposing efforts (including a recommendation on total amount and timing).

Strategic Plan: An initial Strategic Planning session was on March 21st, the strategic plan was broken into two areas of focus. The first, centers on the mission, vision, and our collective expectations of the Blueprint. The second session will delve into determining the Blueprint's goals for creating solutions to the problems previously identified. For the goals developed, we will identify quantifiable objectives, timelines for action and systems of accountability.

Technical Committee: Committee is drafting criteria for naming and implementing high priority projects. This effort is being discussed to dovetail with the CAP process underway. The Board has engaged MBK for additional evaluation of the Delta flood flows and evaluate the priority allocation of such flows.

Blueprint continues to engage with Central Valley stakeholders regarding opportunities to construct infrastructure, balanced approach to water resources, low interest loans for farmers unable to farm and focus on inter-regional conveyance and habitat restoration.

San Joaquin Valley Water Collaborative Action Program (SJVW CAP)

CAP produced a Phase I Framework with solution set elements recommended, the five CAP Work Groups and working to finalize the necessary language and understanding for evaluating Delta water supplies and land fallowing. Once agreed upon the CAP will look to implement phase II.

By September 2022 , the CAP intends to complete the following:

- An initial list of projects that are consistent with the CAP criteria that can improve water supplies. These projects will be supported by the CAP participants.
- Review and analysis of updated Delta study by the PPIC.
- Workplan for activities necessary to finish the 2023 comprehensive plan to reach sustainability by 2040.

By September 2023:

- The in-Valley and Delta opportunities assessments.
- Regional action plan for strategic land repurposing
- List of actions and projects that will achieve a water balance by 2040.

APPENDIX

VI.

MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

March 29, 2022

This "Memorandum of Understanding" (MOU) is signed by the Parties, through their executive leadership, to advance the attached Term Sheet for Voluntary Agreements.

RECITALS

A. The State Water Resources Control Board (State Water Board) and the nine regional water quality control boards administer the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 *et seq*.) (Porter-Cologne Act) to achieve an effective water quality control program for the state and are responsible for the regulation of activities and factors that may affect the quality of the waters of the state.

B. The State Water Board is authorized to adopt a water quality control plan in accordance with the provisions of Water Code sections 13240 through 13244, insofar as they are applicable (Wat. Code, § 13170).

C. The State Water Board has adopted a Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). It first adopted the plan in 1978, amending it in 1995, 2006, and 2018. In 2008, it initiated its periodic review and began proceedings to update the current Bay-Delta Plan.

D. The Bay-Delta Plan designates beneficial uses of the waters of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta watershed), establishes water quality objectives for the protection of those beneficial uses, and establishes a program of implementation to implement those objectives.

E. In May 2017 then-Governor Edmund G. Brown, Jr. issued "Principles for Voluntary Agreements" stating in relevant part: "The goal is to negotiate durable and enforceable Voluntary Agreements that will be approved by applicable regulatory agencies, will represent the program of implementation for the water quality objectives for the lower San Joaquin and Sacramento Rivers and Delta, will forego an adjudicatory proceeding related to water rights, and will resolve disputes among the parties regarding water management in the Sacramento-San Joaquin-Bay-Delta Watershed."

F. Interested parties, including state and federal agencies, municipal and agricultural water suppliers, and others undertook extensive efforts beginning in 2017 to

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negotiate Voluntary Agreements. On December 12, 2018, the Directors of California Department of Fish and Wildlife (CDFW) and California Department of Water Resources (CDWR) appeared before the State Water Board and presented the results of the negotiation process to date. Specifically, the Directors presented a "Framework Proposal for Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan" (Framework Proposal).

G. On December 12, 2018, the State Water Board adopted Resolution No. 2018-0059 to update the 2006 Bay-Delta Plan. First, it amended the water quality objectives for the protection of fish and wildlife beneficial uses in the Lower San Joaquin River (LSJR) and its three eastside tributaries, the Stanislaus, Tuolumne, and Merced Rivers, and agricultural beneficial uses in the southern Delta. It also amended the program of implementation for those objectives. It approved and adopted the Substitute Environmental Document (SED) for the Lower San Joaquin River. Ordering paragraph 7 of Resolution No. 2018-0059 states:

> "The State Water Board directs staff to provide appropriate technical and regulatory information to assist the California Natural Resources Agency in completing a Delta watershed-wide agreement, including potential flow and non-flow measures for the Tuolumne River, and associated analyses no later than March 1, 2019. State Water Board staff shall incorporate the Delta watershed-wide agreement, including potential amendments to implement agreements related to the Tuolumne River, as an alternative for a future, comprehensive Bay-Delta Plan update that addresses the reasonable protection of beneficial uses across the Delta watershed, with the goal that comprehensive amendments to the Bay-Delta Plan across the Delta watershed may be presented to the State Water Board for consideration as early as possible after December 1, 2019."

H. In January 2019, Governor Gavin Newsom confirmed his intention to complete the efforts to reach Voluntary Agreements. On March 1, 2019, the Directors of CDFW and CDWR entered into a "Planning Agreement Proposing Project Description and Procedures for the Finalization of the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan" (Planning Agreement).

I. After evaluation of the Planning Agreement, the Parties developed the "Term Sheet for the Voluntary Agreements Program to Update and Implement the Bay-Delta Water Quality Control Plan" (Term Sheet, as attached).

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UNDERSTANDINGS

1. Intent of the Signatories

1.1. In the Bay-Delta watershed, a comprehensive approach to managing habitat, flow, and other factors is required to protect native fish and wildlife species, while concurrently protecting water supply reliability, consistent with the legal requirement of providing reasonable protection for all beneficial uses.

A. The Bay-Delta Plan requires flow measures, and while creating opportunities for other actions, it does not require measures to directly address other limiting factors, including invasive species, ocean and tidal conditions, physical modifications of channels and wetlands, and loss of floodplain habitat.

B. The Parties seek to take a comprehensive approach to integrate flow and non-flow measures, including habitat restoration, subject to ongoing adaptive management based on a science program. The attached Term Sheet describes a Voluntary Agreements Program to effect this comprehensive approach.

1.2. The Parties intend to cooperate to submit the Term Sheet to the State Water Board, so that it may consider including the Voluntary Agreements Program, consistent with Resolution 2018-0059, as the pathway to implement the Narrative Salmon Objective and a proposed Narrative Viability Objective for the VA Parties. The Parties further intend to undertake a process to assist the State Water Board in its independent analysis of that pathway.

1.3. The Parties intend to continue work on these further related actions:

A. Plan for implementation of flow and non-flow measures in advance of the State Water Board's action on the alternative described in the Term Sheet, subject to any applicable requirements for project-specific environmental review or regulatory approval;

B. Continue to work toward resolution of litigation related to the 2018 Bay-Delta Plan, the 2019 Biological Opinions for the State Water Project and Central Valley Project, the 2020 Incidental Take Permit for the State Water Project, including Interim Operations, Clean Water Act section 401 certifications, and other regulatory

authorizations and proceedings that relate to the actions described in the Term Sheet;

C. Develop the Voluntary Agreements in a proposed complete and legally appropriate and binding form.

1.4. The Parties recognize that State Water Board will be the lead agency under the California Environmental Quality Act (CEQA) in preparation of the Substitute Environmental Document (SED) to update the Bay-Delta Plan. The Parties intend to propose that CDFW, CDWR, and other public agency Parties will participate in the environmental review as responsible and/or trustee agencies, with respect to the Voluntary Agreements Program. The Parties expect that the SED will include at least programmatic environmental review of all elements of the Voluntary Agreements as reflected in the Term Sheet, and that the Parties responsible to implement measures will undertake project-specific environmental review as needed. The Parties recognize that execution of Voluntary Agreements will not occur until required environmental review has been completed and that the ultimate terms in those agreements will reflect the results of that review.

2. General Provisions.

2.1. This MOU is signed by executive leadership for the Parties. For each party, implementation is conditioned upon and subject to review and approval by the decisional body of the Party, if required. By signing this MOU, the Parties agree to advance the VA Program as reflected in the Term Sheet to the decisional body, if any, for consideration as outlined in the Term Sheet.

2.2. The Parties reserve judgment whether they each will sign or otherwise support the Voluntary Agreements and do not at this time, commit to any actions described in the Term Sheet. They will decide whether or not to commit to take these actions after the State Water Board adopts a SED and resolution to update the Bay-Delta Plan consistent with Resolution 2018-0059.

2.3. Nothing in this MOU is intended to modify or supersede the independent authority or discretion of any Party. Nothing in this MOU is intended to exercise, modify, or supersede the regulatory authority of any Party that is a regulatory agency or any subordinate agency of such a Party.

2.4. Nothing in this MOU is intended to be a pre-decisional commitment of resources. The Parties recognize that while this Memorandum of Understanding is the

product of significant effort and collaboration to identify a proposed approach that the Parties believe will prove to be successful and consistent with all applicable regulatory and other obligations, any commitment to implement the flow and non-flow measures described in the Term Sheet is dependent on all necessary environmental review and regulatory approvals. Accordingly, the Parties acknowledge that nothing in this MOU or the attached Term Sheet can meaningfully foreclose any public agency's consideration of alternatives including not proceeding with any aspect of the flow and non-flow measures described herein. This MOU is not subject to CEQA consistent with CEQA Guidelines section 15004.

2.5. It is the intent of the Parties to encourage the possibility that additional entities, at a later date, will sign this MOU to offer contributions that would enhance the effectiveness of the VA Program described in the Term Sheet. A tributary or other water user group not party to the MOU should notify the Parties if it proposes to make contributions of flow, habitat and/or funding that are additive to the VA Program and commensurate with contributions by the original Parties. If appropriate, the entity shall sign this MOU as a separate counterpart, and the additive contributions shall be incorporated into the Term Sheet.

2.6. This MOU may be executed in separate counterparts, each of which when so executed and delivered will be an original. All such counterparts will together constitute but one and the same instrument.

2.7 The MOU expresses the mutual agreement of the Parties to advance the VA Program as reflected in the attached Term Sheet for consideration by their respective decisional bodies, if required.

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

CALIFORNIA NATURAL RESOURCES AGENCY

3/29/22

By: Wade Crowfoot — Date

Secretary of the Natural Resources Agency

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

March 29, 2022

By: Jared Blumenfeld — Date

Secretary for Environmental Protection

CALIFORNIA DEPARTMENT OF WATER RESOURCES

Karla Nemeth 3-29-22

By: Karla Nemeth — Date

Director

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

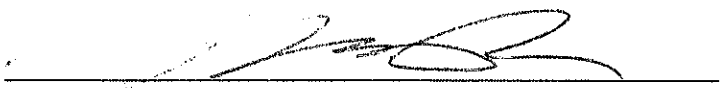
March 29, 2022

By: Charlton Bonham — Date

Director

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

YUBA WATER AGENCY



3/29/22

By: Willie Whittlesey
Its: General Manager

Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

GARDEN HIGHWAY MUTUAL WATER COMPANY

By: Nicole Van Vleck
Its: Vice President

3/21/22
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: Adel Hagekhalil

Its: General Manager and Chief Executive Officer

3-29-2022
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

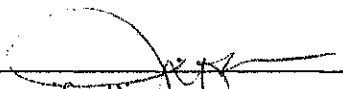
RIVER GARDEN FARMS

By: Roger Cornwell
Its: General Manager

3 · 29 - 2022
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

STATE WATER CONTRACTORS



3/29/22

By: Jennifer Pierre
Its: General Manager

Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

SUTTER MUTUAL WATER COMPANY

William Henle — March 24, 2022

By: William Henle
Its: Board President

Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

GLENN-COLUSA IRRIGATION DISTRICT

By: Thaddeus Bettner
Its: General Manager

MARCH 29, 2022
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

WESTLANDS WATER DISTRICT

Thomas W Birmingham
By: Thomas Birmingham
Its: General Manager

3/29/2022
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

REGIONAL WATER AUTHORITY

By: Michelle Banonis
Its: Manager of Strategic Affairs

3/29/22
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

KERN COUNTY WATER AGENCY

Th J. McCy — 3/29/22

By: Thomas McCarthy — Date
Its: General Manager

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

U.S. BUREAU OF RECLAMATION – CALIFORNIA-GREAT BASIN REGION

By: Ernest Conant
Its: Regional Director

3/29/2022
Date

SIGNATORY PARTIES TO THE
MEMORANDUM OF UNDERSTANDING ADVANCING A TERM SHEET FOR THE VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN, AND OTHER RELATED ACTIONS

WESTERN CANAL WATER DISTRICT

Ted Trimble — 3/29/2022

By: Ted Trimble — Date
Its: General Manager

TERM SHEET FOR VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN

March 29, 2022

Parties signatory to the attached "Memorandum of Understanding" (MOU) propose this "Term Sheet (Term Sheet) for the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan" (Bay-Delta Plan).

1. Purpose.

1.1. Subject to Section 13, this Term Sheet states the essential terms that the Parties will use to finalize the Voluntary Agreements (VAs). The VAs will consist of three types of agreements described in Section 2.2 below.

1.2. The VAs will state actions, together with other measures in the Bay-Delta Plan, necessary to implement two water quality objectives in the plan related to protection of native fishes.

A. These objectives are: (1) the existing narrative objective that provides for water quality conditions, together with other measures in the watershed, to achieve doubling of the reference salmon population (1967-1991) (Narrative Salmon Objective); and (2) a new narrative objective to achieve the viability of native fish populations (Narrative Viability Objective).

B. The Parties propose that the State Water Resources Control Board (State Water Board) adopt the following Narrative Viability Objective:

"Maintain water quality conditions, including flow conditions in and from tributaries and into the Delta, together with other measures in the watershed, sufficient to support and maintain the natural production of viable native fish populations. Conditions and measures that reasonably contribute toward maintaining viable native fish populations include, but may not be limited to, (1) flows that support native fish species, including the relative magnitude, duration, timing, temperature, and spatial extent of flows, and (2) conditions within water bodies that enhance spawning, rearing, growth, and migration in order to contribute to improved viability. Indicators of viability include population abundance, spatial extent,

distribution, structure, genetic and life history diversity, and productivity.* Flows provided to meet this objective shall be managed in a manner to avoid causing significant adverse impacts to fish and wildlife beneficial uses at other times of the year.

* The actions the State Water Board and other agencies expect to take to implement this objective are described in section [insert number] of this Plan's Program of Implementation."

C. The commitments in the VAs will provide the participating parties' share, during implementation of the VAs, to contribute to achieving the Narrative Salmon Objective by 2050.

1.3. The VAs will include new flow and other measures, including habitat restoration, subject to adaptive management pursuant to the Governance and Science Programs stated in Sections 9 and 10 below.

1.4. The Parties will request that the State Water Board consider and approve an updated Bay-Delta Plan that includes the VAs as a pathway within the Program of Implementation that, along with other measures required in the plan, implements the Narrative Salmon Objective and Narrative Viability Objective.

A. This Term Sheet will be submitted to the State Water Board pursuant to Resolution 2018-0059 (Ordering Paragraph 7), which states:

"The State Water Board directs staff to provide appropriate technical and regulatory information to assist the California Natural Resources Agency in completing a Delta watershed-wide agreement, including potential flow and non-flow measures for the Tuolumne River, and associated analyses no later than March 1, 2019. State Water Board staff will incorporate the Delta watershed-wide agreement, including potential amendments to implement agreements related to the Tuolumne River, as an alternative for a future, comprehensive Bay-Delta Plan update that addresses the reasonable protection of beneficial uses across the Delta watershed, with the goal that comprehensive amendments to the Bay-Delta Plan across the Delta watershed may be presented to the State Water Board for consideration as early as possible after December 1, 2019."

B. The Parties request that the Program of Implementation in the updated Bay-Delta Plan include the VAs as a pathway to implement the Narrative Salmon Objective and Narrative Viability Objective, on a finding that the VA pathway in conjunction with the regulatory pathway described in section 1.4(C) will provide reasonable protection of the associated beneficial uses as documented in the SED. The Parties further request that the State Water Board consider the VAs as an alternative to be analyzed in the Substitute Environmental Document (SED) as described in Resolution 2018-0059.

C. The Parties understand that the State Water Board will include in the Program of Implementation an additional pathway to implement the Narrative Salmon Objective and Narrative Viability Objective. This pathway will apply to tributaries, or persons or entities, not covered by a VA. In this pathway, the State Water Board will use its legal authorities and public processes to establish conditions to require flows and other measures by persons or entities not covered by a VA to provide reasonable protection of beneficial uses associated with the Narrative Salmon Objective and Narrative Viability Objective. The Parties request that the Program of Implementation provide an opportunity for water right holders not covered by a VA to, at a later date, commit to contributions to implement the Narrative Salmon Objective and Narrative Viability Objective under the VAs, as approved by the State Water Board.

D. The Parties further request that the Program of Implementation include:

(i). A summary of the VAs as reflected by this Term Sheet, including a summary of any early implementation before the Effective Date of the VAs (defined in Section 7.1);

(ii). A Strategic Plan for implementation of the VAs, including adaptive management of flow and habitat restoration measures, pursuant to Section 9.3;

(iii). Obligations of the State Water Board, the Parties and others to implement their commitments, pursuant to Section 2.2 and Water Code section 13247;

(iv). A Governance Program including Annual and Triennial Reports pursuant to Section 9;

(v). A Science Program pursuant to Section 10; and

(vi). Procedures for renewal, modification, and extension of the VAs pursuant to Sections 7.4 through 7.5.

2. Structure.

2.1. The parties that sign the attached MOU are "VA Parties" for the purpose of this Term Sheet.

2.2. The VAs will consist of three types of agreements. These are:

A. Global Agreement that will describe the VAs' structure, funding, Science Program, and Governance Program, to be signed by all VA Parties;

B. Implementing Agreements, each of which will state in detail the measures for a participating tributary, the Sacramento River mainstem, or the Delta, as applicable, each to be signed by those VA Parties with responsibility for implementation of that agreement, including the California Department of Fish and Wildlife (CDFW) and the California Department of Water Resources (CDWR); and

C. Government Code Section 11415.60 Agreements, each of which will state the specific obligations of those VA Parties responsible for implementation of an Implementing Agreement, along with related regulatory enforcement mechanisms related to flows, habitat restoration and other assurances, each to be signed by such VA Parties and the State Water Board. Each agreement will specify any contingencies outside the reasonable control of the responsible VA Party related to performance of a measure.

2.3. The VAs will incorporate flow measures (including any refill criteria and other accounting provisions) as stated in Appendix 1, habitat restoration measures as stated in Appendix 2, funding as stated in Appendix 3, and expected outcomes and metrics as stated in Appendix 4.

3. **Relationship to Prior Proposed Agreements.** This Term Sheet supersedes all previously proposed VA agreements, VA frameworks and/or VA planning documents.[1]

4. **Additional Delta Outflows, Tributary Flows, and Habitat.**

4.1. 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.

4.2. The habitat restoration measures described in Appendix 2 will be additive to physical conditions and regulatory requirements existing as of December 2018, when the State Water Board adopted Resolution 2018-0059. Implementation of such measures by Parties after that date, but prior to execution of the VAs, will be considered as contributing towards implementation of the Narrative Salmon Objective and Narrative Viability Objective.

5. **Contributions of Tributary Flows, Delta Outflows, and Habitat Restoration.** The VAs will result in flow and non-flow measures as shown in Appendices 1 and 2 respectively.

5.1. With respect to tributary flows and Delta outflows shown in Appendix 1:

A. These flows may be shaped in timing and seasonality, to test biological hypotheses and respond to hydrologic conditions while reasonably protecting beneficial uses. Such shaping will occur through the Governance Program stated in Section 9 below, and subject to the Implementing Agreements and applicable regulatory requirements. The Parties agree a portion of the volumes of water in Appendix 1 will be managed with a priority of providing increased flows in the months of April and May in D, BN, and AN water years to replicate average outflow resulting from the I/E ratio in the 2009 salmonid BiOp as modeled.

[1] The State signatories stand by the funding commitments contained in the March 2019 Proposed Action as scaled to reflect an 8-year VA term, see Appendix 3.

B. Such shaping will occur through the Governance Program stated in Section 9 below, and subject to the Implementing Agreements and applicable regulatory requirements.

C. Flow measures described in Appendix 1 as "Water Purchase Program" or other water purchases will be obtained through a free-market program for single-year transfers, subject to applicable law. The Parties acknowledge that, if the water purchases do not occur, then the VAs will be subject to the provisions of Section 7.4(B)(ii) or (iii).

5.2. The Global Agreement and Implementing Agreements will include appropriate provisions that VA Parties (including regulatory agencies) will expedite and coordinate permitting of flow and non-flow measures, consistent with applicable laws.

A. Each Party acknowledges that a metric for success in the voluntary agreements would be the completion of identified restoration projects.

B. CDFW will apply innovative uses of its Lake and Streambed Alteration and California Endangered Species Act authorities to expedite permitting of these restoration projects.

C. The Parties anticipate that the State Water Board will complete and employ its proposed general order for Clean Water Action section 401 Water Quality Certification and waste discharge requirements for restoration projects to expedite permitting of these restoration projects.

D. The United States Fish and Wildlife Service and National Marine Fisheries Service will use regulatory tools for restoration to expedite permitting of these restoration projects.

E. California will establish a multi-disciplinary restoration unit of 8 full-time specialists to track, permit and implement these restoration projects. This team will regularly report to Secretaries for Environmental Protection and Natural Resources.

F. The relevant state and federal agencies involved in implementation of these restoration projects will convene with other VA Parties as part of the governance to update on project delivery.

G. The relevant state and federal agencies involved in implementation of the VAs' restoration projects will update the California Governor's Office regularly on status of permitting these projects.

6. **Funding**. The VAs will include the funding commitments shown in Appendix 3. Those commitments will include appropriate assurances of performance, as provided in the Global Agreement. Any Global Agreement executed by the U.S. Fish and Wildlife Service, the U.S Bureau of Reclamation or National Marine Fisheries Service will be subject to appropriations.

7. **Effectiveness, Enforcement, Assurances, and Termination or Renewal.**

7.1. The VAs will become effective on the date the Government Code section 11415.60 Agreements are executed. The VAs will remain in effect for a term of 8 years after the Effective Date. For purpose of this Term Sheet, a numbered "Year" refers to the year after the Effective Date.

A. The Parties with permitting authority recognize their affirmative obligation to move as expeditiously as possible to complete permitting processes prior to Year 1.

B. The Parties will request and expect the State Water Board include in the Program of Implementation a process for the Executive Director to recognize unanticipated permitting delays prior to Year 1 and to defer review and performance milestones within the Program of Implementation accordingly to better align the VA implementation with State Water Board's processes. In considering any adjustments under this paragraph, the delay must result from actions or inactions that were beyond the control of the Parties.

7.2. The State Water Board will have authority to enforce the flow and non-flow measures relying on Water Code authorities, as provided in the Government Code Section 11415.60 Agreements. The agreements will specify responsible parties and conditions precedent for implementation and related liability for enforcement. The Parties will be accountable to secure their individual funding commitments specified in Appendix 3, as provided in the Global Agreement. It is anticipated that neither the U.S.

Fish and Wildlife Service, nor the U.S. Bureau of Reclamation, nor National Marine Fisheries Service will be participating through a Government Code 11415.60 Agreement.

7.3. Through the Government Code Section 11415.60 Agreements, the State Water Board will provide assurances that the VAs state the total obligations of the VA Parties to implement the Narrative Salmon Objective and Narrative Viability Objective for the term of the VAs, subject to Section 7.4.

7.4. The Parties propose that, in Year 6, the State Water Board will initiate the process to evaluate and determine the implementation pathway for VA parties after Year 8. The Parties also propose that the Program of Implementation include a process to incorporate consideration of the following information:

- The VA science program's synthesis of the most current science and analyses of the effects of the VAs' implementation, consistent with Appendix 4;
- Past, present, and probable future beneficial uses of water;
- Environmental characteristics of the Bay-Delta watershed, including the quality of water available thereto;
- Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the Bay-Delta watershed; and
- Economic considerations.

At Year 8, the State Water Board will consider potential amendments to the Program of Implementation under the "green"-"yellow"-"red" structure described in Section 7.4.B, which will be informed by the consideration of the scientific analysis and information submitted pursuant to section 7.D. If under the "red" option in Section 7.4B(iii), the VA Parties may present new agreements to fulfill the purpose stated in Section 1.4(B), or the State Water Board will begin implementing the Bay Delta Plan through the additional pathway described in Section 1.4(C).

A. In Year 6, the State Water Board will issue a notice to initiate the process. It will hold a public informational workshop, at which time the VA Parties will present on their second Triennial Reports and Strategic Plan for Years 6-9. Based on these reports and the

information gathered by the VA Science Committee (as described in Appendix 4), the VA Parties, through the Systemwide Governance Committee, will recommend to the State Water Board whether the VAs should continue for another term with limited modification or if more significant changes to the VA terms are needed. The State Water Board will consider the Systemwide Governance Committee's recommendation and all public comments on the progress of VA implementation, technical information, and the implementation pathway in Year 8.

B. Following the workshop and after consideration of all comments, the State Water Board will distribute a draft proposed pathway to be implemented for VA Parties after Year 8. In summary form, it will select from three options:

(i). **Green** – The VAs are substantially achieving the required metrics as described in Appendix 4; and the ecological outcomes analysis described there supports the conclusion that continuing the VA, together with other actions in the Bay-Delta Plan, will result in attainment of the narrative objectives. If so, the VA Parties will continue implementation of VAs without any substantial modification in terms, except for necessary changes to provide for funding and other measures necessary to continue the VAs. Necessary updates to the VA terms (if any) will be determined and the process to renew the VAs will be initiated so that renewed VAs are in place at Year 9.

(ii). **Yellow** – The VAs are meeting a significant number of metrics as described in Appendix 4; and the ecological outcomes analysis as described there supports the conclusion that continuing the VAs, together with other actions in the Bay-Delta Plan, will result in attainment of the narrative objectives, but some modifications are needed. If so, the VA Parties will continue implementation with substantive modification in terms. The process to modify the VA terms to address deficiencies will be initiated. Concurrently, the State Water Board will consider alternative means to address deficiencies in achieving the metrics as described in Appendix 4.

(iii). **Red** – A new pathway is required because VAs are not achieving required metrics as described in Appendix 4; and the ecological outcomes analysis as described there does not support the conclusion that continuing the VAs, together with other actions in the Bay-Delta Plan, will result in attainment of the narrative objectives. New agreements will be negotiated, or the Bay-Delta Plan's Program of Implementation will be implemented through the State Water Board's regulatory authorities and the VA Parties reserve all rights to fully participate in the related regulatory processes, and potential remedies related thereto.

C. Factors the State Water Board will consider in selecting one of the three options from subsection (B), will include, but not necessarily be limited to:

(i). Whether permits required for implementation were pursued and available within a reasonable timeframe.

(ii). Whether VA Parties timely and fully performed VA flow asset commitments.

(iii). Whether the Triennial Reports analyze progress across the Delta watershed, provide considerations for updating the Strategic Plan, include considerations for updating the VA flow and non-flow measures, and are timely submitted to the State Water Board to inform its triennial review process.

(iv). Whether the guidance as set forth in the Strategic Plan for the initiation and construction of habitat projects has been achieved.

(v). Whether VAs were fully funded through Year 8;

(vi). Whether the Triennial Reports or other sources of reliable information indicate that factors outside of the VAs are impairing the relevant fish species;

(vii). Whether flows have been adequately protected pursuant to Section 8; and

(viii). Whether additional funds are available to continue the VA program.

D. Prior to selecting one of the three options from subsection (B), the State Water Board will:

(i). Hold appropriate hearings to review and receive input on the scientific reports, analysis, information, and data generated by the VA Science Program and other sources and receive recommendations on the anticipated effectiveness of continuing or modifying VAs or implementing the regulatory pathway described in Section 1.4(C); and

(ii). Conduct a Delta Independent Science Board review to receive input and recommendations on the scientific rationale for continuing or modifying the VAs.

E. In Year 8, the VA Parties will submit their final Annual Report. The State Water Board will distribute any proposed amendments to the Bay-Delta Plan's Program of Implementation, which will be informed by the consideration of factors in Section 7.4(C), to be implemented after Year 8.

F. If, by the end of Year 8, no new agreements have been adopted or State Water Board has not yet assigned responsibility for implementing the Bay-Delta Plan through a regulatory pathway described in amendments to that Bay-Delta Plan's Program of Implementation, the original VAs (and their terms concerning water-user funding for flow contributions) will continue, but unless otherwise negotiated, those obligations will not extend beyond 15 years.

G. In the Government Code section 11415.60 Agreements, the VA Parties and the State Water Board will establish a procedure for timely and effective referral of disputes that arise during any update to the Bay-Delta Plan's Program of Implementation described in Section 7.4. The procedure will promptly involve executive leadership (across the VA Parties) in resolution of disputes that, if unresolved, would involve significant risk of delay in final action.

7.5. The Government Code section 11415.60 Agreements will authorize an extension of the VAs beyond Year 8 to continue until new VAs are adopted or the State Water Board adopts a pathway as described in Section 7.4(B). VA Parties that are water agencies will reserve remedies specified in these agreements.

8. Protection of Flows.

8.1. The Parties propose to, and anticipate that, the State Water Board will use its legal authorities to protect all flows generated by actions identified in Appendix 1 against diversions for other purposes for the term of the VAs. The VA Parties will support the State Water Board in its proceedings by assisting with developing technically and legally defensible methods to provide these protections. During administrative proceedings, the VA Parties will support the developed protections, provided the VA Parties agree with the authority cited by the State Water Board for the proceedings, the scope of proceedings, and the technical methodology. Prior to the potential adoption of VAs by the State Water Board, the Parties agree to collaboratively identify and resolve any redirected adverse impacts resulting from the implementation of flow contributions identified in Appendix 1.

8.2. The Parties anticipate that State Water Board will report annually on what actions the State Water Board has taken to protect these flows from unauthorized uses.

8.3. All San Joaquin River watershed flows required as a result of implementing the 2018 Bay Delta Plan Update or VAs will be protected as Delta outflows to the maximum extent feasible, and prior to the State Water Board's adoption of an action to protect the new Delta outflows, the Parties agree to discuss the protection of these flows and collaboratively identify and resolve any redirected adverse impacts to water supply in excess of Appendix 1 contributions resulting from the protection of these flows as Delta outflow.

8.4. In coordination with the State Water Board and other Parties, the Department of Water Resources, and the U.S. Bureau of Reclamation will develop accounting procedures to assure that flows and habitat restoration provided under the VAs are additional contributions as stated in Section 4. These procedures will be incorporated into the Implementation

Agreements, as appropriate, and will be subject to approval by the State Water Board.

9. **Governance Program.** The VAs will establish a Governance Program to direct flows and habitat restoration, conduct assessments, develop strategic plans and annual reports, implement a science program, and hire staff and contractors.

9.1. Governance Entities. VA Parties will formally establish the following entities to govern implementation of the VAs unless a comparable governance entity already exists. Each governance entity will adopt a charter that is consistent with the Global Agreement and applicable Implementing Agreement.

A. The Systemwide Governance Committee will make recommendations related to deployment of flow and non-flow measures as provided in its charter, oversee Triennial Reports in Years 3 and 6 (and potentially Years 9 and 12, if the VAs are renewed), regarding implementation and effects, any revision to the Strategic Plan in Year 6 (and potentially 12, if the VAs are renewed), and overall coordination of the VA Program. Through the Strategic Plan and otherwise, this committee will assure that implementation is consistent with the terms of applicable Implementing Agreements. This committee may include members from appropriate stakeholders who are not VA Parties.

B. The Tributary/Delta Governance Entities will be responsible for implementation of Implementing Agreements for which that entity is responsible, including deployment of flow and nonflow measures as specified in those Implementing Agreements, and preparation and submittal of associated Annual Reports to the Systemwide Governance Committee. Each such entity will include VA Parties subject to the applicable agreement.

9.2. Governance Procedures for Flow Measures.

A. Tributary flow measures will be subject to implementation in accordance with the recommendation or request of the Systemwide Governance Committee, consistent with rules set forth in the Implementing Agreements. A Tributary Governing Entity may consent but is not required to agree to a recommendation for

implementing a measure in a manner that would be inconsistent with its Implementing Agreement.

B. Delta flow measures will be subject to implementation in accordance with the recommendation or request of the Delta Governance Entity consistent with rules that will define the scope that the measure is available to be adaptively managed. Such implementation will be coordinated with the Systemwide Governance Committee.

9.3. Strategic Plans.

A. The VA Parties will propose an initial Strategic Plan for approval in the update to the Bay-Delta Plan, along with other elements of the VAs. The plan will provide multi-year guidance for the implementation of flow and other measures, set priorities to guide the Science Program, and establish reporting procedures related to implementation and effects. The Strategic Plan will be consistent with applicable terms of Implementing Agreements.

B. The Parties will request that the State Water Board approve the initial Strategic Plan as an element of the Program of Implementation.

C. The Systemwide Governance Committee may revise the initial Strategic Plan for the purpose of Years 3 and 6, and subsequently as applicable, subject to the State Water Board's review and approval of any adaptive management outside of the limits established in the initial Strategic Plan.

9.4. Annual and Triennial Reports.

A. The Tributary/Delta Governance Entities will prepare Annual Reports of their implementation of the VAs in the preceding year. The Systemwide Governance Committee will compile and integrate these reports for annual submittal to the State Water Board.

(i). Reports will inform adaptive management.

(ii). Reports will be technical in nature, identify actions taken, monitoring results, and milestones achieved.

(iii). Reports will document status and trends of native fish.

(iv). Reports will document whether commitments for VA asset deployments are being met. Commitments will be documented using a State approved accounting methodology and validated to be true and correct by a third party independent registered professional engineer.

(v). Reports will document progress toward completion of VA habitat restoration projects. Each report will document permit success in terms of applications submitted, processing timelines, and permits obtained.

(vi). Reports will document efforts to seek new funding to support program.

B. In Years 3 and 6, and subsequently as applicable, the Systemwide Governance Committee will prepare a Triennial Report to analyze progress across the Delta watershed and, in coordination with the Tributary/Delta Governance Entities, will submit these reports to the State Water Board.

C. The State Water Board will hold a public informational workshop on the VAs following receipt of each Triennial Report.

10. Science Program. The VAs will include a comprehensive Science Program.

10.1. The Science Program will serve the following purposes: (A) inform decision-making by the Systemwide Governance Committee, Tributary/Delta Governance Entities, and VA Parties; (B) track and report progress relative to the metrics and outcomes stated in Appendix 4; (C) reduce management-relevant uncertainty; and (D) provide recommendations on adjusting management actions to the Systemwide Governance Committee, Tributary/Delta Governance Entities and VA Parties.

10.2. The Science Program will be guided by the principles of best available science, efficiency, forward-looking perspective, shared risk in addressing uncertainty in data and analyses, transparency, collaboration, and timeliness.

10.3. The Science Program will include the following elements.

A. Implement specific experiments. The science program will adopt a "safe to fail" experimental approach to maximize learning.

B. Test hypotheses. The program will identify and test key hypotheses/assertions, especially/even if conflicting, about how the ecosystem functions and what measures will be most effective at achieving desired outcomes.

C. Learn from the experiments. Ensure that each measure is designed and implemented in a manner that maximizes learning.

D. Design the experiments to test specific outcomes.

E. Facilitate a collaborative process. All parties will be engaged in the development and implementation of the science program.

F. Facilitate a transparent process. All parties will facilitate a transparent process through collaboration, reporting, and open data.

G. Monitoring. The Science Program will ensure one or more monitoring regimes are developed that will allow the parties to collect data on target species and their habitats necessary to assess the efficacy of flow and non-flow measures

10.4. For purposes of adaptive management, the Science Program will include structured decision-making processes to determine or adjust flow and non-flow measures, direct science efforts, and incorporate outcomes of the testable hypotheses to continue to inform decision-making, consistent with applicable provisions of the Governance Program.

11. Resolution of Litigation and Other Related Regulatory Proceedings. The Parties understand the VA contributions, to the maximum extent allowable under law, will be recognized in the resolution of other related regulatory proceedings, including during the pending consultation on ongoing CVP and SWP operations and/or application for a new or amended incidental take permit for operations. As provided in Section 1.3.B of the MOU, the VA Parties will address appropriate resolution of litigation pertaining to other regulatory actions, interim operations in 2023 and 2024, and other regulatory proceedings that relate to the actions described in the Term Sheet.

12. **Early Implementation.** State agencies will work with the VA Parties to implement the following measures before the State Water Board's approval of the VAs in the Program of Implementation, subject to applicable environmental review:

12.1. Dedication of water that can be made available without the establishment of revolving or water purchase funds;

12.2. Dedication of water that can be made available through an identified funding source; and

12.3. Advanced planning and/or implementation of habitat restoration projects that have funding and necessary regulatory approvals, including that available through the $70M appropriated from Proposition 68.

13. **Environmental Review**. The Parties request that the State Water Board consider this Term Sheet, including Appendices 1 through 4, as a proposal in the SED to support the update of the Bay-Delta Plan.

13.1. The Parties will develop a plan for all necessary environmental review for all VA-related implementation actions, including but not limited to use of the programmatic discussion in the State Water Board's SED consistent with applicable law.

13.2. This Term Sheet is not a contract and does not represent a commitment by any Party to approve or implement any project or alternative or otherwise bind any Party to a definite course of action.

Appendix 1.
Flow Tables

Table 1a: New Contributions to Tributary Flow and Delta Outflows in Thousand Acre Feet[1,2,3]

Source	C (15%)[4]	D (22%)	BN (17%)	AN (14%)	W (32%)
San Joaquin River Basin					
Minimum Placeholder Contributions[5]	*48*	*145*	*179*	*112*	*0*
San Joaquin Basin Portion of Gap		*11*	*2*	*10*	
Friant	0	50	50	50	0
Sacramento River Basin[6]					
Sacramento[7]	2	102	100	100	0
Feather	0	60	60	60	0
Yuba	0	60	60	60	0
American[8]	30	40	10	10	0
Mokelumne	0	10	20	45	0
Putah[9]	7	6	6	6	0
CVP/SWP Export Reduction[10]	0	125	125	175	0
PWA Water Purchase Program					
Fixed Price (see Table 1b)	3	63.5	84.5	99.5	27
Market Price[11]	0	45	45	45	0
Permanent State Water Purchases[12]	65	108	9	52	123
Year 1 New Outflow Above Baseline (Low Target)	***155***	***825.5***	***750.5***	***824.5***	***150***

Table 1b: Supporting Details for New Flow Contributions (Table 1a) and Year 8 Water Storage

	C (15%)	D (22%)	BN (17%)	AN (14%)	W (32%)
PWA Fixed Price Water Purchase Program					
Sac Valley NOD		10	10	10	
CVP SOD		12.5	24.5	35	
WWD SOD[13]	3	6	15	19.5	27
Add CVP SOD[13]		5	5	5	
SWP SOD		30	30	30	
Refill (Mokelumne)[14]	0	9	18	13.5	0

New Water Projects (Before Year 8)[15]					
Chino Basin	0	50	50	0	0
Kern Fan	0	18	18	0	0
Willow Springs Conjunctive Use	0	19	29	0	0

[1] This table reflects status of negotiations as of the date of this Framework. Prior "global gap" to meet adequacy are now reflected as Permanent State Water Purchases.

[2] Outflows additive to baseline and will be provided January through June. A portion of the VAs' flows can be flexibly shaped to other times of year to test biological hypotheses while reasonably protecting beneficial uses. Such shaping will be subject to VAs' governance program. Flows made available through reservoir reoperations will be subject to accounting procedures described in term sheet and all flows will be verified as a contribution above baseline using these accounting procedures.

[3] An assessment based on the accounting procedures to be developed pursuant to Term Sheet section 8.4 will be conducted prior to year 8 of VA to determine if the flows in this table have materialized on average above baseline by water year type. The VA parties acknowledge that, if this analysis does not demonstrate that flows have materialized as shown in this table, then the VAs will be subject to Term Sheet provisions of Section 7.4(B)(ii) or (iii).

[4] C year off-ramps subject to negotiation, but flows in this table must reflect average C year contributions over the term of the VA.

[5] Minimum placeholder contribution for the SJR tributaries equivalent to what would have been provided under the VA. Additional flows above minimum placeholder values will be required in certain year types to satisfy current water quality objectives.

[6] The new flow contributions from the Sacramento River Basin identified in this Table 1a, plus new flow contributions resulting from the below-referenced PWA Water Purchase Program, Permanent State Water Purchases, and PWA Fixed Price Water Purchase Program line items in Tables 1a and 1b, are not intended to result in idling more than 35,000 acres of rice land in the Sacramento River Basin.

[7] VA parties agree that the Sacramento River flow contribution of 100 TAF will be provided during the January through June period, except when it is recommended through the VA governance process that shifting the timing of a portion of this contribution would be in the best interest of the fishery. Recommendations by the VA governance group require approval from the following agencies: National Marine Fisheries Service, California Department of Fish and Wildlife, and the State Water Board.

[8] Contingent on funding groundwater substitution infrastructure to be completed by a subsequent year. These flows are included in the Year 1 subtotal.

[9] Consistent with the safe yield of the Putah Creek Accord (2000).

[10] If, in any year, this level of Exporter contribution would reduce supplies that would otherwise be provided to Exporters to protect M&I Public Health and Safety, then the Exporter contribution will be reduced to avoid reduction of M&I Public Health and Safety water, consistent with operations contemplated in D-1641 and the biological opinions for the coordinated operations of the CVP and SWP to protect health and safety water supplies.

[11] The VA's governance program will be used to determine the use of available funding to provide additional outflow in AN, BN, or W years. If DWR is called upon to provide the water by foregoing SWP exports, such call will be handled through a separate agreement between DWR and its contractors.
[12] State to permanently acquire 65TAF of water in all water year types to contribute to meeting the flow targets specified in row 27 of this table. After applying this 65TAF in all water years a gap of 43TAF will persist in D years and a gap of 58TAF will persist in W years; however, there will be a surplus of 56TAF in BN years and a surplus of 13TAF in AN years. D and W year gaps to filled by redistributing a portion of the PWA water purchase contribution from BN and AN years, and through additional State water purchases in W years.
[13] If flows are not obtained through this source, the equivalent volume would be obtained at market price or otherwise obtained through other mechanisms.
[14] Requires refill commitments or mutually agreeable operational agreement. Refill commitments are not included in tabulation of additive flows since they serve to ensure tributary flow contributions are protected as outflow without injury to other users.
[15] State funding to be secured, and projects to be phased-in, by Year 8.

Appendix 2.*
Minimum Additive Contributions to Habitat Restoration

Area	Total Acres[i]
Sacramento Basin	
Sacramento	137.5 (instream), 113.5 (spawning)
Sutter Bypass, Butte Sink, and Colusa Basin	20,000 (floodplain) [ii], 20,000 (fish food production) [iii] *Initial Targets per funding and permitting*
Feather	15 (spawning), 5.25 (instream), 1,655 (floodplain) [iv]
Yuba[v]	50 (instream), 100 (floodplain)
American	25 (spawning), 75 (rearing)
Mokelumne	1 (instream), 25 (floodplain)
Putah	1.4 (spawning)
North Delta Arc and Suisun Marsh	5,227.5 [vi]

**To expedite the completion of these projects, the State will commit to establish a new, multi-disciplinary restoration unit, with authority to coordinate and work collaboratively to obtain all permits required to implement the restoration activities. The unit will track and permit these projects and seek to: (1) encourage coordination between and among state and federal agencies, (2) avoid repetitive steps in the permitting process, (3) avoid conflicting conditions of approval and permit terms, and (4) provide an expedited path to elevate and resolve permitting challenges.*

[i] This column represents the sum of habitat restoration commitments proposed in the Planning Agreement and habitat restoration acres identified in the State's VA Framework from February 2020 (modified to reflect the 8-yr VA term, State Team's discussion with participants, and modeling analysis).
[ii] Floodplain habitat will be generated via Tisdale Weir and other modifications. Subject to analysis showing that acreage meets suitability criteria.
[iii] Subject to analysis of effectiveness. Water will be pumped onto rice fields, held for a period of time to allow fish food production (e.g., zooplankton), and then discharged to the river for the benefit of native fishes downstream.
[iv] This consists of added instream habitat complexity and side-channel improvements.
[v] This constructed floodplain will be activated at 2,000 cfs.
[vi] This will be tidal wetland and associated floodplain habitats.

Appendix 3.
Costs to Implement VAs

Costs to Implement VAs	$ Million (M)	Notes
Costs in Planning Agreement		
Habitat Construction	$477	Estimated project costs throughout tributaries.
Voluntary Fallowing	$268	Upfront payments plus voluntary fallowing in Sacramento and Feather watersheds.
Water Purchases in Various Water Years	$125	Funding to purchase water from Yuba and upfront water purchase from American.
American River Recharge Project	$40	Project specified for funding in Planning Agreement.
Science and Adaptive Management Programs	$104	Estimated costs of science program across all tributaries ($1M/tributary/year) and Delta ($3M/year), and adaptive management ($5M/year).
Subtotal	**$1,014**	
Additional Costs to Achieve VAs as Described in this Framework		
Water Development Costs	$370	Projects that generate Delta outflow. Reflects State's share of awarded Prop 1 WSIP funding.
Additional Water Purchase on Market	$64	Funding deployed to secure additional flows in certain water years allocated per VA's Governance Program.
Additional Water Purchase with Fixed Price	$208	
Additional Habitat Restoration per this Framework	$381	Estimated cost to construct additional habitat identified in this Framework.
Adjusted Science and Adaptive Management Program	$24	Additional estimated science costs across all participating tributaries (+$0.5M/tributary/year) and Delta (+$0.5M/year).
Permanent State water purchases (no defined source)	$490	Estimated cost of water in various WYT's

Total Estimated Cost Refill	$25	Estimated cost on Mokelumne (Potential to Operate around and avoid this cost)
Mokelumne AN Water Purchase (30 taf)	$13	
Subtotal	**$1,575**	
Total VA Costs	**$2,589**	Aggregated costs from Planning Agreement plus additional costs to achieve commitments per this Framework.

Table 4.
Funding for VAs' Framework

Funding Source	Use of Funds	$ million (M)	Notes
Committed Funding in Proposed Framework (December 2018)			
Water Agencies	CVPIA Funding for VAs' Term	$80	Approximately $10M/year for 8 years.
Water Agencies	Water Revolving Fund	$217[1]	Generated by $5/AF charge on state and federal contractors and some other water agencies. Hydrology dependent. Portion required to stay within contributing tributaries.
Water Agencies	Habitat on Mokelumne	$17	Water agency contribution to habitat on Mokelumne per Planning Agreement
Water Agencies	Structural Science and Habitat Fund (SSHF)	$124	Generated by $1-2/AF charge on state and federal contractors and some other water agencies. Portion required to stay within contributing tributaries (Yuba and American).
Subtotal		**$438**	
State	Proposition 68	$165	Explicitly provided in Proposition 68 for water purchases, land fallowing, and habitat projects
State	Proposition 1 Water Storage Investment	$370	Funding generated by Proposition 1. Requires other funding match from

[1] Dollars in this and the subsequent row are based on historical deliveries on a long-term average. Actual dollars may vary.

	Program (WSIP) for Feather River		individual State Water Contractors (Chino, Kern, and Willow Springs).
Various	CVPIA and State funding allocated to VA habitat projects in March 2019 PD	$87	Funding from CVPIA, Prop 1, and other grants already allocated to projects identified in the March 2019 PD. Does not include Prop 68 funds.
Subtotal		**$622**	
Total Committed Funding		**$1,060**	From PWAs, State and Federal combined
Identified New Funding			
Water Agencies	Immediate collection of self-assessment	$100	Contribution to revolving fund two years prior to VAs' effective date. Any federal funding that is not available in these first two years due to appropriations constraints will be recouped through a surcharge over the 8-year term of the VAs. If federal funding is recouped through a surcharge, each PWA that pays a surcharge will receive credit in the amount of the surcharge paid. The credit shall be applied as soon as possible against a financial obligation the PWA assumes under the VAs.
Water Agencies	Additional funding for water purchases (Water Revolving Fund)	$130	Funding generated by an additional $3/AF self-assessment by PWAs.
Subtotal of New Funding from Water Agencies		**$230**	
New Funding from State (secured)		**$503**	$200 M from DWR for habitat restoration and $303 M from CNRA water resilience funds (which total $445 M)
New Funding from State (unsecured)		**$381**	
New Federal Funding (unsecured)		**$740**	New federal funding to support habitat restoration throughout tributaries, multi-

			benefit projects, and Sacramento Valley habitat projects.
Total of New Funding Commitments		**$1,854**	
Total Funding for VAs		**$2,914**	This total exceeds VA costs above because it includes federal funding which is needed for habitat restoration.

Appendix 4: Metrics, Monitoring, and Outcomes Framework for Assessing VA Effectiveness

This framework, including implementation criteria, habitat suitability and utilization criteria, and the final monitoring framework will be further developed collaboratively by the VA Parties (see Sections 2.1 and 5.2 of VA Term Sheet) in coordination with the State Water Board.

Implementation criteria: Quantitative metrics will be developed to ascertain whether VA commitments are met. Implementation criteria will be established to ensure actions are taken to provide (1) flow volumes by water year type above baseline as specified in Appendix 1, and (2) non-flow assets, including instream and floodplain habitat projects, that meet design criteria, acreage, and other targets. The implementation criteria answer the question: Did we implement the actions we committed to undertake? If not, why not? Consideration will be given for non-party caused implementation hurdles.

Habitat suitability and utilization criteria: Quantitative metrics will be developed for determining if constructed habitat meets predetermined: 1) project level suitability criteria (e.g. depth, velocity, duration); and 2) utilization criteria (e.g. fish presence, food production, juvenile fish movement, fish condition). The habitat suitability and utilization criteria answer the question: Are the constructed and restored habitats providing or likely to provide suitable habitat or food production for target species and life stages and are they being used as intended? Consideration will be given for non-party caused implementation issues and for the time it takes for restoration sites to "mature."

Monitoring: Before VA year 0, the VA Governance and Science Program will develop a monitoring framework (e.g. species and habitat) to test the specific hypotheses for each of the VA commitments. The framework will include habitat design, suitability, and utilization criteria, which will be subject to approval by DFW, in consultation with USFWS and NMFS, and adopted by the SWB as part of the overall VA. Project specific monitoring plans will be developed through the VA Governance and Science Program. In coordination with the SWB and other VA Parties, CDWR and the U.S. Bureau of Reclamation will develop accounting procedures to assure that flows and habitat restoration provided under the VAs are additional contributions above baseline conditions as defined in Section 4 of this Term Sheet. These procedures will be incorporated into the Implementation Agreements and subject to approval by the State Water Board. Early implementation projects will follow monitoring protocols developed during permitting/granting process, and adjust, as appropriate, once VA governance has developed a framework. The framework will require SWB approval.

Sufficient monitoring of target species and flow and habitat assets deployed over the initial term of the VA will be key to informing the scientific basis and rationale for continuing the VA beyond year 8. Monitoring approaches will vary geographically and by habitat type but should be hypotheses driven and supported by recent data from the watershed or geographic region in question. The goal of this monitoring effort is to ensure species and habitats are monitored correctly and sufficiently to answer the

hypotheses as described in the habitat monitoring framework. An illustrative example is provided below:

Habitat Type	Objective	Hypothesis	Monitoring Metrics
Tributary Spawning	• Increase abundance of fry	Increase in suitable spawning habitat area increases number of redds and successfully hatched eggs.	• Number of redds • Egg→Fry survival • Abiotic parameters

Ecological outcomes analysis: Prior to year 7 of the VA, a report from the VA governance program will be submitted to the SWB synthesizing the scientific data and information generated by the VA science program, primarily based on the Years 3 and 6 Triennial Reports. The governance and science programs will include, but not be limited to, members of all represented parties in the development of reports and synthesis analysis. This report will document the hypotheses tested and the results, and will demonstrate the scientific basis and rationale for continuing the VA beyond year 8. This report will also synthesize available information and extrapolate from the VA hypothesis testing the expected ecological outcomes from continuing the VA, including quantifying how the continuation of the VA will improve species abundance, ecosystem conditions, and contribute to meeting the WQCP Objectives. The analysis will be informed by a variety of approaches, including monitoring data and models developed over the initial 8-year term of the VA. Sufficient monitoring of target species and flow and habitat assets deployed over the initial term of the VA will be key to informing the scientific basis and rationale for continuing the VA beyond year 8. The ecological outcomes analysis could answer the key questions: What have we learned from flow and non-flow actions implemented under the VA, what combination of flow and non-flow assets maximize ecological benefits, are changes needed to VA assets after Year 8, and how will continuation of the VA effect the overall ecosystem at the population level for target species? Consideration will be given for actions or circumstances outside the control of the VA parties.

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MONTHLY RESERVOIR REPORT for April 1st

mavensnotebook.com/2022/04/01/monthly-reservoir-report-for-april-1st-3/

Robert Shibatani Water conditions April 1, 2022 0

April 1, 2022

Prepared exclusively for Maven's Notebook by Robert Shibatani

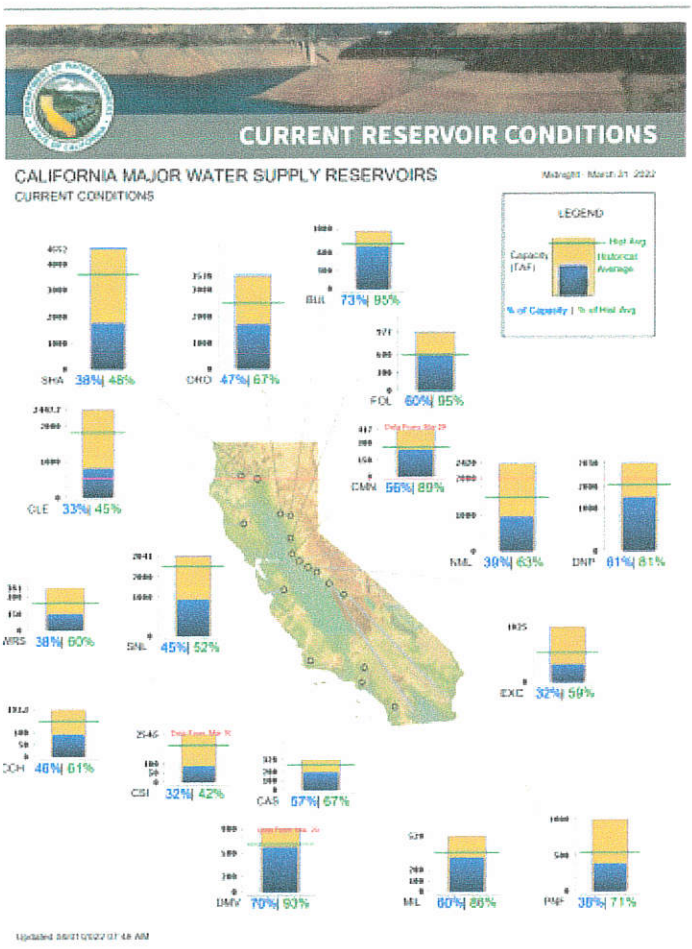
The "*Miracle March*" everyone was hoping for, unfortunately did not materialize.

Across California, federal CVP reservoir storage currently stands at 4.698 million acre-feet (MAF), representing a little less than 40% of total federal reservoir system capacity but, 57% of the 15-year average. When compared to this same time last month, however, total CVP storage was only 4.573 MAF, thus indicating an actual storage gain of 125,000 acre-feet (AF) over the past 30-days despite receiving little to no new precipitation.

How could this have happened? Particularly under supposed drought conditions?

The answer is simple. We exited the flood control season, allowing res-ops to transition to "refill" mode. Several notable reservoirs in fact gained storage during March. Shasta Reservoir, the State's largest, gained 42,000 AF, Trinity Reservoir gained 21,000 AF, Oroville

Reservoir on the SWP side gained 17,000 AF, even modest Folsom Reservoir gained 51,000 AF. New Melones Reservoir, however, the 3rd largest federal facility lost 46,000 AF.



California's snowpack was significantly depleted over the month with statewide SWE dropping some 4.5 inches to 11 inches which is about 39% of normal for this date; interestingly, it was 64% of normal only 30-days ago. Across the northern, central, and southern regions, SWE values range between 30-44% of normal for this date.

Insofar as precipitation is concerned, the accumulated totals were dismal. The Northern Sierra Precipitation – 8 – Station Index stands at 33.2 inches gaining a paltry 1.3 inches for the month (with current totals representing only 75% of average). For the San Joaquin Precipitation – 5 – Station Index, the current 22.1 represents a meager 1.7-inch gain for March representing 67% of average for this date. For the Tulare Basin Precipitation – 6 – Station Index, the current 14.9 inches is only 63% of average, gaining only 1.4 inches over the month.

With the mid-month change in CVP/SWP operational priorities, system hydrology reacted as expected. While total delta inflow averaged 12,226 cfs for the month, it dropped from the mid-14,000s prior to March 15th, steadily declining to around 10,000 cfs over the latter half of the month. As reservoir releases from the upper Sacramento River reservoirs and Oroville Reservoir were scaled back, resulting change in Sacramento River flows at Freeport during this time became evident; flows were notably diminished from the mid-12,000 cfs to around 8,000 cfs.

Delta operations for the month of March had total Tracy pumping just under 70,000 AF through yesterday with Banks pumping around 29,000 AF. Total exports have been fairly constant around 1,500 cfs daily, but with the onset of the irrigation season, exports have ramped up to 4,800 cfs these past few days. Not surprisingly, a significant jump in daily E/I ratio was evident, calculated to be around 40%.

With March now officially behind us; the 2022 irrigation season is upon us, and exports are already ramping up. Statewide reservoir storage is low, though not yet dire. Unfortunately, there is no significant precipitation on the horizon and SWE is declining rapidly. While the terrestrial moisture reserves were capped off earlier in the season, unexpected warm spells have continually depleted these stores.

Prepared by Robert Shibatani

Robert Shibatani, a physical hydrologist with over 35-years combined experience as an international expert witness on reservoir-operations, climate change hydrology, commercial flood damage litigation, and water supply development. He is Managing Partner for The SHIBATANI GROUP International, a division of The SHIBATANI GROUP Inc. and resides in Sacramento, California. robert@theshibatanigroup.com

View more water conditions at DWR's California Water Watch website.

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