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February 2, 2026

Joaquin Esquivel, Chair
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

RE: REVISED DRAFT SACRAMENTO/DELTA UPDATES TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA WATERSHED AND SUPPORTING DRAFT STAFF REPORT

Dear Chair Esquivel,

This letter is submitted as the comments of Friends of the River, San Francisco Baykeeper, California Sportfishing Protection Alliance, Golden State Salmon Association, Defenders of Wildlife, Yosemite Rivers Alliance, Save California Salmon, and Restore the Delta, to the State Water Resources Control Board ("State Water Board" or "Board") regarding the December 2025 Revised Draft Sacramento/Delta Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Watershed ("Revised Draft Plan") and Supporting Draft Staff Report ("Recirculated SED").

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I. Introduction

Seventeen years after initiating its update of the Bay-Delta Water Quality Control Plan, the State Water Board has not yet taken action to complete the adoption and begin the implementation of new, protective water quality standards. The purpose of this much delayed update is to protect fish and wildlife and related beneficial uses of water in the San Francisco Bay-Delta estuary and its Central Valley watershed that are in increasing danger of irreparable damage and complete loss. On top of this delay, the Board is now proposing to reject the evidence in its own extensive record regarding what is needed to provide reasonable protection of fish and wildlife and other beneficial uses, and instead to adopt voluntary agreements, a weak, ineffective regulatory backstop, and a Program of Implementation that will utterly fail to prevent further degradation and loss of these beneficial uses.

The delay and the currently planned outcome are unlawful, unacceptable, and a failure of the Board to meet its legal and policy obligations to the public. The Board must abandon its current path and act urgently and decisively to materially improve conditions throughout the watershed. Absent this, the Board will be fostering in and ensuring extinguished instream beneficial uses, extinct native fish, and destroyed communities and economies that depend on them.

II. Native Fish Populations are Not Currently Viable; Existing Conditions and Current Regulations Do Not Reasonably Protect Instream Beneficial Uses of Water

There is no dispute that native fish and wildlife populations, and the beneficial uses that support and/or depend on them, including estuarine habitat, commercial and recreational fishing, and Tribal beneficial uses, are not reasonably protected by current regulations, including existing current requirements of the Bay-Delta Plan, or existing conditions. As the State Water Board recognized in 2023,

> "Native species in the Bay-Delta ecosystem are experiencing an ecological crisis. … Indices of population abundance for multiple native estuarine species are at all-time low levels... Longfin smelt were once a common species in the San Francisco estuary, but the population has undergone several significant declines since the late 1980's and is the lowest in the 40-year history of the Fall Midwater Trawl and Bay Study by California Department of Fish and Wildlife (CDFW) (USFWS 2022). Similarly, abundance indices of Delta smelt have declined, and the population is now about 1 percent of its historic abundance (Hobbs et al. 2019). Since restoration of the Yolo Bypass and Cosumnes River floodplain, Sacramento splittail catch rates have increased (Moyle et al. 2020), but the strong year classes are highly dependent on artificially maintained flows and unusually wet years to create widespread flooding for spawning habitat (Moyle et al. 2015) …

> "Changes to the flow regime of Sacramento/Delta tributaries and changes in Delta outflows, cold water habitat, and interior Delta flow conditions contribute to the impairment of the ecosystem and native fish and wildlife beneficial uses…
>
> "Native species have continued to experience declines in abundance since implementation of Water Right Decision 1641 (D-1641) in 2000, including several species that are protected under the federal Endangered Species Act (ESA) and California Endangered Species Act (CESA)…
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> "Anadromous salmonids, which use habitat in the Bay-Delta estuary and upstream tributaries, have also exhibited substantial declines in population abundance in recent decades. Many Sacramento/Delta tributaries provide critical habitat for Chinook salmon and steelhead populations (Figure 7.6.2-1a). … It is estimated that the average annual natural production of Sacramento River winter-run Chinook salmon, Sacramento River spring-run Chinook salmon, Sacramento River fall-run Chinook salmon (mainstem), and Sacramento River late fall-run Chinook salmon (mainstem) decreased between 1967 and 1991 and between 1992 and 2015 by 89, 61, 43, and 52 percent, respectively (see Table 3.4-3 in Chapter 3). Available data also show a long-term decline in escapement of steelhead from the Sacramento and San Joaquin River basins (McEwan 2001). Hatcheries now provide most of the salmon and steelhead caught in the commercial and recreational fisheries."

2023 Draft Substitute Environmental Document ("SED") at 7.6.2-3 through 7.6.2-4. Indeed, many fish and wildlife populations are not currently viable due to their low abundance, persistent low productivity, limited geographic range, highly constrained life history diversity (e.g., migration timing), or some combination of these factors. Seven species of fish are listed under state and/or federal Endangered Species Acts ("ESA"). Estuarine habitat indicators, including food web productivity and water temperature, show ongoing and worsening degradation. *See* 2023 Draft SED (hereinafter referred to as "Draft SED"), Appendix G2 at 2-21 through 2-25 ("Final Draft Scientific Basis Report Supplement in Support of Proposed Voluntary Agreements…"). Commercial fishing seasons for Central Valley Chinook Salmon have been closed since 2023 and the recreational harvest fishery for White Sturgeon[1] in the Bay-Delta has been closed since 2024. Toxic algal blooms, which jeopardize fish, wildlife, and public recreational use of waterways, proliferate in the Delta.

[1] When The California Fish and Game Commission elevated White Sturgeon to be a candidate for listing under the California Endangered Species Act, the estimated abundance of harvestable-sized individuals in the San Francisco Bay-Delta was approximately 30,000 fish; however, CDFW's latest survey results (from a new monitoring program) reveal that estimated abundance of harvestable size fish is now below 6,500 fish (CDFW 2025). Thus, concern for the future of this population is much higher now than when the petition to list was submitted in 2023.

Decline and deterioration are the status quo for fish and wildlife and associated beneficial uses in the Bay-Delta. For example, the USFWS recently listed the Bay-Delta estuary's population of Longfin Smelt as endangered, finding that:

> "…the probability of quasi-extinction for the Bay-Delta [Longfin Smelt] DPS exceeds 20% by 2035 and reaches 50% in thirty years. Applying the same assumptions over a longer time horizon (i.e., 2050-2065), the suite of surveys predicts that *the probability of extinction for the Bay- Delta DPS under current conditions is roughly 55-75%.*"

USFWS 2024b at 85 (emphasis added).

The Board's record and findings are replete with evidence explaining how the failure of current regulations to reasonably protect beneficial uses is tied, directly and indirectly, to unsustainable diversion of river flows that would otherwise be destined to reach the San Francisco Bay estuary. For example, in listing Longfin Smelt as federally endangered, the USFWS stated:

> *We consider reduced and altered freshwater flows resulting from human activities and impacts associated from current climate change conditions (increased magnitude and duration of drought and associated increased temperatures) as the main threat facing the Bay-Delta longfin smelt due to the importance of freshwater flows to maintaining the life-history functions and species needs of the DPS.* However, because the Bay-Delta longfin smelt is an aquatic species and the needs of the species are closely tied to freshwater input into the estuary, the impact of many of the other threats identified above are influenced by the amount of freshwater inflow into the system (i.e., reduced freshwater inflows reduce food availability, increase water temperatures, and increase entrainment potential).

USFWS 2024a at 61039 (emphasis added).

The State Water Board has repeatedly acknowledged that hydrologic alteration as a result of water diversion is a primary driver of the unsustainable status quo and that river flows influence myriad mechanisms that affect population viability, water quality, and overall ecosystem productivity. In 2018, the State Water Board once again acknowledged the need for "…new and modified Delta outflow requirements to protect estuarine species and to contribute to protection of species in the Bay and near shore ocean," finding that:

> *The survival and abundance of many of these native species is closely related to Delta outflows. The dramatic declines in population size of these species, like longfin smelt, indicate that current Delta outflows are not sufficient to protect the ecosystem. Freshwater outflow influences chemical, physical, and biological conditions through its effects on food, pollution, and the movement of flows not only in the Delta, but throughout the watershed and into the Bay and ocean.* Outflows affect the location where

> freshwater from the rivers mixes with seawater from the ocean, referred to as the low salinity zone (the location of the 2 parts per thousand salinity isohaline or X2 position). *The quality, location, and extent of habitat in the estuary fluctuates in response to outflows and other factors. Coastal and near-shore marine species also rely on flows to aid the migration of their young into the estuary. Generally, more downstream X2 locations past the confluence of the Sacramento and San Joaquin rivers benefit a wide variety of native species, including commercial seafood species, through improved habitat conditions for various life stages*[.] These benefits extend all the way through the Bay and out into the ocean.

SWRCB 2018 at 8 (emphasis added).

Analysis of the proposed voluntary agreements and 55w/WSA alternatives in the Revised Draft Plan must be conducted in the context of non-viable and declining populations of native fish and wildlife, deteriorating water quality conditions, and water quality requirements that do not even protect status quo conditions.[2] In order to support and maintain viability of native fish and wildlife populations that are not currently viable and beneficial uses that are not reasonably protected, updated water quality standards must do more than re-enforce the status quo; even small "improvements" in environmental and biological conditions will not satisfy the State Water Board's obligations. To achieve the proposed water quality objectives and reasonably protect fish and wildlife and related beneficial uses now and into the foreseeable future, the State Water Board must demonstrate that proposed updates to the Water Quality Control Plan and Program of Implementation will restore fish and wildlife populations to viability, including the ability to support Tribal, commercial, and recreational fisheries (where applicable), allow for recreational opportunities that are now foreclosed by poor water quality, and expand the temporal and spatial availability and functions of highly degraded coldwater and estuarine habitats. In other words, the State Water Board must demonstrate that the updates to the Bay-Delta Plan and Program of Implementation will reverse declines in the abundance and viability of native aquatic species, and the ecological processes and habitats that support them, such that these aquatic populations are increasing in abundance and are viable, supporting a broad range of ecosystem services, rather than merely declining in abundance at a slower rate. The Board has utterly failed to do so in the Revised Draft Plan.

[2] As discussed *infra*, the Revised Draft Plan fails to ensure that the voluntary agreement or 55w/WSA alternatives increase Delta inflows and Delta outflows compared to the degraded baseline conditions, in light of climate change and future demands for water (including pending water right applications for Sites Reservoir and the Delta Conveyance Project).

III. The Revised Bay Delta Plan's Proposed New Narrative Objectives are Unlawful

A. The Revised Draft Plan's Reliance on Narrative Objectives and Exclusion of Numeric Objectives is Unlawful

In the Revised Draft Plan, the State Water Board has proposed to rely exclusively on narrative objectives for Delta inflow, Delta outflow, Cold Water Habitat, and Interior Delta Flows rather than numeric criteria for these objectives. This includes eliminating the previously identified numeric inflow objective. The Revised Draft Plan's reliance on narrative objectives, when numeric criteria are available, violates the Clean Water Act, and the failure to use numeric objectives – or narrative objectives that unambiguously correspond to numeric assessment criteria, and which provide clear levels or limits to evaluate compliance – violates the Porter-Cologne Act.

Federal regulations implementing the Clean Water Act are unambiguous: narrative criteria (called "water quality objectives" under Porter-Cologne) may only be used "where numerical criteria cannot be established or to supplement numerical criteria." *See* 40 C.F.R. § 131.11(b)(2). The extensive record before the Board in this proceeding leaves no doubt that numeric objectives can be established for Delta inflow, Delta outflow, Cold Water Habitat, and Interior Delta Flows.

This evidence includes, but is not limited to, a number of adopted or proposed numeric criteria, such as the 2018 Bay-Delta Plan amendments adopted by the Board at the end of the first phase of this Plan update, which include numeric objectives for Delta inflow (San Joaquin River), Delta outflow, and restrictions on Central Valley Project/State Water Project ("CVP/SWP") operations; the Board's 2023 Draft SED, which includes numeric criteria for Delta inflow[3]; the Board's 2017 Scientific Basis Report, which included draft numeric criteria[4]; and the Board's 2010 Public Trust Flow Report, which identified specific numeric flow criteria for Delta inflow, in-Delta flows, and Delta outflow.[5] The various California Regional Water Quality Control Boards have also adopted numeric water temperature objectives relevant to the update of the Plan. *See, e.g.,* Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, at 3-14 ("Central Valley Basin Plan"). The Bay-Delta Plan – including provisions regarding minimum instream flows, Delta outflow and salinity, and water temperature – must comply with the Clean Water Act. *See, e.g.,* U.S. Environmental Protection Agency ("EPA") Letter to the State Water Board dated September 3, 1991;[6] EPA Letter to the

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[3] *See, e.g.*, Draft 2023 SED at 5-15 to 5-17.
[4] *See* SWRCB 2017, Chapter 5.
[5] *See* SWRCB 2010, at p. 5; *see also id.,* at §§ 5.1, 5.2, 5.3. (*"*Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, Prepared Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009" by the State Water Resources Control Board, August 2010 [hereinafter, referred to as "SWRCB 2010"]. Available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.)
[6] *See, e.g.,* Central Coast Regional Water Quality Control Board. 2024. Water Quality Control Plan for the Central Coastal Basin, June 2024. California Environmental Protection Agency. Available online at: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/basin_plan/; *see also* Water Quality Control Plan for the North Coast Region. 2025. North Coast Basin Plan Amendment, June 2025 at 56. California

State Water Board dated September 26, 1995[7],; *see also City of Burbank v. State Water Resources Control Bd.* 111 Cal.App.4th 245, 255-258 (2003), affirmed in relevant part by *City of Burbank v. State Water Resources Control Bd.* 35 Cal.4th 613, 619-621(2005). Because numeric criteria previously have been and clearly can be established for these water quality objectives, and because the Bay-Delta Plan must comply with the Clean Water Act, the Revised Draft Plan's reliance on narrative objectives is unlawful.

Similarly, the Porter-Cologne Water Quality Control Act ("Porter-Cologne") defines water quality objectives as "*the limits or levels* of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Cal. Water Code § 13050(h) (emphasis added). The plain meaning of "limits or levels" indicates quantitative, rather than vague qualitative criteria, and there is no explicit statutory authorization for the State Water Board to adopt narrative, rather than numeric, water quality objectives – particularly narrative objectives like those proposed in the December 2025 Draft Bay-Delta Plan, which, as discussed *infra*, are vague, capable of multiple interpretations, and do not specify "limits or levels"[8] required by Porter-Cologne. In addition, because these narrative objectives are capable of multiple interpretations, they violate the California Administrative Procedure Act's clarity standard and are not valid regulations.

The failure to include quantitative objectives in the Revised Draft Plan violates state and federal law, and the State Water Board must amend the Revised Draft Plan to incorporate numeric, rather than narrative, water quality objectives for Delta inflow, Delta outflow, Cold Water Habitat, and Interior Delta Flows.

B. The Narrative Fish Viability Objective and the Revised Draft Plan's Exclusive Reference to it in defining the Delta Inflow, Delta Outflow, and Interior Delta Flows Objectives are Unlawful

As explained in prior comments to the State Water Board, the narrative fish viability objective is unlawfully vague and undefined. *See* Baykeeper Letter to the State Water Board dated January 19, 2024. Because the objective fails to adequately identify the "limits or levels" that constitute a viable population, and is capable of multiple interpretations, the objective is unlawful under

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Environmental Protection Agency ("When it is necessary to derive numeric values in order to develop discharge limitations and cleanup levels that implement narrative water quality objectives, or *to evaluate compliance with narrative water quality objectives*, the North Coast Water Board may consider all relevant and scientifically valid evidence") (emphasis added) Available online: https://waterboards.ca.gov/northcoast/board_info/board_meetings/06_2025/pdf/6/6-basin-cleandraft.pdf.

[7] This document is available online at: online at: https://www.epa.gov/sites/default/files/2017-05/documents/__0.pdf.

[8] While the State Water Board has asserted that water quality objectives may be stated in either narrative or numeric form, the State Water Board has also explained that narrative objectives are generally implemented through "an appropriate numeric threshold that meets the condition of the narrative objective." State Water Board, A Compilation of Water Quality Goals – January 2016 edition, at 6, 9. This document is available online at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/docs/wq_goals_text.pdf.

Porter-Cologne and is not a valid regulation under the California Administrative Procedure Act's clarity standard. *See* Cal. Water Code § 13050(h). In ecological terms, "viability" refers to a low likelihood of population extirpation within a relatively long timeframe. Moreover, in terms of the State Water Board's obligations, we take "viability" to mean a low likelihood of loss of a designated fish and wildlife beneficial use within a relatively long timeframe. As discussed in our 2024 comments, to support sustainable fisheries or maintain estuarine habitat at levels sufficient to support ecosystem services, native fish populations must exceed the abundance, population growth, life history and genetic diversity, and spatial distribution levels that characterize minimum ecological viability. Thus, reasonably protecting beneficial uses at a threshold of viability – like commercial and recreational fishing, estuarine habitat, or tribal beneficial uses – requires the Plan to: (a) define "viability" in a clear and measurable way in order to set numerical water quality objectives as necessary to support the fish and wildlife relevant beneficial uses; and (b) identify additional objectives and additional actions in the Program of Implementation to ensure that these beneficial uses are reasonably protected. More than adequate information regarding methods and data exists in the record to allow the Board to quantify the abundance and other attributes of viability for target species associated with fish and wildlife and other beneficial uses; indeed, the Board has applied these methods and data to identify desired population outcomes numerous times during this update. *See* SWRCB 2010; SWRCB 2017; *see also* SEP 2019. Furthermore, viability must also be defined for important food web organisms such as zooplankton prey species that are critical for the productivity of estuarine habitat and the ecosystem services that depend on healthy estuarine habitat. Absent a clear definition of viability, the term is subject to multiple interpretations in contravention of the California Administrative Procedure Act.

More, the Revised Draft Plan defines the new proposed narrative objectives for Delta Inflow (Sacramento River / Delta Tributary Flows), Delta Outflow, and Interior Delta Flows solely with respect to achieving the narrative fish viability objective. It does not require that these new proposed narrative objectives also achieve the Plan's salmon doubling objective, or increase abundance to support commercial and recreational fishing, estuarine habitat, and other beneficial uses that depend on abundant fish populations. *See* Revised Draft Plan at 17-19. As a result, the Revised Draft Plan could result in Delta inflows that achieve minimum viability but still lack the Delta inflows necessary to achieve the salmon doubling objective or protect enough salmon to sustain recreational and commercial fisheries. The Revised Draft Plan also proposes that the voluntary agreement will "contribute" to achieving these objectives but never explains how or whether the objectives will actually be met. See Revised Draft Plan at 64. The State Water Board has admitted that the parties to the voluntary agreement constitute most water rights in the watershed, and the State Water Board has not modeled or analyzed how much flow would be contributed by water rights holders who are not parties to the voluntary agreement. *See* Recirculated SED at 13-50. To the extent that the State Water Board argues that the voluntary agreement need not achieve the objectives, where the voluntary agreement constitutes the vast majority, if not entirety, of actions to implement the Revised Draft Plan, the Revised Draft Plan is unlawful because it fails to ensure that the program of implementation will achieve the Plan's water quality objectives. *See* Cal. Water Code §§ 13050(j), 13242, 13247.

Because these objectives are solely tied to the fish viability objective, and they are not linked to achieving the salmon doubling objective or to maintaining abundant fish populations (rather than minimally viable fish populations), these objectives are not lawful.

C. The Narrative Cold Water Habitat Objective is Vague, Unsupported by the Evidence, and Therefore Unlawful

The proposed Cold Water Habitat objective is unlawful because it is vague, lacks clear numeric criteria to assess compliance, is capable of multiple interpretations, and is not tethered to the best available science. In other words, the Revised Draft Plan unlawfully fails to define the "limits or levels" that would constitute adequate cold water habitat or "suitable temperatures."

As currently drafted, the proposed objective reads:

> Maintain streamflows and reservoir storage conditions on Sacramento River/Delta tributaries to protect cold water habitat for sensitive native fish species, including Chinook Salmon, steelhead, and other native cold water fish species. Cold water habitat conditions to be protected include maintaining sufficient quantities of habitat with suitable temperatures on streams to support passage, holding, spawning, incubation, and rearing while preventing stranding and dewatering due to flow fluctuations.

Revised Draft Plan at 18. The Revised Draft Plan describes a process for the State Water Board to evaluate long term temperature management strategies and annual temperature management plans submitted by water rights holders. *See* Revised Draft Plan at 51-55. However, while the Revised Draft Plan identifies procedural requirements (for instance, explaining that temperature management plans must include carryover storage levels, water temperature targets, and locations where those targets are to be measured), it fails to identify any quantitative standards, limits, or levels guiding the State Water Board's evaluation of whether a temperature management strategy or plan is adequate or consistent with the objective. The Revised Draft Plan wholly fails to define what specific water temperatures are "suitable" or what reservoir storage conditions are adequate.

For instance, the Revised Draft Plan never identifies what constitutes adequately protective water temperatures for salmon or other species, based on the best available science. It is unclear from the Revised Draft Plan whether "suitable" water temperatures for spawning salmon below Shasta Dam must be less than 56 degrees Fahrenheit on a daily average (the current inadequate requirement), less than 55.4 degrees Fahrenheit as a 7-day daily maximum average, or some other water temperature standard, nor does it define how far below Shasta and Keswick Dam those temperatures must be maintained. Similarly, the Revised Draft Plan never identifies what levels or limits of temperature-dependent mortality of salmon would cause water temperatures to be "unsuitable," and as a result, it is unclear whether water temperatures that kill 10 percent, 50

percent, or 90 percent of the endangered winter-run salmon eggs constitutes unsuitable water temperatures.[9]

This failure is especially problematic given existing water temperature standards that have been approved by the State Water Board, including temperature standards in Order 90-5 and water temperature objectives in the Central Valley Water Quality Control Plan, fail to use the best available science and authorize water temperatures that cause massive mortality of salmon eggs, failing to provide reasonable protection of fish and wildlife. *See, e.g.*, Martin et al. 2016; Martin et al. 2020; SEP 2019; San Francisco Baykeeper and Friends of the River2026. In recent years, the State Water Board has identified the need to use more protective water temperature standards for spawning and rearing salmon, citing peer reviewed scientific research including Martin et al. 2016, and the Draft SED admits that "similar shortcomings existing for regulatory requirements for temperature management and protection of cold water habitat." Draft SED at 7.6.2-5; *see id.* at 5-21 (admitting existing regulations fail to provide comprehensive temperature protection in the basin and that "temperature control below reservoirs remains a significant concern"); Draft SED at 9-109 ("many reservoirs have existing problems with temperature for which existing temperature controls may not be sufficient.") However, the Revised Draft Plan wholly ignores these existing, inadequate standards in existing Basin Plans and water rights orders, and does not require that those plans and orders be revised; instead, the Draft SED explains that under the Plan, temperature management processes that currently exist on some reservoirs and tributaries "could be used to implement the cold water habitat objective." Draft SED at 5-25

Moreover, the Revised Draft Plan does not identify other temperatures, locations, or times where "suitable" cold water conditions must exist downstream of the reservoirs and through the Delta to support passage or rearing of native fish species dependent on coldwater habitat. As a result, the objective violates Porter-Cologne because there is not substantial evidence that the objective will reasonably protect the COLD, SPWN, WILD, COMM, T-Cul, or MIGR beneficial uses.

In addition, while the Revised Draft Plan includes a table identifying potential storage target ranges for carryover storage below rim reservoirs, the Revised Draft Plan does not require these default reservoir carryover storage levels, as was previously proposed. Similarly, the Revised Draft Plan allows temperature management strategies to include carryover storage requirements that are outside of the proposed range of storage levels solely for water supply purposes, stating that:

[9] Appendix H1a1 includes some temperature thresholds for analysis, but the Plan does not include any numeric temperature criteria for the Cold Water Habitat objective, and the temperature thresholds identified in that appendix fail to use the best available science. *See* Recirculated SED, Appendix H1a1, at H1a1-12 to H1a1-13. As that table admits, "These indicators were chosen for a basic analysis that focuses on fish survival below the dams. Refinement of this analysis using different indicators and downstream locations will likely be necessary to best meet the cold water habitat objective." *Id*. at H1a1-13. Confusingly, Appendix H1b identifies different temperature thresholds for certain river segments. *Id*. at H1b-51 to H1b-65.

> Water right holders may *develop proposed carryover storage requirements outside of this range* (including the dates for meeting carryover storage levels) based on evidence and documentation that *carryover storage requirements outside of these ranges will provide for protection of* cold water habitat and *other critical purposes, including health and safety supplies.*

Id. at 54 (emphasis added). And as discussed *infra*, the Revised Draft Plan admits that the carryover storage thresholds that are identified will not maintain suitable water temperatures during drier conditions.

Because the coldwater habitat objective lacks clear "limits or levels" that define adequate water temperatures[10] and otherwise define how the State Water Board would determine whether temperature management plans and strategies adequately protect cold water habitat, this element of the regulation violates Porter-Cologne and fails to meet the clarity standard of the California Administrative Procedures Act.

D. The Interior Delta Flows Objective is Unlawful

The Revised Draft Plan's proposed narrative Interior Delta Flows Objective violates Porter-Cologne because it does not identify "limits or levels" in the Interior Delta Flows Objective that are necessary to protect water quality and beneficial uses, and it is not a valid regulation under the Administrative Procedures Act because it violates that statute's clarity standard. *See* Cal. Water Code §13050(h). The Revised Draft Plan defines this objective to mean,

> Maintain water quality conditions, including flow conditions in the interior 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 the relative magnitude, duration, timing, quality, and spatial extent of flows. Indicators of viability include population abundance, spatial extent, distribution, structure, genetic and life history diversity, and productivity.

Revised Draft Plan at 19. However, neither the objective nor the Program of Implementation defines the "limits or levels" of flow conditions in the interior Delta necessary to support viable fish populations. Instead, the program of implementation asserts that this objective is met by implementing state and federal ESA permit requirements and other criteria in the Plan. *Id.* at 61. The Plan's approach of relying on state and federal ESA permit requirements to achieve the Interior Delta Flow objective is unlawful, for at least two reasons.

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[10] Moreover, the coldwater habitat objective does not ensure "suitable" temperatures or habitats to those that would support fisheries and public trust resources, making it weaker and vaguer than the existing, albeit inadequate, Order 90-5 based temperature requirements.

The objective relies entirely on actions by other agencies to control reverse flows in Old and Middle River ("OMR") and related Interior Delta flows, but the State Water Board neither requires that these permit conditions remain unmodified for the duration of the Bay-Delta Plan, nor does the State Water Board require or even suggest any actions if these permit conditions change in the future. As discussed *infra*, during the 18-plus years the State Water Board has spent updating the Bay-Delta Plan, state and federal agencies have repeatedly weakened OMR flow requirements, resulting in far less protective interior Delta flows and Delta outflows, even though the State Water Board has repeatedly found that the then-existing protections were inadequate to reasonably protect fish and wildlife and the public trust. *See infra*.

Indeed, two-and-a-half months ago the State Water Board asserted that the Biological Opinions for the CVP/SWP amended and adopted by the Trump Administration in 2025 through "Action 5" would further increase pumping in the Delta by weakening OMR reverse flow limits, causing additional harm to native fish and wildlife, stating that,

> Action 5 proposes to reduce or remove Old and Middle River (OMR) flow limitations and would result in more negative reverse flows which can lead to greater entrainment of fish into the interior Delta and direct and indirect mortality to California fish species, including possible population level effects. In addition, action 5 OMR changes contain requirements for triggering that lack specificity, are subjective, and establish criteria that may never be met.

State Water Board Letter to the U.S. Bureau of Reclamation re: Action 5 Assumptions and Environmental Compliance, dated Nov. 10, 2025, at 3; *see id*. at 4-7; *see* Recirculated SED at 13-44 (Admitting that changes to resulting from the 2024 biological opinions "would substantially increase CVP exports in April and May, with a concurrent decrease in Delta outflow and increase in net negative (reverse) Old and Middle River (OMR) flows.").[11] Because the criteria in state and federal ESA permits are subject to change during the duration of the Bay-Delta Plan, and because there is no obligation for the State Water Board to evaluate those changed permit criteria before they are deemed to achieve the objective, the Interior Delta Flows objective would be "achieved" regardless of the criteria in those state and federal permits. For instance, the proposed narrative objective would be the same if the CVP/SWP Biological Opinions require OMR flows not to exceed -2,500 cubic feet per second, -9,000 cubic feet per second, or eliminated requirements for OMR flows entirely. As the State Water Board recently noted, the Trump Administration's new coordinated project operations would at a minimum increase entrainment and loss (mortality) of fall-run Chinook Salmon by an additional 5 percent. *See id.* at 6. The California Department of Fish and Wildlife ("CDFW") expressed concern that the changed operations could increase loss of winter-run Chinook Salmon by as much as an order of magnitude. *See* CDFW Letter re Action 5 at 4 (noting potential risk of exceedance of Table

[11] The Recirculated SED fails to consider how Action 5 changed CVP operations and how it would change the results modeled with respect to the Interior Delta Flows, Delta Outflow, Cold Water Habitat, and Delta Inflow objectives, thereby failing to consider the whole of the action under CEQA.

184 limits for salmonids which are approximately ten times higher than documented take during water year 2025).

In addition to the potential shifting nature of these requirements, impacts to fall-run Chinook Salmon demonstrate why reliance on ESA standards to reasonably protect beneficial uses is inappropriate. The state and federal ESA compliance documents do not purport to protect non-listed species like fall-run; yet increased mortality of fall-run undoubtedly impacts viability, COMM, T-CUL, and the public trust. Yet the Plan fails to consider the effects of changes to the CVP/SWP state and federal ESA permits or require any future consideration or action in the face of further degradation of the protections those permits provide.

In addition, the SED notes that if the voluntary agreement is approved, under the incidental take permit the State Water Project could increase pumping in the months of April and May, resulting in more negative OMR flow conditions (and less Delta outflow) than what was analyzed in the recirculated SED. As a result, adoption of the Plan would eliminate interior-delta flow protections necessary to support the objective and reasonably protect beneficial uses. Because neither the objective nor the Plan provides a "limit or level" of flow conditions in the Interior Delta, the objective violates Porter-Cologne.

The Revised Draft Plan is unlawful because the program of implementation for this narrative objective only considers the minimum actions required by other agencies to protect endangered and threatened fish species. As a result, the narrative objective fails to consider what Interior Delta Flows are necessary to protect fall-run Chinook Salmon or other species that are not listed under the Endangered Species Act. While federal and state ESA compliance documents for the CVP and SWP can provide some incidental protection for fall-run Chinook Salmon, these restrictions are not intended to protect fall-run Chinook Salmon, do not include mortality limits for fall-run Chinook Salmon, do not include triggers that require more restrictive pumping to protect fall-run Chinook Salmon, and do not necessarily cover the entire migration period for fall-run Chinook Salmon.

Finally, while the narrative objective assumes that meeting minimum ESA protections in the Interior Delta would achieve a viable fish population, it fails to consider whether these protections would be adequate to achieve the greater abundance, productivity, and other fish population parameters that are necessary to achieve the Plan's objectives for salmon doubling, to support commercial and recreational fishing beneficial uses, or to support Tribal beneficial uses. Because the narrative objective ignores achieving the Plan's salmon doubling objective and the reasonable protection of the recreational and commercial fishing beneficial uses, and Tribal beneficial uses, it is unlawful.

IV. The Revised Draft Plan is Unlawful Because it Fails to Adequately Consider Future Uses of Water and Fails to Adopt Objectives that Reasonably Protect Fish and Wildlife in Light of these Future Uses of Water

The Revised Draft Plan violates Porter-Cologne because the State Water Board has failed to establish water quality objectives that adequately consider future uses of water and that reasonably protect fish and wildlife (and other) beneficial uses given known or reasonably foreseeable future uses of water. Instead of adopting water quality limits or levels that apply to existing water rights and to new or modified future water rights as required by law, the Revised Draft Plan defers the determination of what water quality objectives should apply to certain potential future water diversions to future proceedings.

When establishing water quality objectives, the State Water Board must consider "probable future beneficial uses of water," such as water supply projects like Sites Reservoir or the Delta Conveyance Project. Cal. Water Code § 13241(a). However, instead of establishing water quality objectives that ensure protection of beneficial uses in light of future water supply projects like Sites Reservoir, the Delta Conveyance Project, or groundwater recharge projects,[12] the Revised Draft Plan fails to determine whether the proposed water supply adjustments (WSAs) that reduce Delta inflow and outflow requirements in two-thirds of all years would apply to Sites Reservoir, the Delta Conveyance Project, or other future water supply projects. *See* Revised Draft Plan at 46. Instead, the Revised Draft Plan proposes to defer to future proceedings which water quality objectives in the Plan would apply to these potential future water rights, stating that,

> Whether, and to what extent, WSAs are applied to water rights obtained after December 31, 2025, including any permits issued after that date pursuant to applications filed by the State under Water Code section 10500, will be addressed as part of the processing of those water right applications consistent with section 4.4.9.1.

Id. As a result, the new narrative objectives in the Revised Draft Plan fail to establish a "level or limit" that applies to these and other future water supply projects, which both violates section 13050(h) of the California Water Code and which is also unlawful because it fails to ensure that the Bay-Delta Plan reasonably protects fish and wildlife in light of future uses of water.

The Draft SED and Recirculated SED demonstrate that approval of these and other future water supply projects could cumulatively reduce Delta inflow and outflow below baseline conditions, directly contradicting claims in the Recirculated SED that approval of the voluntary agreement or 55w/WSA alternatives would increase Delta outflow compared to baseline conditions. *The Draft SED shows that approval of these and other water supply projects could cumulatively reduce Delta inflow and outflow by 900,000 acre feet (AF) per year on average – more than the purported additions to Delta inflow and outflow from the voluntary agreement pathway. See*

[12] Similarly, the Revised Draft Plan fails to adequately consider other future uses of water, including actions by the Trump Administration to increase water diversions from the Bay-Delta watershed by the Central Valley Project, including the 2025 biological opinions and President Trump's executive orders calling for water diversions from the Bay-Delta watershed to be maximized. As discussed *supra*, the Plan's narrative Interior Delta Flow objective fails to establish levels or limits that would provide reasonable protection of fish and wildlife in light of these actual future uses of water.

Draft SED at 7.24-7 to 7-24-8 and Table 7.24-1. Similarly, the Recirculated SED finds that the Delta Conveyance Project could reduce Delta outflow by 477,000 acre feet per year compared to the baseline for that project, and that the incidental take permit issued by CDFW for the Sites Reservoir Project would reduce Delta outflow by 190,000 acre feet compared to the baseline for that project. Approval of these projects in the absence of adequate and relevant water quality objectives which apply to them will significantly reduce or eliminate any potential increase in Delta outflow (and Delta inflow, in the case of Sites Reservoir) from adoption of the voluntary agreement or 55w/WSA alternative. Because the Bay-Delta Plan fails to establish levels or limits for Delta inflow, Delta outflow, and other narrative objectives that adequately consider future uses of water and apply to all water rights, it is unlawful under Porter-Cologne.

Indeed, the Recirculated SED admits that these and other new water diversions "could affect interior Delta, Delta outflows, and water quality to varying degrees compared to baseline that could result in potentially significant cumulative impacts." Recirculated SED at 13-408. However, the Plan does not adopt specific levels or limits that would apply to future water diversions or adopt other requirements which ensure that the flow and water quality conditions modeled in the SED are reasonably certain to occur in light of potential future uses of water. Instead, the Plan would allow for continued declines in Delta inflows and outflows beyond those analyzed in the SED and Recirculated SED.

By failing to adequately consider future uses of water and future water diversions, the State Water Board's analyses assume without foundation that unregulated flows above minimum regulatory requirements will exist in the future—flows that provide substantial and necessary environmental benefits. However, as the State Water Board has explained repeatedly for over a decade, one of the primary impetuses for amending the Bay-Delta Plan was to address lack of regulatory requirements to ensure flows and water quality objectives that protect beneficial uses under existing conditions as well as in the future with new potential water diversions and climate change.

In its supplemental 2012 Notice of Preparation the State Water Board explained that,

> In considering potential changes to the Bay-Delta Plan, the State Water Board will be reviewing changes that should be made to water quality objectives and the program of implementation to protect beneficial uses in the Bay-Delta in the immediate future *under existing conditions* and *in the longer term with and without changes to the environment that may occur as the result of current planning efforts such as the BDCP.*

State Water Board, 2012 Supplemental Notice at 3 (emphasis added).

In 2017, the State Water Board explained that,

> With respect to flows, the Science Report explains how drastically the hydrology in the Bay-Delta watershed has been modified and how much further flows could be reduced without additional flow requirements… *Additionally, because existing Bay-Delta Plan flow requirements are far below current flow levels most of the time, additional regulatory requirements are needed to prevent flows from being substantially reduced in the future.*

State Water Board, Fact Sheet: Phase II Update of the Bay-Delta Plan: Inflows to the Sacramento River and Delta and Tributaries, Delta Outflows, Cold Water Habitat and Interior Delta Flows, Oct. 4, 2017 (emphasis added);[13] *see id*. at 7 ("In some tributaries where flows are currently significantly impaired (reduced below unimpaired levels), these new inflow requirements are needed to improve conditions for fish and wildlife in those tributaries and to provide for connection with the Delta and contribution of flow to the Delta. In other tributaries where flows are less impaired, new inflow requirements are needed to ensure that those flows are not reduced in a way that is harmful to native fish.").

The State Water Board's Final 2017 Scientific Basis Report repeatedly emphasizes that flows resulting from then-existing conditions were far greater than the flows generally required by the Bay-Delta Plan, and that a major purpose of this proceeding was to adopt new water quality objectives that protect at least some of these flows into the future given that then-existing conditions failed to reasonably protect fish and wildlife. *See, e.g.*, State Water Board, Final 2017 Scientific Basis Report at 1-5 to 1-6, 5-1 to 5-2, 5-7 to 5-8.

Similarly, in 2018, the State Water Board explained that,

> Though various state and federal agencies have adopted requirements to protect the Bay-Delta ecosystem, *the best available science indicates that the existing requirements are insufficient* and that a comprehensive regulatory strategy addressing the watershed as a whole is needed. Many of the current requirements in the Bay-Delta watershed are the sole responsibility of the Projects, including water quality objectives implemented by D-1641, two BiOps addressing Delta smelt and salmonids, and an ITP addressing longfin smelt. These existing requirements address only portions of the watershed and there are a number of tributaries that do not have any requirements to protect fish and wildlife, or that have minimal requirements. *Current conditions may be protective of fish and wildlife in some locations, but action is needed to ensure that conditions are not degraded in the future, and that conditions in the Bay-Delta improve based on more complete and coordinated watershed management.*

[13] Document available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/201710_phaseII_notice.pdf

State Water Board, July 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan, at 6 (emphasis added).[14] The State Water Board reached the same conclusion in 2010, in its Public Trust Delta Flows Report, which utilized a similar baseline and concluded that, "The best available science suggests that current flows are insufficient to protect public trust resources." State Water Board, Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, at 2.[15]

The Draft SED likewise explains that,

> Ex*isting regulatory minimum Delta outflows would not be protective of the ecosystem, and without additional instream flow protections, existing flows may be reduced in the future*, particularly with climate change and additional water development absent additional minimum instream flow requirements that ensure flows are preserved in stream when needed for the reasonable protection of fish and wildlife.

Draft SED at 1-9 (emphasis added).

Since the State Water Board began this regulatory proceeding in 2009, water diversions have increased and regulatory requirements to protect ecosystem services and water quality have been weakened and/or repeatedly waived resulting in less unregulated flow and worsening conditions for native fish species.[16] Altered hydrology due to climate change has, and will likely continue, to exacerbate this loss. *See, e.g.,* Draft SED at 1-9. However, the Revised Draft Plan fails to address the problem of relying on uncontrolled flows (flows in excess of minimum regulatory requirements), and the instream flows modeled in the SED are not "minimum instream flow requirements that ensure flows are preserved in stream when needed for the reasonable protection of fish and wildlife." *Id*. Indeed, the Recirculated SED never identifies the minimum required Delta outflow under the proposed plan amendments, and it never explains or considers how much of the Delta inflow and Delta outflow described in the Recirculated SED is actually required, and how much of that flow is considered uncontrolled flows that could be reduced in the future.

Instead, the State Water Board blithely asserts that the Revised Draft Plan "would prevent Delta outflow levels from being reduced to levels close to [the Minimum Required Delta Outflow]." Recirculated SED at 13-213. There is no evidentiary basis for this statement. As the Draft SED

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[14] Document available online at: https://www.waterboards.ca.gov/bay_delta/docs/sed/sac_delta_framework_070618.pdf.
[15] Document available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.
[16] As discussed *infra*, the analyses in the Draft SED and Recirculated SED have used a shifting – and unlawful – baseline, rather than using the conditions that existed in 2009 when the State Water Board first issued a Notice of Preparation under CEQA. As state and federal agencies weakened environmental protections and increased water diversions, the State Water Board included those weakened protections in the baseline condition.

explains, Delta outflow under baseline conditions is millions of acre feet greater than the minimum required Delta outflow, explaining that "average regulatory minimum Delta outflows are only about 5 MAF, or about a third of current average outflows and less than 20 percent of average unimpaired outflows." Draft SED at 1-9. Moreover, the State Water Board has repeatedly concluded that Delta outflow under baseline conditions fails to reasonably protect fish and wildlife, see, e.g., Draft SED at 7.6.2-39, let alone that Delta outflow under the minimum regulatory Delta outflow would wholly fail to provide reasonable protection of fish and wildlife. *See, e.g., id*. at 1-9. Indeed, the existing required minimum Delta outflow would fail to achieve nearly all of the ecological flow thresholds for fish relating to Delta outflow with sufficient frequency to support viability or the reasonable protection of beneficial uses. *See* Recirculated SED at 13-204; *see also* Table 1, *infra*.

Throughout this proceeding the State Water Board emphasized that the combination of new water diversions, changing environmental regulations, and the lack of an adequately protective Bay-Delta Plan mean that existing unregulated and environmentally beneficial flows – particularly the Delta inflows and Delta outflows that resulted from the 2008 and 2009 CVP/SWP Biological Opinions, which were far greater than the minimum flows required by the Bay-Delta Plan – were likely to decrease over time, further harming fish and wildlife beneficial uses. And the State Water Board has repeatedly concluded that the best available science demonstrated that those then-existing conditions failed to provide reasonable protection for fish and wildlife and the Public Trust. Those existing protections are being reduced permit by permit, and the Plan would do nothing to replace them, despite the overwhelming evidence demonstrating the need to do so.

The State Water Board has failed to provide a reasoned explanation why it has not adopted levels or limits for the objectives in the Bay-Delta Plan that apply to new and modified water rights as well as existing water rights, helping to ensure that flows identified and relied upon in the SED and Recirculated SED are reasonably certain to occur. Nor has the State Water Board explained why it has reversed its position and is deliberately ignoring its own findings, based on best available science, as it documented in detail in SWRCB 2010, 2012, 2017, 2018, and 2023. The science and evidence regarding the likely outcome of failing to dramatically improve freshwater flow conditions in the Bay-Delta have only become more alarming since this proceeding began; yet the State Water Board's proposed Revised Draft Plan and Recirculated SED ignore its own extensive record showing that this is so.

Instead of establishing objectives that apply to new and modified water rights as well as existing water rights, the Revised Draft Plan proposes to defer to a future discretionary proceeding the determination of what minimum Delta inflow and Delta outflow objectives to apply to these and other future water supply projects. Because the Bay-Delta Plan fails to adequately consider future uses of water, fails to establish levels or limits that apply to all water rights, including future uses of water, and fails to provide a reasoned explanation why it continues to rely on unregulated flows (which it admits are likely to be diverted in the future), the Revised Draft Plan violates Porter-Cologne. The failure to consider the conditions necessary to ensure that the Plan,

including existing and future water projects (including the two major projects currently pending before the State Water Board and other water supply projects, including groundwater recharge projects), would not unreasonably harm fish and wildlife, is arbitrary and capricious and inconsistent with the State Water Board's obligations under Porter-Cologne to ensure that the Plan provides reasonable protection of beneficial uses in light of probable future beneficial uses of water. *See* Cal. Water Code § 13241.

V. The Record Fails to Demonstrate that the Program of Implementation Will Achieve the Plan's Objectives and Provide Reasonable Protection of Fish and Wildlife, as Required by Law

State law requires that the program of implementation achieve the water quality objectives identified in a water quality control plan. *See* Cal. Water Code §§ 13050(j), 13242, 13247; *see also In Re SWRCB Cases* (2006) 136 Cal.App.4th 674, 726-729, 775, 778. The State Water Board has failed to demonstrate that the Program of Implementation is likely to achieve the Revised Draft Plan's water quality objectives, the State Water Board has failed to provide a reasoned explanation supporting its conclusions, and the administrative record demonstrates that the Program of Implementation will not achieve the Revised Draft Plan's water quality objectives.

A. The SED Fails to Accurately Assess Potential Effects of Adopting the Revised Draft Plan

The modeling used in the SED fails to accurately assess the hydrological and biological effects if the Revised Draft Plan is adopted, biasing the analysis and violating the State Water Board's legal obligations. In particular, the State Water Board has failed to adequately consider the effects of future water diversions, climate change, Temporary Urgency Change Petitions ("TUCPs"), and elements of the voluntary agreements, as well using baseline conditions that are less protective than those that existed in 2009 when the State Water Board began this regulatory proceeding (and which were used in the State Water Board's 2010 Public Trust Report and 2017 Final Scientific Basis Report).

First, as discussed *supra*, the modeling in the SED assumes no future water diversions are approved, even though pending water rights could increase water diversions by more than 900,000 acre feet per year, significantly reducing Delta inflows and Delta outflows. Because the modeling assumes continuing unregulated flows, much of the potential environmental benefits from either the voluntary agreements or proposed alternatives that include water supply adjustments are not likely to occur when future water diversions are approved, such as Sites Reservoir, Delta conveyance, and additional diversions for groundwater recharge.

Second, the State Water Board has failed to adequately consider the effects of climate change, because the modeling uses historical hydrological and meteorological data which does not adequately account for the existing effects of climate change over the past century, as well as the

increasing effects of climate change over the coming decades. As the model documentation for SacWAM admits,

> SacWAM uses a historical sequence of 94-years inflow hydrology and historical climate data to simulate both water supply and water demands. Currently, no climate change scenarios have been developed for the model.

State Water Board, Sacramento Water Allocation Model, Model Version 2023.06.12 Documentation, Draft, September 2023, at 11-5 The December 2025 model documentation shows that climate change was considered in determining the water supply adjustments, but does not show that climate change was used to modify the historical climate and hydrological data as is done with other models, like CalSIM 3: "The years 1992 through 2021 were used to represent current climate and hydrological conditions, based on the contemporary reference period used by the DWR to calculate adjusted historical hydrology for CalSim 3 (Schwarz et al. 2025)." Recirculated SED, Appendix H1a, at H1a3-13.

However, as the State Water Board is aware, climate change has already significantly altered hydrological and climatic conditions compared to the historic conditions that existed over the past century, including earlier snowmelt and earlier runoff, changed air and water temperatures, more severe droughts, and increased evapotranspiration. State and Federal agencies no longer use historical hydrology and climate data in modeling but instead use climate-transformed data ("adjusted historical hydrology"), because using historical hydrology and climate data fails to use the best available science and fails to accurately assess likely effects of changes in water diversions and water project operations. As a result, the modeling in *both* the Draft SED and Recirculated SED significantly underestimates water temperatures and likely impacts to salmon and other species that require cold water habitat, overestimates Delta inflows and Delta outflows under drier conditions, and fails to accurately assess water project operations.

Third, the Revised Draft Plan and SED fail to adequately consider the effect of TUCPs that have frequently been used over the past twelve years to waive water quality requirements by reducing Delta inflows and Delta outflows, especially during drought conditions. The State Water Board has established a pattern of waiving its water quality standards, granting temporary urgency change petitions (TUCPs) to Reclamation and DWR in six of 10 years between 2014 and 2023, despite the State Water Board's acknowledgement that these weakened water quality standards harm native fish populations, including those that are listed under the State or federal Endangered Species Acts (*see, e.g.*, SWRCB 2016 at 39-40; SWRCB 2022 at 22-34).

Part of the purpose identified in this update of the Bay-Delta Plan was to address the problems caused by reliance on only the state and federal water projects to meet the requirements of Decision 1641. *See, e.g.*, State Water Board 2018 at 5. However, rather than addressing this problem, the Revised Draft Plan simply assumes that the state and federal water projects would continue to bear sole responsibility for meeting the requirements of D-1641, even during drought conditions – where the evidence plainly demonstrates that the state and federal water projects

repeatedly fail to meet them. The Revised Draft Plan's only discussion of TUCPs is with respect to future periodic reviews, where it identifies "methods to reduce the incidence of temporary urgency change petitions related to Bay-Delta Plan requirements" as a topic for discussion in the future. Revised Draft Plan at 120. As State Water Board members articulated during their January 21, 2026 meeting, there is currently no process for addressing how to stop the State Water Board's reliance on TUCPs because it is not part of this update of the Bay-Delta Plan. *See* Jan. 21, 2026 State Water Board Meeting, Agenda Item 6. The terms "Temporary Urgency Change Petitions" and "TUCP" do not appear in the Recirculated SED. The State Water Board has failed to consider this important aspect of the problem, and the Revised Draft Plan fails to demonstrate that water quality objectives will be achieved in light of the use of Temporary Urgency Change Petitions, as we discuss *infra*.

Fourth, the voluntary agreements include numerous provisions that allow for releasing less water for Delta inflow and outflow than what is modeled in the SED. For instance, the voluntary agreements allow some flows to not be released to improve reservoir storage. *See, e.g.*, Revised Draft Plan at 68 (the proposed 100,000 acre feet of additional instream flow can instead remain in reservoir storage for temperature control in dry years and not be released that year). Other provisions in the voluntary agreements authorize shifting the timing of flow releases, which could substantially reduce instream flows in any given month, season, or year below what has been analyzed. *See id*. at 73-74 (providing that while the default schedule for the voluntary agreements would release 50 percent of the flows to the Sacramento River in April and 50 percent in May, flow flexibility allows for 0% of the water to be released in March, April, or May).

Fifth, the Recirculated SED fails to analyze or model changes in flows within the adaptive range, which would allow the State Water Board to further reduce Delta inflow and outflow requirements to 45 percent of unimpaired, even in the wettest one-third of years under the water supply adjustment alternative, rather than 55 percent of unimpaired. *See* Recirculated SED at 13-16 to 13-17. This could result in flows that are even lower than analyzed in the Recirculated SED.

Finally, the Draft SED and Recirculated SED both use baseline conditions that significantly underestimate the Delta inflows and Delta outflows that occurred in 2009, when this regulatory proceeding began, biasing the analysis. These issues are discussed in further detail in section IV and VIII of these comments.

For all of these reasons, the modeling in the Recirculated SED fails to accurately assess the likely effects of adopting the Revised Draft Plan, overstating potential environmental benefits and the likelihood of achieving the objectives, and understating the likely adverse effects on native fish species, and the communities that depend on them. This violates the State Water Board's duties under Porter-Cologne and the Public Trust, as well as CEQA.

B. The Record Fails to Demonstrate that the Program of Implementation will Achieve the Delta Inflow and Delta Outflow Objectives

The Recirculated SED's analysis of the Delta inflow and Delta outflow objectives focuses on two metrics: (1) the frequency of exceeding ecological flow thresholds; and (2) population responses to flow. As discussed below, neither analysis demonstrates that the Program of Implementation will achieve these narrative objectives, and the State Water Board fails to provide a reasoned explanation supporting its conclusion. Instead, the evidence demonstrates that neither the voluntary agreements nor the 55w/WSA alternatives will achieve the Revised Draft Plan's narrative Delta inflow and narrative Delta outflow objectives. In addition, as discussed briefly below, the voluntary agreements are unlawful because this alternative fails to provide the "relative magnitude, duration, timing, quality and spatial extent of flows as they would naturally occur" necessary to achieve the Delta inflow objective and because it does not achieve the Inflow Based Delta Outflow objective.

1. The State Water Board's Analysis of the Frequency of Exceeding Ecological Flow Thresholds Fails to Demonstrate that the Program of Implementation will Achieve the Plan Objectives

As part of its analysis, the State Water Board identified "ecological flow thresholds"[17] and analyzed how frequently these thresholds would be exceeded under the voluntary agreements[18] and 55w/WSA alternatives[19] compared to baseline conditions. Unfortunately, the State Water Board failed to consider how frequently these thresholds must be exceeded in order to support or maintain viable native fish populations or achieve the salmon doubling objective. Because most of these fish populations are declining under baseline conditions, merely showing that an alternative increases the frequency of exceeding a flow threshold does not demonstrate that populations will be viable; instead, the State Water Board must demonstrate that the increased frequency is sufficient to reverse the decline and lead to population growth characteristic of viable populations.

In addition, because the Recirculated SED fails to compare results from the voluntary agreements and 55w/WSA alternatives to each other or with the alternatives presented in the 2023 SED, we combined these results, along with additional documented ecological flow thresholds and exceedance frequencies for each threshold under the Board's other unimpaired flow alternatives (*see* Table 1, *infra*), as estimated based on modeling performed by the State Water Board.[20] We also provide biological context for the frequency of flow thresholds that

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[17] *See* Recirculated SED Table 13.5-1 at 13-197.
[18] *See* Recirculated SED Table 13.5-5 at 13-204.
[19] *See* Recirculated SED Table 13.5-8 at 13-211.
[20] Table 1 omits several metrics offered as "flow thresholds" in the Draft SED and Recirculated SED. Whereas we appreciate the incorporation of updated thresholds (e.g., for Chinook Salmon and Delta Smelt) that reflect new scientific findings, several of the State Water Board's previously identified thresholds are no longer considered to be ecologically significant metrics, including those supposed to indicate "Georgiana Slough Flow Reversal" and those

might plausibly be consistent with attainment of the State Water Board's objectives and other requirements.

relating Rio Vista Flow levels to survival of outmigrating Chinook Salmon (*see* Perry et al. 2018; Hance et al. 2022). Inclusion of these outdated threshold frequencies in the State Water Board's analysis of the voluntary agreements' and WSA's potential to achieve Plan objectives is inappropriate, though it does not change the fundamental finding that proposed alternatives fail to significantly improve upon the status quo.

Table 1: *Frequency of flows identified as protective of fish, wildlife, and estuarine habitat, expressed as a percentage of years in which thresholds are exceeded when unregulated flows are included.*[21] *Adapted from Recirculated SED Tables 13.5-5 & 13.5-8. Adds protective flow thresholds and alternatives not depicted in the Recirculated SED. Red fill represents decline from baseline, orange fill indicates no change from baseline, and yellow fill indicates ≤2% (absolute value) increase from baseline frequency.*

				Alternative						
Ecological Flow Threshold	**Flow in cfs *Reference****	**Season**	**Baseline (2025)**	**VA**	**55 w/WSA**	**35% UIF**	**45% UIF**	**55% UIF**	**65% UIF**	**100% UIF**
Late-fall run and Winter-run **Chinook Salmon** outmigration	35,300 (Freeport)	Dec-May	28%	28%	28%	28%	28%	30%	33%	48%
Spring-run and fall-run **Chinook Salmon** outmigration	35,300 (Freeport)	Apr-May	17%	17%	19%	17%	18%	19%	26%	52%
Fall-run, Winter-run, Spring-run **Chinook Salmon** outmigration @ Wilkins Slough	10,700 (Wilkins Slough)	Mar-June	29%	29%	34%	30%	30%	34%	42%	59%
Fall-run, Winter-run, Spring-run **Chinook Salmon** fry presence	17,700 (Freeport)	Dec-June	51%	52%	60%	52%	57%	62%	67%	77%
Fall-run, Winter-run, Spring-run **Chinook Salmon** fry abundance	26,500 (Freeport)	Dec-June	34%	35%	37%	34%	35%	39%	44%	60%
Bay Shrimp (low)	20,000	Mar-May	52%	53%	64%	59%	67%	73%	81%	95%
Bay Shrimp (high)	25,000	Mar-May	43%	45%	51%	48%	51%	62%	69%	89%
Estuarine Zooplankton Flows above which *E. affinis* abundance increases in Suisun Bay	30,000 *Hennessy & Burris 2017a,b*	Mar-June	29%	27%	32%	30%	33%	41%	47%	73%
Estuarine Zooplankton Flows above which *Mysid* shrimp abundance increases	40,000 *Hennessy & Burris 2017a,b*	Mar-May	24%	25%	26%	25%	25%	28%	37%	68%
Estuarine Zooplankton Flows above which *P. forbesi* abundance increases in Suisun Bay	6,500 *Hennessy & Burris 2017a,b*	Jun-Sept	46%	47%	52%	48%	53%	56%	65%	96%
Longfin Smelt	43,000	Jan-Jun	30%	29%	32%	30%	31%	32%	34%	55%
Delta Smelt	10,200	June-Aug	22%	22%	32%	22%	26%	34%	42%	81%
Sacramento Splittail (low)	30,000	Feb-May	39%	39%	45%	44%	51%	54%	62%	83%
Sacramento Splittail (high)	47,000	Feb-May	25%	25%	27%	26%	27%	29%	31%	61%
Starry Flounder Midpoint of "Below Normal" year Range	35,500 *SWRCB 2010*	Apr-May	23%	23%	24%	25%	25%	29%	35%	66%
Starry Flounder	21,000	Mar-June	45%	47%	53%	49%	52%	63%	72%	91%
Green Sturgeon and White Sturgeon	37,000	Mar-July	16%	16%	18%	16%	16%	19%	23%	51%
Collinsville (7,100)	7,100	Jan-Jun	99%	99%	99%	99%	99%	99%	100%	100%
Chipps Island (11,400)	11,400	Jan-Jun	80%	86%	87%	85%	89%	94%	95%	100%
Port Chicago (29,200)	29,200	Jan-Jun	40%	42%	45%	42%	46%	48%	54%	77%

* Unless otherwise specified, location is Delta Outflow and reference is Recirculated SED Table 13.5-1

The analysis of Delta flow threshold frequencies provides no evidence that the voluntary agreements will support and maintain natural production of viable native Chinook Salmon or other fish populations. In fact, the analysis shows that in many cases, the voluntary agreements

[21] VA Delta outflow from file "Delta_Outflow_to_FOR.xlsx" sent to Greg Reis by Matt Holland on 1/22/2026. All other data are from "SacWAM model files SacWAM_2025.08.28_Hist_all_results. WEAP" and SacWAM_2025.08.06_Hist_UF_SJBase.WEAP and the post-processing files SacWAM_20250828_PostP_VA.xlsm and SacWAM_20250828_PostP_UF.xlsm, downloaded from the SWB's FTP site in January 2026.

and/or 55w/WSA alternatives would achieve the flow thresholds only as frequently as under the degraded baseline, meaning these alternatives would maintain the status quo of declining fish populations, rather than fish populations that can grow at rates consistent with viability. *See* Recirculated SED at 13-211 (explaining that the frequency of exceeding these flow thresholds under the voluntary agreements "would generally remain unchanged" in many cases). Examples of key flow thresholds that are exceeded at only the same frequency as under baseline conditions include:

- high rates of in-river or through-Delta survival for Chinook Salmon smolt of any of the four Chinook Salmon runs (Wilkin's Slough flow ≥10,700 cfs from Mar-Jun; Delta inflow at Freeport ≥35,000 cfs between Dec-May);
- population growth of Delta Smelt (Delta outflow 10,200 cfs from Jun-Aug);
- Sacramento Splittail abundance (both the "low estimate" of Delta outflow (30,000 cfs) and the "high estimate" of Delta Outflow (47,000 cfs) during Feb-May);
- reproductive success for Green Sturgeon and White Sturgeon (Delta outflow 37,000 cfs between Mar-Jul).

Even worse, the frequency of exceeding some important threshold flows is expected to *decrease* under the voluntary agreements relative to baseline. *Id*. at 13-211. This means the voluntary agreements are expected to provide the flows necessary to support viability of native fish populations and other beneficial uses *less often* than (already inadequate) baseline flows for:

- Longfin Smelt population growth (Delta outflow 43,000 cfs from Jan-Jun);
- abundance of the key invertebrate fish prey, *Eurytemora affinis*, in the open waters of the estuary that are habitat for pelagic fish species and waterbirds (Delta outflow 30,000 cfs during Mar-Jun).

Furthermore, that flows that support the estuarine food web (i.e., Bay Shrimp and other estuarine zooplankton) – a key element of estuarine habitat – will occur only marginally more frequently, and in at least one case, less frequently, under the VAs that under baseline conditions. This indicates that the VAs will not protect estuarine habitat better than baseline conditions.

In the San Francisco Bay-Delta estuary, Delta inflows and Delta outflows under the status quo result in numerous fish species that are not currently viable and a failure to reasonably protect beneficial uses. Reductions in the frequency of achieving protective flow conditions, or simply maintaining baseline conditions, is not consistent with attaining the State Water Board's objectives or reasonable protection of beneficial uses. Even in those cases where the voluntary agreements are expected to increase the frequency of protective flows, these "improvements" are tiny (almost always ≤2%, *see* Table 1) and extremely unlikely to result in achieving the Plan's objectives or providing reasonable protection of fish and wildlife and other related beneficial uses of water in light of the ongoing declines under baseline conditions.

In general, ecologically relevant flow thresholds under the 55w/WSA alternative will occur less frequently than needed to support and maintain the natural reproduction of viable native fish populations. Although the proposed 55w/WSA alternative is projected to attain most key ecological thresholds at higher frequencies than the voluntary agreements alternative,[22] the State Water Board provides no evidence that estimated improvements over baseline will be sufficient to attain the Plan's objectives or reasonable protection of beneficial uses. That is because the State Water Board fails to identify how frequently these ecological flow thresholds must be exceeded in order to support a viable fish population (or to achieve the narrative salmon protection objective), which is particularly critical in light of the continued decline of these fish populations under baseline conditions. Instead of considering this important aspect of the problem, the State Water Board appears to simply equate any improvement from baseline conditions with achieving fish viability and reasonable protection of fish and wildlife beneficial uses.

As a first approximation, flows that support viability (i.e., those associated with relatively high survival, reproduction, abundance, and spatial distribution; McElhaney et al. 2000) should occur, on average, at least once within the average spawning interval[23] of the relevant organism. But this is not the case for the proposed 55w/WSA flow regime (or the voluntary agreements flow regime). For example, flows that support successful reproduction of Green Sturgeon and White Sturgeon would still occur in less than 1 out of 5 years, on average, under the 55w/WSA alternative (and voluntary agreement) — too infrequently to support viability of a population in which adult females prepare to spawn every 2-4 years (Moyle 2002; Baykeeper et al. 2024 comments). Similarly, the Recirculated SED indicates that flows which support high survival of outmigrating juvenile late-fall run Chinook Salmon and endangered winter-run Chinook Salmon (35,300 cfs at Freeport) will occur less than once a generation[24] on average under the proposed 55w/WSA alternative – the same as under baseline conditions and the voluntary agreements. *See* Recirculated SED at 13-204.

The frequency of supportive flow conditions is inadequate under both the voluntary agreements and 55w/WSA alternatives despite the fact that the Recirculated SED overestimates the frequency of exceeding ecologically important thresholds. As discussed herein, the Revised Draft Plan fails to ensure that the Delta outflows and Delta inflows modeled in the Recirculated SED are likely to result, given the effects of climate change and future diversions of water. For example, modeling of Delta Conveyance Project operations reveals that it is expected to reduce the frequency of threshold flows associated with Chinook Salmon smolt survival through the

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[22] *See* Recirculated SED at 13-204 (Table 13.5-5).
[23] Spawning interval is the time between episodes of female reproductive readiness, or generation length for organisms that die after their first spawning (i.e., semelparous organisms).
[24] Chinook Salmon populations in California's Central Valley have an average generation length of 3 years. Because these fish spawn only once (adults die soon after spawning), it is particularly important that conditions that support reproductive success occur relatively frequently – any prolonged, multi-year gap in suitable conditions would soon lead to extinction. It is highly unlikely that a Chinook Salmon population would naturally persist in an ecosystem where good spawning and rearing conditions did not occur with reliably high frequency.

Delta, habitat use by Chinook Salmon fry, estuarine habitat formation, White Sturgeon and Green Sturgeon reproductive success, and Delta Smelt and Longfin Smelt population growth, among others, as the attached exhibit demonstrates. *See* Baykeeper 2025 at 45. The difference between flow exceedance frequencies for key ecological thresholds under the assumptions modeled by the State Water Board (which include flows in excess of required limits, e.g., due to flood control operations) and a system in which unregulated flows are diverted by existing and new facilities is illustrated by contrasting the State Water Board's previous analyses of ecological threshold flow frequency. *See* Scientific Basis Report (SWRCB 2017 at 5-31), Table 5.3-3 compared to Table 7.6.2-5 in the Draft SED (SWRCB 2023); *see also* Baykeeper et al. 2024 at 85).

2. The State Water Board's Analysis of Population Responses to Flow Fails to Demonstrate that the Voluntary Agreements or 55w/WSA Alternatives Achieve the Narrative Objectives

Fish and wildlife and their habitat often respond linearly to changes in flow above or below threshold levels. *See* SWRCB 2010, 2017. For example, Longfin Smelt, Starry Flounder, Sacramento Splittail, and Bay Shrimp populations (and others) respond positively to increases in winter-spring flow above and below thresholds for net population growth presented by the State Water Board. The Recirculated SED estimates the response of these four Bay-Delta populations to flow changes under the voluntary agreement and 55w/WSA alternatives using well documented flow-abundance relationships. *See* Kimmerer 2002; *see also* SWRCB 2017, 2023 appendix g2 at 5-21. Again, the Recirculated SED presents these results separately;[25] we compiled them below to facilitate direct comparisons (Table 2).

Table 2: *Average projected change in abundance compared to baseline by water-year type for Longfin Smelt and Starry Flounder under VA and WSA alternatives, as presented in the Recirculated SED (Figures 13.5-4 & 13.5-8). Geometric mean reflects implied annual average change, weighted by the frequency of water year types in the period 1980-2014.*

Average Projected Change in Abundance Compared to Baseline by Water Year Type Under VA & WSA Alternatives. Water-year type frequencies in SacWam modeling (not the empirical distribution for 1980-2024) are presented in parentheses, for reference.												
	Critical (16%)		Dry (22%)		Below Normal (19%)		Above Normal (12%)		Wet (30%)		Avg. Projected Change (Geometric Mean; 1980-2024)	
	VA	WSA	VA	WSA	VA	WSA	VA	WSA	VA	WSA	VA	WSA
Longfin Smelt	4%	8%	11%	20%	2%	16%	2%	7%	0%	2%	3.74%	9.18%
Starry Flounder	3%	4%	8%	11%	2%	10%	1%	5%	0%	2%	2.76%	5.69%

[25] *See* Figures 13.5-4 for the WSA alternative and 13.5-8 for the VAs.

Although the Recirculated SED does not analyze population abundance response to previously described unimpaired flow alternatives (e.g., 55% and 65% of unimpaired flow) of these four estuarine-dependent organisms, earlier modeling results by the State Water Board show dramatic increases in median abundance in the 65% UIF alternative relative to the 55% alternative (and again as flows increase under the 75% UIF alternative). *See* Draft SED, Appendix B Table 5.3-4 at 5-32; *see also,* e.g., Recirculated SED at 13-538 ("Under the starting point for the regulatory pathway (55 w/WSAs), the flow-related ecological benefits and associated beneficial fishery related economic effects could be lower compared to the 55 scenario"). Indeed, the Recirculated SED admits that beneficial effects under the 55w/WSA alternative are most similar to effects under the Low Flow Alternative and would be less than the ecological benefits under the 55 percent of unimpaired flow alternative. *See, e.g.,* Recirculated SED at 13-538, 13-540; *id.* at 13-540 ("Under the starting point for the regulatory pathway (55 w/WSAs), since changes in hydrology would be generally less than the 55 scenario and more similar to the Low Flow Alternative, the beneficial economic effects associated with ecosystem services would also be expected to be similar to the Low Flow Alternative.")

The Recirculated SED presents results of its abundance effect analysis as the median population response to flow alternatives by DWR's water-year type classification. This is misleading for many reasons, including because DWR water year types do not occur with equal frequency, and because populations must persist through a time series with different water year types. For example, Table 2 reveals that the geometric mean of annual projected population changes for the 1980-2014 period would have been only 3.74% for Longfin Smelt and 2.76% for Starry Flounder under the voluntary agreements. Note that the smallest projected effects (i.e., 0% change from baseline, for the voluntary agreements) occur in the Wet year type, which is the single most frequent year-type category. Also, improving population abundance implies that average population growth rate could increase (or become less negative) under the proposed alternatives via the compounding effect of serial increases in spawning stock.

To evaluate project level impacts on abundance using results presented in the Recirculated SED, we first compared the implied average change in abundance indices for two populations, Longfin Smelt and Starry Flounder,[26,27] if expected improvements associated with the voluntary agreement and 55w/WSA alternatives had been applied in 1995 (the onset of current Bay-Delta Water Quality Control Plan requirements, and the first 15 years of sampling by the Bay Study). This backward-looking analysis involved simply adjusting empirical abundance indices reported by CDFW by the percentage change associated with each year's water-year type (Recirculated

[26] Longfin Smelt Fall midwater trawl index data are from CDFW, available here: https://apps.wildlife.ca.gov/FMWT. Starry Flounder Bay Study otter trawl index data obtained from CDFW's San Francisco Bay Study and the Interagency Ecological Program for the San Francisco Estuary, January 13, 2026 email from K. Heib.

[27] Longfin Smelt and Starry Flounder are estuarine pelagic species that are unlikely to be affected by non-flow "habitat" measures described in the proposed Plan updates. Issues with data quality and availability prevented analysis for Sacramento Splittail and Bay Shrimp. For example, the CDFW has not updated its Bay Shrimp indices for approximately a decade (K. Hieb, CDFW, personal communication).

SED Figures 13.5-4 & 13.5-8; Table 2) and calculating a new average for the most recent 15-year period, 2009-2024 (Figure 1). This method does not address the potential compounding effect of increased population growth, and (assuming the abundance increases projected in the Recirculated SED materialize) should be considered a low bound on the estimated effect of the voluntary agreements and 55w/WSA alternatives.

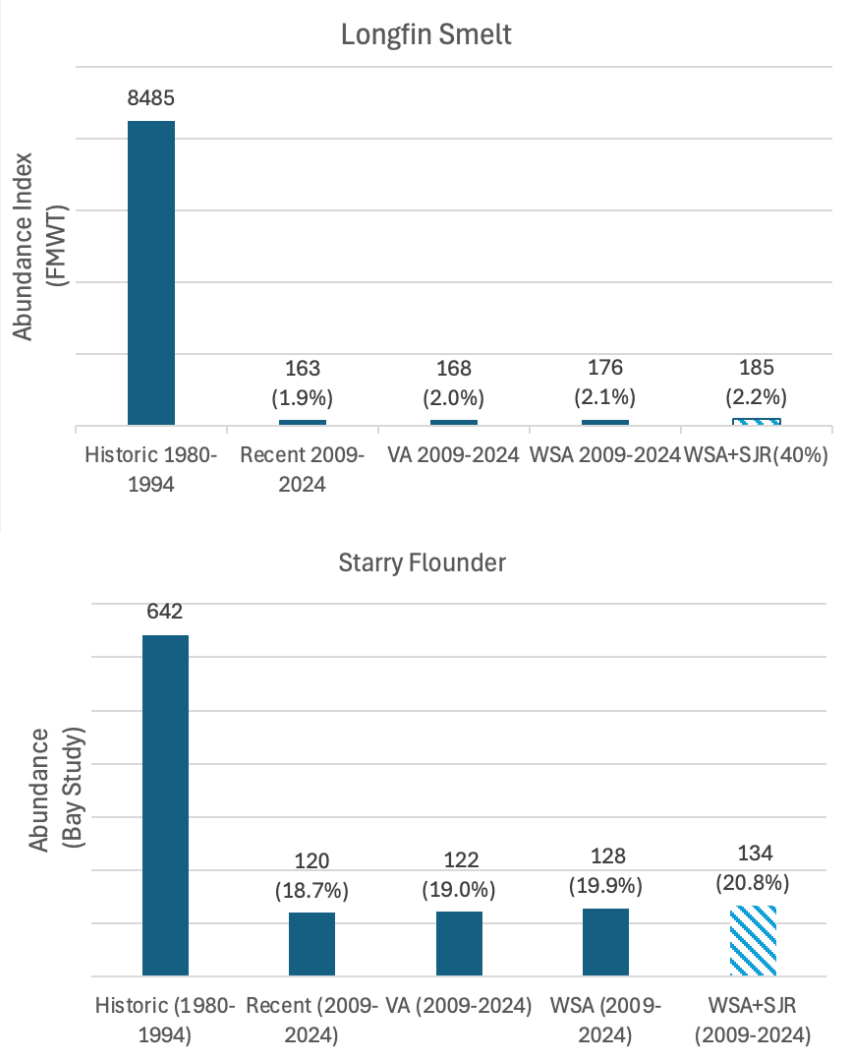

Figure 1: *Average index values for Longfin Smelt (Fall-midwater Trawl) and Starry Flounder (Bay Study Otter Trawl) in historic and recent periods, and estimated abundance indices for the recent period under three flow regime scenarios presented in the Recirculated SED. Numbers in parentheses depict recent actual and projected recent average abundance indices as a percentage of the historic abundance index. Scenario estimates derived from expected water-year type median population abundance effects (Recirculated SED Figures 13.5-4 and 13.5-8; see Table 2) when water-year types occur at the frequency of the 2009-2024 period. See*

Recirculated SED Figures 13.5-4 and 13.5-8. This method assumes no compounding effect of projected water-year type increases in annual abundance (i.e., no stock-recruit effect). Results of the WSA+SJR (40%) scenario are provided for comparison only; this scenario is not an alternative considered in this proceeding.

The results of this analysis show that Longfin Smelt and Starry Flounder abundances would still have declined precipitously relative to historic (1980-1994) levels under the voluntary agreement or 55w/WSA alternatives, resulting in negligible differences in recent average abundance compared to empirical results for the recent period. *See* Figure 1. It does not provide evidence that any of the flow scenarios considered in the Recirculated SED would be likely to reverse the catastrophic declines in Longfin Smelt and Starry Flounder that have been observed over the last 45 years, or that they would do so in the future if adopted by the State Water Board. .

Secondly, to place the projected "improvement" in population abundance in the context of the ongoing trend of rapid decline in these two populations, we estimated the average change in population growth rate represented by the population level effects described in the Recirculated SED.[28] For both the Longfin Smelt and Starry Flounder populations, this involved calculating:

1) changes in abundance ("λ") at a time step equal to the species' spawning interval (roughly 2 years for Longfin Smelt (Moyle 2002; SWRCB 2017) and roughly 3 years for Starry Flounder (Ralston 2005))
2) historical average instantaneous population growth rates ("$r_{historical}$") for each species using the relationship: r=ln(geometric mean(λ))
3) expected incremental changes in average population growth ("Δr") for the voluntary agreements, proposed WSA, and WSA+ SJR(40% UIF) scenarios[29] based on water-year type estimates presented in the Recirculated SED (Figures 13.5-4 and 13.5-8; *see* Table 2[30]) and the distribution of year types over the 45-year period from 1980-2014,
4) new expected average instantaneous population growth rates ("r_{new}"), by adding the empirical rate, $r_{historical}$, to the incremental increase in r (Δr) resulting from each scenario.

This analysis assumes a compounding effect of annual increases in population associated with each flow alternative, i.e., strong stock-recruit effects. Because stock-recruit effects, when detected at all in fish populations, are often weak and may be negative (e.g., Nobriga and Rosenfield 2016), this method very likely overestimates the true effect on average population growth rates of incremental annual increases in abundance projected for each flow scenario.

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[28] Recirculated SED Figures 13.5-4 and 13.5-8; *see* Table 2

[29] The WSA + 40%SJR flow scenario is not a specific alternative under consideration in this proceeding, and neither the Draft SED nor Recirculated SED provide results for all alternatives that include the flow that would result from implementing the 2018 Bay-Delta Plan amendments. Results are presented for reference.

[30] Geometric means for ("Δr") were calculated as the geometric mean of: [1+median change projected in in the Recirculated SED] for each year. Adding 1 to the projected incremental change reflects that these are changes in population growth rate from an existing level and avoided issues related to use of zeros in calculation of the geometric mean.

Assuming the projected abundance increases in the Recirculated SED materialize, this method provides an upper bound of the estimated potential effect of the voluntary agreement and 55w/WSA alternatives.

Table 3: *Historic instantaneous population growth rates ("r") for two estuarine pelagic species, as estimated from successive changes in abundance indices through time, and implied population growth rates under different flow scenarios, as derived from estimated change in population abundance by water-year type and the frequency distribution of those water year types historically.* See *Recirculated SED Figures 13.5-4 and 13.5-8. This method assumes a complete compounding of annual population effects in each scenario (e.g., via stock-recruit effects) that are unlikely to be very strong in the wild. Thus, r_{new} estimated here are likely to represent an upper bound on improvements in instantaneous growth rate under the flow scenarios relative to the historical rate.*

Actual ("r") and Implied Instantaneous Population Growth Rates ("r_{new}")				
	Historic r (1980-2024)	VA r_{new}	WSA r_{new}	WSA+40% SJR[31] r_{new}
Longfin Smelt	-0.198	-0.164	-0.109	-0.047
Starry Flounder	-0.138	-0.110	-0.082	-0.040

Each flow scenario studied resulted in a negative estimated r_{new}. Negative values of r_{new} reflect ongoing population decline trends under the associated alternatives; persistent negative population growth indicates lack of population viability. *See* McElhany et al. 2000; Lindley et al. 2007. For both Starry Flounder and Longfin Smelt, the effect of increasing Delta outflows is apparent; the population trends associated with r_{new} become less negative under scenarios that result in greater Delta outflow. But none of the scenarios was estimated to reverse or even halt historical population declines for either Longfin Smelt or Starry Flounder, and the method of estimating cumulative effects of annual improvements represents a generous upper bound to the actual effect on "r". In other words, there is no indication from the Recirculated SED's population impact estimates that the voluntary agreement or 55w/WSA alternatives would achieve Plan objectives or prevent the elimination of beneficial uses associated with these two fish populations.

These analyses clearly illustrate, applying the State Water Board's own results, that simply "improving" conditions is not necessarily sufficient to attain the proposed Delta inflow and outflow objectives or the fish viability narrative objective. This is true for the comparison of the voluntary agreement alternative to the baseline, and for the proposed 55w/WSA approach relative to the baseline. To achieve viability, Plan updates will need to improve population growth rates *enough* to actually *reverse declines* and *increase abundance* in a reasonable time frame. The analyses we present here can be used to evaluate whether a given flow alternative is likely to result in positive population growth. Alternatives that produce more Delta outflow in the

[31] *See* note 18, *supra.*

appropriate season than the WSA+SJR(40%) scenario would be expected to show further reductions in the rate of population decline. But neither the VA nor the proposed WSA alternatives are expected to achieve population growth rates that would lead to viability – at best, they will simply delay extinction of these native fishes and elimination of associated beneficial uses.

Furthermore, our analyses clearly indicate that neither alternative would result in attainment of the State Water Board's own goals for the Bay-Delta's Starry Flounder and Longfin Smelt populations. The State Water Board previously declared its population abundance goal for Starry Flounder as: "… to maintain the starry flounder population abundance index, as measured by the San Francisco Otter Trawl Study, in half of all years above the long term population median index value of 293" (SWRCB 2010 at 82). For Longfin Smelt, the State Water Board previously declared: "The immediate goal is to stabilize the longfin smelt population, as measured by the FMWT index, and to begin to grow the population. The long-term goal is to achieve the objective of the Recovery Plan for the Sacramento/San Joaquin Delta Native Fishes (USFWS 1996). The plan states that longfin smelt will be considered recovered when its abundance is similar to the 1967 to 1984 period" (SWRCB 2010 at 68)[32]. Results presented in Figure 1 and Table 3 demonstrate that neither of these previously stated goals will be attained under the voluntary agreement or 55w/WSA alternatives.

Other analyses provide further evidence that the voluntary agreements will not meaningfully improve conditions for native fish and wildlife populations and could worsen conditions compared to the status quo. The 2024 federal environmental impact statement for long-term operations of the Central Valley Project ("2024 LTO FEIS") analyzed the proposed voluntary agreement as part of its preferred alternative. Biological analyses in the 2024 LTO FEIS indicated that the proposed CVP operations (which were subsequently adopted) plus flows pledged in the VA alternative, would result in[33]:

- abundance declines for White Sturgeon, a result of reduced Delta outflows during Wet years[34]

[32] For reference, the 1967-1994 average fall midwater trawl abundance index for Longfin Smelt was ~18,700.
[33] Reference to the 2024 FEIS analyses does not indicate agreement with that modeling. We present these results to illustrate that other analyses of the voluntary agreements – including analyses by a necessary party to the voluntary agreements – have not produced evidence that this alternative would achieve Water Quality Control Plan objectives or to reasonably protect beneficial uses.
[34] *See* 2024 LTO EIS Appendix J Attachment J. 2, Table J.2-5, available at https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=55291.The 2024 LTO FEIS actually underestimates the negative impact to White Sturgeon under the VAs because it incorrectly models the flow-abundance relationship for White Sturgeon across all water year types despite the fact that White Sturgeon reproduce successfully only in high flow years (SWRCB 2017; Fish and Game Commission 2024), the very years in which the VA results in reduced Delta outflows. *See* Recirculated SED Table 13.4-89 at 13-115. This means that the analysis incorrectly assumes a positive effect of small increases in Delta outflow projected for non-Wet years (an erroneous positive effect that still fails to mitigate for the (artificially low) negative effect in Wet years estimated by the FEIS).

- negative population growth for Delta Smelt, the combined effect of a slight improvement in population growth in drier years and reduction in wetter years relative to the 2024 LTO FEIS' baseline, the 2019 Biological Opinion[35]
- reductions in returns of winter-run Chinook Salmon in most years relative to both the No Action Alternative and a variant of the same alternative that excluded VA flowshttps://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=55306[36]

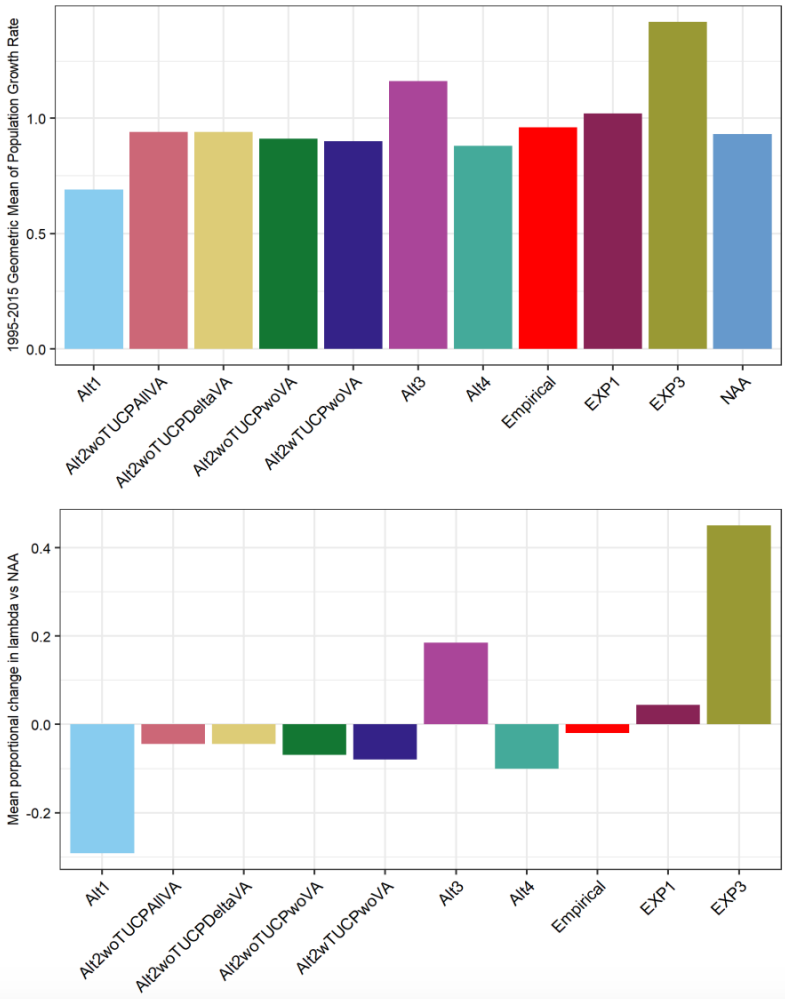

Figure 2: *Top panel – modeled geometric mean population growth rates for Delta Smelt under alternative coordinated operations of the CVP and SWP considered in the 2024 LTO FEIS. By the metric used here, values less than 1 represent negative average population growth rates. Bottom panel – difference in estimated average growth rate between labelled alternatives and*

[35] *See* Appendix F, Lines of Evidence Modeling Attachment F.4 Table F.5-12; *see also* Figure 2, below.
[36] *See* 2024 LTO FEIS Appendix F Modeling Attachment F.5 5 Table F.5-12, available at: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=55306.

the no action alternative. Negative numbers indicate the labelled alternative resulted in lower population growth than the no action alternative.[37]

It is not surprising that the voluntary agreement and 55w/WSA alternatives are not projected to result in positive population growth for native fish species. The proposed voluntary agreements are expected to result in Delta inflow (Figure 13.4-29, Table 13.4-74) and Delta outflow (Figure 13.4-37) during ecologically critical periods of most years that do not differ substantially from the status quo (assuming that current unregulated outflows remain undiverted). On average, outflows under the VA are projected to increase by just 0.8% overall, and only 1.1% during winter-spring months, when most native fishes reproduce and/or migrate through the Delta. *See* Recirculated SED Tables 13.4-89 and 13.4-91; *see also* Table 4. Indeed, median flows are expected to be lower under the voluntary agreement than under baseline in Wet year types, which represent 30% of years. These are the only years in which White Sturgeon are likely to spawn successfully; reproductive success in those years when conditions support spawning is flow-dependent. Similarly, Longfin Smelt are likely to experience positive population growth (which again, is flow-dependent) mainly in Wet year types, but the proposed voluntary agreements would reduce flows that support successful reproduction during those years. In addition, reductions in Delta outflow in the summer and fall months, particularly under the voluntary agreements, would likely worsen the proliferation of harmful algal blooms, particularly in drier years, and harm Delta Smelt. *See* Recirculated SED at 13-115.

[37] Copied from Figure F.4-9 2024 LTO EIS Appendix F Attachment 4. Document available online at: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=55307.

Table 4: *Average change in winter-spring and total annual Delta outflows relative to baseline expected under the VA. Values assume current water development infrastructure and no additional capture of unregulated river flows.*

Average Total **January–June Delta Outflow** by Water Year Type for the VA Scenario (Modified from Recirculated SED Table 13.4-89)				
Water Year Type	Frequency of WY Type (%)	Baseline (TAF/yr) VA:	Change from Baseline (TAF/yr)	% Change From baseline
C	16%	3,555	107	3.0%
D	22%	5,025	398	7.9%
BN	19%	8,064	131	1.6%
AN	12%	14,056	188	1.3%
W	30%	22,447	-78	-0.3%
All	100%	11,745	130	1.1%
Average Total **Annual Delta Outflow** by Water Year Type for the VA Scenario (Modified from Recirculated SED Table 13.4-91)				
C	16%	5,447	85	1.6%
D	22%	7,324	452	6.2%
BN	19%	10,667	99	0.9%
AN	12%	17,967	170	0.9%
W	30%	28,837	-106	-0.4%
All	100%	15,472	122	0.8%

The State Water Board's analysis (and the 2024 LTO FEIS) also likely overestimates any positive population level effects of flow modifications under the voluntary agreement and 55w/WSA alternatives because of the failure to protect all flows that currently provide benefits to native fishes. The Recirculated SED acknowledges:

> "…*If implemented, [new water development projects] would be expected to reduce the benefits shown for the 55 w/WSAs scenario; the 45, 55, and 65 scenarios …; and the VA pathway. A higher proportion of Delta outflow is unprotected in wetter years, and these projects, as proposed, would generally reduce Delta outflow the most in wetter year types.* … The extent to which new projects could affect the benefits would depend on the constraints imposed on those projects and the resulting levels of increased diversions and decreased Delta outflows."

Recirculated SED at 13-213 (emphasis added). There is no question that further declines in Delta inflows and outflows during ecologically critical periods, which would be expected to result from climate change and additional water supply projects, would cause further harm to fish and wildlife and further prevent attainment of the Delta inflow, Delta outflow, and fish viability objectives.

Similarly, the State Water Board's analysis fails to consider the effects of temporary urgency change petitions that waive Delta outflow and other water quality objectives. As discussed elsewhere herein, the Bureau of Reclamation plans to continue and expand the use of TUCPs under the voluntary agreement or other alternatives, and there is no question that granting such petitions would result in a significant reduction in Delta inflow and Delta outflows especially in dry and critically dry years, and fish and wildlife population outcomes (e.g., abundance and survival) would not be protected to the extent estimated by the Recirculated SED.
Analysis of the flows required under the proposed voluntary agreement and 55w/WSA alternatives, and the flows that are not required by those alternatives but which the modeling projects will occur with today's infrastructure, further demonstrate that flows under these alternatives at best would largely maintain the unacceptable status quo, and more likely would result in reduced Delta inflows and Delta outflows. Table 5 shows Delta outflows that are required and those that are projected to occur under current constraints between January-June (e.g., infrastructure constraints such as reservoir flood control curves), expressed as a percentage of unimpaired flows for the years 1995-2021. The VA results in seasonal flows that are nearly identical to baseline conditions with respect to the percentage of available winter-spring runoff expected to become Delta outflow under current constraints. Importantly, the VA (and the baseline) protect from diversion and storage only about one-fifth of available runoff, and only 8% in some years – the remaining flows would be available for diversion and/or storage.
CDFW's critique of a State Water Board proposal in an earlier phase of this proceeding (setting flow objectives for three tributaries to the lower San Joaquin River) is relevant here; the agency wrote:

> The SED's analysis does not show how the Preferred Alternative of 35% unimpaired flow will contribute to the salmon doubling objective or will sustain ecosystem functions and services even with the support of all other proposed non-flow restoration measures in the basin. Instead, the analysis in the SED shows that the flow regime in the Preferred Alternative is only slightly better than existing conditions, which have consistently been found to be negatively impacting aquatic ecosystem functions and services.

CDFW 2013 at 2.[38]

Similarly, the State Water Board now proposes a voluntary agreement flow regime that is largely indistinguishable from the status quo and fails to show how this alternative will achieve Plan objectives or reasonably protect fish and wildlife or related beneficial uses.

The 55w/WSA requires (i.e., protects from future expansion of diversion and storage capacity) a greater share of available runoff becoming Delta Outflow compared to the VA and baseline

[38] The agency went on to conclude "[s]ubstantial evidence demonstrates that 50% - 60% unimpaired flow is necessary to meet Department recommendations for juvenile fall- run Chinook Salmon though it emphasized that this recommendation was only for the protection of fall-run Chinook Salmon and might not serve all fish and wildlife needs or other ecosystem services in other locations in the watershed. CDFW 2013 at 10.

conditions; however, it results in only slightly more flow than the baseline, under current infrastructural constraints. This explains why this alternative's presumed flow-related ecological benefits are relatively small and inadequate to achieve the Plan's objectives. The 55% UIF scenario that the State Water Board previously considered, but omitted as an alternative from the Recirculated SED, would result in a considerably larger fraction of available runoff reaching San Francisco Bay than other scenarios and would actually prevent diversion of a larger percentage of unimpaired runoff by future water development; the 65% flow alternative protects from diversion even more of the unimpaired flow needed to support and maintain fish and wildlife beneficial uses.

Table 5: *Required and Modeled January to June Delta outflows for "Baseline," voluntary agreements, 55w/WSA, and 55% UIF scenarios.*

January-June Delta Outflow as % Unimpaired Flow								
Year	Required Flow					Modeled Flow w/ Current Constraints		
	Baseline	VA	WSA	55%UIF		Baseline	VA	WSA	55%UIF
1995	8%	9%	43%	52%		71%	71%	72%	71%
1996	13%	13%	53%	54%		70%	69%	72%	73%
1997	10%	10%	46%	47%		74%	73%	77%	77%
1998	8%	8%	47%	50%		77%	78%	75%	76%
1999	15%	15%	54%	54%		65%	63%	70%	72%
2000	15%	17%	47%	54%		65%	66%	67%	70%
2001	29%	29%	44%	55%		46%	50%	50%	58%
2002	25%	25%	43%	56%		45%	47%	53%	60%
2003	18%	18%	46%	56%		54%	56%	58%	64%
2004	21%	21%	46%	56%		61%	63%	64%	69%
2005	19%	19%	43%	52%		56%	54%	57%	62%
2006	11%	11%	49%	50%		79%	80%	79%	79%
2007	31%	31%	52%	53%		47%	53%	55%	56%
2008	27%	27%	36%	54%		45%	46%	47%	58%
2009	22%	23%	38%	56%		38%	40%	44%	58%
2010	18%	19%	44%	56%		49%	49%	55%	60%
2011	13%	13%	46%	51%		67%	67%	65%	65%
2012	28%	27%	50%	56%		52%	54%	56%	62%
2013	36%	35%	46%	54%		44%	49%	49%	54%
2014	35%	36%	39%	54%		44%	45%	47%	56%
2015	40%	40%	47%	58%		52%	53%	53%	59%
2016	21%	20%	38%	55%		44%	46%	52%	60%
2017	8%	8%	48%	49%		76%	77%	77%	76%
2018	21%	21%	45%	52%		57%	58%	56%	61%
2019	13%	13%	44%	53%		64%	64%	64%	65%
2020	32%	32%	50%	55%		42%	47%	50%	55%
2021	36%	40%	41%	53%		41%	42%	43%	53%
Min. Yr.	**8%**	**8%**	**36%**	**47%**		**38%**	**40%**	**43%**	**53%**
Median Yr.	**21%**	**20 %**	**46%**	**58%**		**54%**	**54%**	**56%**	**62%**

Peer-reviews of the voluntary agreement science plan also observe that, whereas the goals of the science plan are laudable, the overall assets pledged in the voluntary agreement proposal are unlikely to produce discernable responses in target fish and wildlife populations. *See, e.g.,* 2025 Delta Science Program Independent Peer Review (reviews by Korman and by Brandt).

3. The Program of Implementation Fails to Achieve the Narrative Inflow Objective Because It Fails to Provide the "Relative Magnitude, Duration, Timing, Quality and Spatial Extent of Flows as they would Naturally Occur"

In addition, the Program of Implementation under the voluntary agreement alternative fails to achieve the narrative Delta inflow objective because it fails to provide the "relative magnitude, duration, timing, quality and spatial extent of flows as they would naturally occur." Revised Draft Plan at 17 (emphasis added). As the State Water Board explained in 2018,

> The Science Report presents evidence indicating that native fish and other aquatic species *require more flow of a more natural pattern than is currently required under the Bay-Delta Plan* to provide appropriate quantities of quality habitat and to support specific functions needed to protect these species.

State Water Board, July 2018 Framework, at 7 (emphasis added); *see id*. at 5-6; *see also* Draft SED at 7.6.2-35.

The State Water Board has explained that "While unimpaired flow is not the same as natural flow, it is generally reflective of the frequency, timing, magnitude, and duration of the natural flows to which fish and wildlife have adapted." State Water Board, Final 2017 Scientific Basis Report, at 1-16. In contrast, Chapter 2 of the Final 2017 Scientific Basis Report documented how the existing flow regime has severely decreased the magnitude of flows and disrupted the natural pattern of flows.

While the Draft Plan's unimpaired flow requirements required "more flow of a more natural pattern than is currently required under the Bay-Delta Plan," the voluntary agreements largely maintain the unnatural flow patterns and magnitudes of the existing Bay-Delta Plan (Decision 1641), while pledging a modicum of additional flow, with most of the "new" flow occurring in one or two months of the spring. The voluntary agreements do not provide the "relative magnitude, duration, timing, quality and spatial extent of flows as they would naturally occur." The State Water Board has failed to demonstrate that that voluntary agreement would achieve the narrative Delta inflow objective, including the "relative magnitude, duration, timing, quality and spatial extent of flows as they would naturally occur."

4. The Program of Implementation Fails to Achieve the Inflow-Based Delta Outflow Objective under the Voluntary Agreements Alternative

Finally, the voluntary agreements fail to ensure that the Inflow-Based Delta Outflow Objective is achieved. That objective requires that, "the inflows required for the Sacramento/Delta tributaries and San Joaquin River tributaries are required as outflows with adjustments for downstream natural depletions and accretions." Revised Draft Plan at 18. However, the voluntary agreement pathway excludes numerous inflows from this objective, allowing them to instead by diverted by the Central Valley Project and State Water Project. *See, e.g.*, Revised Draft Plan at 67 (explaining

that "Some or all of these flow commitments may not be accounted for as contributing to additive Delta outflows above base conditions as specified below and in Appendix B.1."). The Revised Draft Plan effectively exempts the majority of Delta inflows required under the Mokelumne River voluntary agreement from the Inflow-Based Outflow Objective, *id*. at 69, and it has not yet decided whether to require all of the American River flows to comply with the Inflow-Based Outflow Objective, *id*. at 68. The same is true with respect to the upper San Joaquin River (Friant VA). *See id*. Appendix B.1, at B-10. Moreover, the Revised Draft Plan also does not require that the inflows and Delta outflows promised by the Sacramento River voluntary agreement actually be released into the river, instead allowing those flows to instead remain in reservoir storage. *Id*. at 67. Because the Program of Implementation does not require that all of the flows under the voluntary agreement pathway achieve the Inflow-Based Outflow Objective, the Revised Draft Plan is unlawful. *See* Cal. Water Code § 13242.

C. The Record Fails to Demonstrate that the Program of Implementation will Achieve the Cold Water Habitat Objective

Rather than adopting a Program of Implementation that would achieve the Cold Water Habitat objective as required by law, the Revised Draft Plan and record demonstrate that: (1) the measures identified in the program of implementation fail to ensure suitable water temperatures and levels of carryover storage necessary to achieve the Cold Water Habitat objective under either the voluntary agreement or the 55w/WSA alternative; (2) under the voluntary agreement alternative, the majority of dam operators are entirely exempt from these requirements and the Revised Draft Plan unlawfully allows "alternative" measures that do not achieve the coldwater habitat objective; and (3) the State Water Board has failed to adequately analyze and consider whether existing water temperature objectives are adequate to protect fish and wildlife, COLD beneficial uses, and other beneficial uses, and whether COLD beneficial uses in the Delta would be protected.

First, the record fails to demonstrate that the program of implementation would achieve adequate "reservoir storage conditions" and "suitable" water temperatures as required by the Cold Water Habitat Objective. Maintaining adequate cold water in reservoir storage is critical to ensuring that "suitable" water temperatures are achieved below dams. However, the Revised Draft Plan has substantially weakened the reservoir storage thresholds proposed in earlier versions of the Draft Plan, as Table 6 below demonstrates:

Table 6: *Comparison of proposed reservoir storage requirements from* Revised Draft Plan at 54 (Table 8) *to* October 2024 Draft Plan at 59 (Table 8).

	2024 Plan		**2025 Plan**[39]	
Reservoir	Dry & Critical	W, AN, BN years	Drought years	Non-drought years
Shasta	2,000	2,400	1,500 – 2,000	> 2,000 – 3,000
Whiskeytown	210	210	200 – 210	> 210 – 240
Oroville	1,200	1,600	1,000 – 1,200	> 1,000 – 1,600
New Bullards Bar	400	600	400 – 600	400 – 600
Camp Far West Reservoir	20	20	10 – 20	10 - 20
Folsom Reservoir	400	500	300 – 400	> 400 – 500
Camanche	150	200	150 – 200	> 200 – 250
Pardee	160	160	100 – 160	> 160 – 180
New Hogan Reservoir	50	100	50	> 50 – 100
Lake Berryessa	700	1,200	500 – 700	> 700 – 1,000

Not only did the State Water Board significantly weaken the reservoir storage thresholds in the Revised Draft Plan, but as noted *supra,* the Revised Draft Plan also does not require that these storage thresholds be achieved, instead allowing agencies to implement reservoir storage levels below these ranges. *See* Revised Draft Plan at 54 ("Water right holders may develop proposed carryover storage requirements outside of this range"), *id*. at Table 8 fn. 2 (authorizing even lower carryover storage levels during droughts).

Yet the Revised Draft Plan admits that these revised reservoir storage thresholds are not designed to maintain adequate coldwater habitat and are unlikely to achieve suitable water temperatures under drier conditions:

> These ranges are designed to prevent reservoir depletion for multiple purposes (health and safety, meeting other minimum flows, etc.) and *provide some level of protection for cold water habitat in the fall. In most cases, at the low end ranges additional actions would likely be needed to protect cold water habitat.*

Revised Draft Plan at 54 and footnote 1 (emphasis added).

Unsurprisingly, these reservoir storage ranges are generally significantly lower than the levels that the State Water Board, National Marine Fisheries Service, and other agencies have

[39] In assessing the impacts of the proposed storage amounts in the Revised Draft Plan, there is no evidence that anything above the minimum identified in the range would occur, making the "top end" illusory.

determined are necessary to protect coldwater habitat for endangered salmon in the Sacramento River and other tributaries. *See, e.g.*, NMFS 2017 (identifying Shasta Reservoir minimum end of September carryover storage requirements ranging from 1.9 million acre feet in critically dry years to 3.2 million acre feet in wet years).[40] In recent years, reservoir carryover storage levels at the low end of the range identified in the Revised Plan have resulted in failure to adequately protect coldwater habitat, significant temperature dependent mortality, and temporary urgency change orders that waived water quality objectives.[41] *See id*., Enclosure 3 at Table 3 (showing in 2015, end of September carryover storage of 1.6 million acre feet resulted in temperature dependent mortality of 85.4% of endangered winter-run Chinook, with total egg to fry survival of only 4.2%, the lowest ever recorded).

Indeed, with respect to Shasta Dam, the Recirculated SED admits that "[y]ears with carryover storage less than 2,000 TAF have been associated with elevated mortality of winter-run Chinook Salmon." Recirculated SED, Appendix H1a1 at H1a1-13.[42] In fact, the Recirculated SED admits that the lower carryover storage levels for Shasta Dam were included not because they ensure suitable water temperatures, but simply because that is how Reclamation plans to operate the reservoir. *Id*. ("However, a lower range value of 1,500 TAF is an acknowledgement that there have been and likely will continue to be times when storage in Shasta Reservoir will fall below 2,000 TAF."). The State Water Board's deferral to Reclamation's planned operations is inconsistent with Porter-Cologne's requirement that the Program of Implementation achieve water quality objectives. Regulated entities are required to comply with the Plan, and the Plan must comply with the law.

Modeling in the SED demonstrates that under baseline conditions, carryover storage falls below the inadequate carryover storage thresholds identified in the Revised Plan in critically dry years, particularly in the driest years. *See* Recirculated SED at 13-122 (Table 13.4-95); *id*., Appendix H1b, at H1a3-225 (Folsom), H1a3-280 (Shasta), and H1a3-269 (Oroville). While the modeling shows that carryover storage at these reservoirs generally improves compared to baseline

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[40] National Marine Fisheries Service, Proposed Amendment to the Reasonable and Prudent Alternative of the 2009 biological opinion, January 19, 2017, online at: https://media.fisheries.noaa.gov/dam-migration/nmfs_s_draft_proposed_2017_rpa_amendment_-_january_19__2017.pdf. NMFS' storage requirements were solely designed to protect cold water habitat for endangered Chinook salmon, and do not include water temperature or reservoir carryover storage requirements to protect fall-run Chinook salmon, which are not listed under the ESA and are the backbone of the State's salmon fishery, which remains almost entirely closed this year due to the State's failure to protect beneficial uses in the Bay-Delta watershed. For instance, in 2015 there was nearly complete mortality of fall-run Chinook salmon that spawned on the Sacramento River below Keswick Dam. In order to comply with Porter-Cologne, the Bay-Delta Plan must also provide adequate coldwater habitat for fall-run Chinook salmon as well as endangered salmon runs.

[41] In recent decades, these lower levels of carryover reservoir storage have contributed to numerous Temporary Urgency Change Petitions that waived water quality objectives and harmed fish and wildlife beneficial uses, including the year 2015. As discussed *infra*, the State Water Board has failed to consider the environmental impacts of future waivers of water quality objectives as a result of TUCPs if the voluntary agreement is approved.

[42] Similarly, at Oroville Reservoir, the Recirculated SED admits that carryover storage of 1,000 TAF may provide suitable water temperatures if power bypasses are utilized, and that 1,600 TAF is necessary to meet water temperatures and avoid power bypasses. *See* Recirculated SED, Appendix H1a1, at H1a1-31.

conditions under the 55w/WSA alternatives, carryover storage levels generally fail to achieve the inadequate carryover storage thresholds in the driest conditions (0%), and there is little or no improvement in carryover storage in the driest conditions under the voluntary agreement. *Id.*; *see also* Appendix H1a2 at H1a2-226 (Folsom), H1a2-270 (Oroville), H1a2-280 (Shasta). In addition, the modeling fails to demonstrate that the 55w/WSA alternative would achieve the carryover storage targets in the Program of Implementation in all critically dry years – even though the Plan admits that those storage levels are inadequate to protect suitable water temperatures during droughts and dry year sequences.

More importantly, a similar analysis using the storage thresholds identified in the 2024 Draft Plan – which the 2024 Draft Plan never identifies as inadequate to maintain suitable water temperatures – shows that reservoir storage fails to achieve the carryover storage thresholds identified in the 2024 Draft Plan in dry conditions. *Id.*; *see also* Appendix H1a2 at H1a2-226 (Folsom), H1a2-270 (Oroville), H1a2-280 (Shasta). In particular, in more than the driest 10 percent of years, the voluntary agreement fails to achieve the storage thresholds at Shasta, Oroville, and Folsom, as shown in Tables 7a-c below. *Id.* Indeed, carryover storage under the 55 percent scenario without a water supply adjustment is higher than carryover storage under the voluntary agreement in drier conditions, particularly at Shasta and Folsom.

Table 7a: *Storage thresholds for Shasta Dam*

Shasta Dam				
	2024 Storage Threshold	**Baseline**	**VA**	**55w/WSA**
0%	2,000	550	550	1426
10%		1,420	1,498	2,393
25%		2,679	2,545	2,618

Table 7b: *Storage thresholds for Folsom Dam*

Folsom Dam				
	2024 Storage Threshold	**Baseline**	**VA**	**55w/WSA**
0%	400	90	90	192
10%		336	360	422
25%		494	522	498

Table 7c: *Storage thresholds for Oroville Dam*

Oroville Dam				
	2024 Storage Threshold	**Baseline**	**VA**	**55w/WSA**
0%	1,200	146	200	656
10%		1,129	1,178	1380
25%		1,539	1,530	1,555

The modeling also shows that the voluntary agreement generally would not meaningfully improve carryover storage compared to baseline conditions in critically dry years, despite that fact that baseline carryover storage levels are generally inadequate to protect suitable water temperatures during these years. *See* Recirculated SED at 13-135.

Water temperature modeling[43] also demonstrates that neither the voluntary agreement nor the 55w/WSA alternative would provide the water temperatures necessary to achieve the Cold Water Habitat objective. Currently, baseline conditions fail to provide suitable water temperatures for salmon and other species. The Draft SED admits that under baseline conditions, water temperatures exceed protective temperature criteria for winter-run Chinook Salmon spawning, egg incubation, and alevins in the Sacramento River at Clear Creek 34.8 percent of the time. *See* Draft SED at 7.6.2-61. Similarly, temperature modeling in the Recirculated SED likewise shows that under baseline conditions, water temperatures for salmon and other fish in the Sacramento River at Clear Creek in the months of September, October and November – critical months for managing water temperatures for winter-run salmon – exceed 56 degrees Fahrenheit in the driest 10 percent of years (90% exceedance). *See* Recirculated SED, Appendix H1b, at H1b-28. All of the unimpaired flow alternatives (35 to 65 percent) generally reduce water temperatures compared to baseline conditions in the months of September, October and November in those years. *Id*. Under all of the unimpaired flow alternatives, water temperatures in the months of September and October would be less than 56 degrees in those years, although water temperatures still exceed the suitable daily average water temperature threshold of 53.5 degrees Fahrenheit (or 55.4 degrees Fahrenheit 7DADM), which is based on the best available science. *Id.; see also* Martin et al. 2016; Martin et al. 2020.

In contrast, under the voluntary agreement, water temperatures in the Sacramento River at Clear Creek (below Shasta Dam) *increase* in the months of October and November in the driest 10 percent of years compared to baseline conditions, and water temperatures in these dry conditions

[43] As noted *supra*, because the modeling fails to account for the existing and likely effects of climate change, the Recirculated SED appears to significantly underestimate water temperatures below these reservoirs and fails to accurately assess whether the Plan would achieve "suitable" water temperatures. In addition, the Recirculated SED admits that water temperatures could be higher than modeled because the State Water Board has not modeled potential water purchases under the voluntary agreement, which could lead to lower reservoir storage and higher water temperatures on the Sacramento, Feather, Yuba, and American Rivers. *See* Recirculated SED at 13-353.

would exceed 56 degrees Fahrenheit on average in the months of September, October, and November. *Id*. This would worsen temperature-dependent mortality of salmon compared to baseline conditions and fails to ensure "suitable" water temperatures. *Id*. The voluntary agreement not only fails to ensure "suitable" water temperatures below Shasta Dam, it actually worsens water temperatures in these key months compared to baseline conditions.

With respect to other dams and reservoirs, as noted *supra*, Appendix H1a1 includes water temperature indicators that were "were chosen for a basic analysis that focuses on fish survival below the dams. Refinement of this analysis using different indicators and downstream locations will likely be necessary to best meet the cold water habitat objective." Recirculated SED, Appendix H1a1 at H1a1-12 to H1a1-13. Yet the analysis in the Recirculated SED demonstrates that even these, often inadequate, water temperature indicators are frequently exceeded. For instance, for the American River below Folsom Dam, modeling indicates that water temperatures under baseline conditions exceed the temperature indicators for the American River at Hazel Avenue for the months of October (50 percent and 90% exceedence), November and December (all water year types shown), and exceed the temperature indicators for the American River at Watt Avenue for the months of May to October under the 90% exceedance, for the months of July through October for the 50% and 90% exceedence, and for the month of September under the 90% exceedance. Recirculated SED, Appendix H1b, at H1b-43 to H1b-44. Under both the voluntary agreement and the 55w/WSA alternatives, water temperatures would continue to exceed these temperature thresholds in most of those months and water year types. *Id*. Similarly, for the Yuba River at Smartsville, baseline conditions already exceed the temperature thresholds in the month of September, and the voluntary agreement would slightly increase water temperatures in the months of August and September. *Id*. at H1b-45.

The resulting water temperatures from implementing the voluntary agreement or the 55w/WSA scenario plainly fails to protect salmon, exceeds the inadequate water temperature standards identified in the Central Valley Basin Plan and Order 90-5, and fail to achieve "suitable temperatures" necessary to protect salmon based on peer reviewed scientific information published over the past decade. *See, e.g.*, Martin et al. 2016; NMFS 2017; Draft SED at 7.6.2-22 and 7.6.2-61; Martin et al. 2020.

Second, the Revised Draft Plan fails to ensure that the Cold Water Habitat objective is achieved because the Program of Implementation exempts parties to the voluntary agreements from any requirement to take actions to maintain suitable water temperatures, implement reservoir carryover storage targets, or adopt temperature management plans subject to State Water Board approval. *See* Revised Draft Plan at 5 ("All water rights not covered by approved VAs that affect temperature management are subject to the cold water habitat requirements of this section and rim reservoir owners/operators identified in Table 7 will be required to undertake specific implementation actions identified below."); *id*. at 52 ("The State Water Board will require the water right holders and reservoir owners/operators identified in Table 7 that are not part of approved VAs to develop long-term temperature management strategies for operations of the rim reservoirs and associated facilities identifying how the reservoirs and related facilities will be

operated to meet the cold water habitat requirements based on the best available scientific and technical information."). Indeed, under the voluntary agreement pathway the only requirement identified in the program of implementation to implement the Cold Water Habitat objective is that,

> The VAs are required to be implemented in a manner to *improve temperatures to the extent possible* and avoid redirected impacts to water temperatures. As part of the annual and periodic review processes, the VA parties will be required to report on measures they have undertaken to address temperature impairments in their stream systems in coordination with VA implementation measures.

Id. at 66 (emphasis added). The Recirculated SED confirms that the parties to an approved voluntary agreement would not have to implement any of the specific cold water habitat measures identified in the Plan:

> During implementation of an approved VA pathway, *HRL water rights would not be required to contribute to the regulatory pathway cold water habitat implementation requirements*. However, there is a cold water provision included under the VA pathway, and, to some degree, habitat restoration measures of the VA pathway could help offset temperature impacts by expanding habitat in areas that have cooler temperatures.

Recirculated SED at 13-302 (emphasis added).

Porter-Cologne requires that objectives be achieved. In contrast, the Plan proposes a VA pathway that hopes objectives will be achieved "to the extent possible" and relies on habitat restoration that "could help offset" the failure to do so. As discussed *infra*, these vague exemptions from objectives are illegal, prevent the Program of Implementation from achieving objectives, eliminate any hope that beneficial uses are protected, and will cause significant harm to temperature-dependent fish species.

The owners or operators of the majority of the reservoirs identified in Table 7 of the Revised Draft Plan are currently identified as parties to the voluntary agreement and would therefore be excluded from the requirements to implement the Cold Water Habitat objective in section 4.4.2.3. As a result, the largest reservoirs in California are exempt from these requirements, including Shasta, Whiskeytown, Oroville, New Bullards Bar, Camp Far West, Folsom, Pardee, and Comanche reservoirs. This would continue and likely exacerbate, rather than solve, problems that exist now. Over the past several decades significant temperature-dependent mortality of salmon and other fish and wildlife has occurred below some of these reservoirs because of the failure to adequately manage water temperatures and protect cold water habitat, particularly Shasta Reservoir.

The Cold Water Habitat objective requires maintaining reservoir storage conditions "to protect cold water habitat," including providing "sufficient quantities of habitat with suitable temperatures on streams to support passage, holding, spawning, incubation and rearing," In contrast, the voluntary agreement pathway merely requires that these parties "improve temperatures to the extent possible and avoid redirected impacts to water temperature." Revised Draft Plan at 67. Because the Program of Implementation fails to achieve "sufficient quantities of habitat with suitable temperatures" under the voluntary agreement pathway, the Revised Draft Plan fails to ensure that the Cold Water Habitat objective is achieved as required by law.

In addition, the Revised Draft Plan suggests that the Cold Water Habitat objective could be achieved by implementing "alternative protection measures to ensure that fish below dams are kept in good condition consistent with Fish and Game Code 5937." Revised Draft Plan at 51-52; *see* Draft SED at 7.6.2-57 (explaining that many dam operators "would take advantage of the provided flexibility" and implement actions that contribute "toward achieving the overall goal of improving conditions for fish and wildlife in the Sacramento/Delta"). To the extent that these measures do not actually achieve suitable water temperatures and adequate cold water habitat, even if they resulted in equivalent levels of future abundance of fish, while those actions might achieve other narrative objectives, they could not achieve the cold water habitat objective and thus would be unlawful. *See* Cal. Water Code § 13241.[44]

Finally, the State Water Board has failed to adequately consider whether the proposed voluntary agreement or other alternatives would achieve existing water temperature objectives in the watershed (which have been previously adopted by the State Water Board to ensure reasonable protection of fish and wildlife and other beneficial uses), nor has the State Water Board evaluated whether existing water temperature objectives and standards provide reasonable protection of salmon and other fish and wildlife beneficial uses. The Draft SED also fails to provide a reasoned explanation supporting its conclusion that the Revised Draft Plan would provide reasonable protection for COLD beneficial uses in the Delta.

For instance, neither the Revised Draft Plan nor the Draft SED demonstrate the State Water Board has evaluated whether the proposed voluntary agreement would achieve certain existing water quality objectives identified in the Central Valley Basin Plan, including the requirement to maintain water temperatures below 68 degrees Fahrenheit in the Sacramento River between Hamilton City and the I Street Bridge. *See* Central Valley Basin Plan at 3-14. And while the Revised Draft Plan asserts that it provides reasonable protection of COLD beneficial uses in the Delta,[45] the Draft SED fails to conduct any quantitative modeling and analysis of water temperatures in the Delta. *See* Draft SED at 7.12.1-66 (explaining how the Draft SED only modeled water temperatures in three rivers upstream from the Delta). However, it is clear that

[44] The Draft SED also identified the need to adopt mitigation measures regarding water temperature control and reservoir management to avoid potentially significant impacts under CEQA. *See* Draft SED at 7.6.2-103. However, the Recirculated SED excludes the VA parties from having to implement these mitigation measures, and the Revised Draft Plan therefore is reasonably certain to cause significant harmful environmental impacts.
[45] *See* Revised Draft Plan at 13.

water temperatures in the Delta and in the downstream sections of rivers that flow into the Delta can be adversely affected by the diversion and storage of water upstream and other activities, including discharges from agricultural lands. *See* Burford et al. 2025; Michel et al. 2023; Bashevkin and Mahardja 2022; Vroom et al. 2017. And there is ample scientific evidence that COLD beneficial uses in the downstream reaches of the Sacramento River as it drains into the Delta and the Delta itself are not currently being protected. *See, e.g.*, Lehman et al. 2017; Munsch et al. 2019; Nobriga et al. 2021.

Nor has the State Water Board adequately considered whether achieving these existing water quality objectives and permit conditions for water temperature provides "suitable" water temperatures or provide reasonable protection of fish and wildlife. Given the scientific information regarding the effects of water temperatures, particularly with respect to temperature impacts on winter-run Chinook Salmon eggs and fry, that has been developed over the past decade or more, it is clear that many of these existing water quality objectives and permit conditions for temperature, including Order 90-5 and the Central Valley Regional Water Quality Control Board's temperature objectives for the Sacramento River, fail to provide reasonable protection of fish and wildlife. *See, e.g.,* Myrick and Cech 2004, 2005; NMFS 2017; Lehman et al. 2017; Munsch et al. 2019 SEP 2019; Nobriga et al 2021.; *see also* Baykeeper 2024.

Because the administrative record fails to demonstrate that the Program of Implementation under the 55w/WSA alternative would achieve the Cold Water Habitat objective and makes achieving the objective optional under the voluntary agreement, approval of the Revised Draft Plan would be unlawful.

D. The Record fails to Demonstrate that the Program of Implementation will Achieve the Interior Delta Flows Objective

The Revised Draft Plan fails to ensure that the Interior Delta Flows narrative objective is achieved as required by law because the Program of Implementation: (1) fails to require measures within the State Water Board's jurisdiction to implement this objective, instead relying on measures by other agencies that are likely to change in the near future and are not reasonably certain to occur; (2) fails to consider, let alone adopt, any measures specifically designed to protect fish and wildlife, including fall-run Chinook Salmon, that are not listed under the state and/or federal Endangered Species Act, or to improve conditions for fish and wildlife beyond the minimum required by the state or federal Endangered Species Act.

The State Water Board recognizes that net reverse flows in the Interior Delta cause ecological harm, including the entrainment and loss of salmon and other fish species in the SWP and CVP export facilities, indirect mortality and migratory delays, reductions in spawning and rearing habitat for native species like Delta Smelt, all of which impact the abundance and survival of native salmon and estuarine fish species. *See* Recirculated SED at 13-303. However, as the Revised Draft Plan explains,

> The narrative objective for interior Delta flows is implemented through compliance by SWP and CVP with the numeric interior Delta flow objectives described below and the USFWS and NMFS BiOps and DFW ITP requirements for the operations of the CVP and SWP export facilities.

Revised Draft Plan at 61. There are two fatal flaws with this approach.

First, instead of requiring specific, numeric interior Delta flow objectives, such as specifying maximum reverse flows in OMR, the Revised Draft Plan fails to specify a "level or limit" for this objective. Instead, the Revised Draft Plan proposes to rely on other state and federal permitting requirements (2024 CVP/SWP biological opinions under the federal Endangered Species Act, and the incidental take permit issued to the State Water Project under the California Endangered Species Act). *Id*.[46]

However, federal and state ESA requirements have repeatedly been modified – weakening protections for fish and wildlife, reducing flows into and through the Delta, and resulting in more negative OMR flows – during the course of the State Water Board's regulatory proceeding to update the Bay-Delta Plan. As the Recirculated SED admits,

> As discussed in Section 13.4, *Changes in Hydrology and Water Supply*, changes to other regulatory requirements have affected Delta outflows and OMR flows compared to the baseline for this project. Specifically, changes to the Long-Term Operations (LTO) of the CVP and SWP have resulted in reductions in Delta outflows and increase in negative OMR flows at times relative to the baseline for this project (Reclamation 2019; NMFS 2019; USFWS 2019; DWR 2020; CDFW 2020; DWR 2024; Reclamation 2024; USFWS 2024; NMFS 2024; CDFW 2024).

Recirculated SED at 13-405. The Recirculated SED ignores the changes to baseline conditions that occurred between 2009 and 2025, which also resulted in reductions in Delta outflows and increases in negative OMR flows compared to conditions in 2009 when the Notice of Preparation ("NOP") was first issued. The current interior Delta flow requirements of the 2024 ITP and biological opinions are significantly less protective than the conditions required by the 2008 and 2009 biological opinions, resulting in greater reverse OMR flows that harm fish and wildlife. if adopted by the State Water Boad, the voluntary agreement triggers elimination of provisions of the current CESA incidental take permit (requiring DWR to maintain its "share" of the Vernalis

[46] Because those biological opinions and incidental take permits are not incorporated as part of the regulation, and because they are subject to change without any action by the State Water Board – effectively amending the regulatory standard without action by the State Water Board in compliance with the California Administrative Procedures Act – this element of the proposed regulation is unlawful. *See, e.g.*, Cal. Code Regs., tit. 1, § 20; Office of Administrative Law, Decision of Disapproval of Regulatory Action, OAL Matter Number: 2024-0314-01S, at 8, available online at: https://dfpi.ca.gov/wp-content/uploads/2024/05/2024-0314-01S-Disapproval-Decision.pdf; Office of Administrative Law, Decision of Disapproval of Regulatory Action, OAL Matter Number: 2025-0112-01, March 13, 2025, at 3-4, available online at: https://www.cdfa.ca.gov/oars/cap/docs/oals_disapproval_text20250423.pdf.

inflow-to export ratio), which will lead to much more negative levels of OMR flow. *See* 2024 SWP Long-Term Operations ITP at §8.12.

The State Water Board has long been aware that these permit conditions were subject to change. In the Draft SED, the State Water Board recognized that,

> For the most part, the proposed changes to the interior Delta flow objectives and implementation measures involve incorporation of existing BiOp and ITP requirements into the Bay-Delta Plan, including requirements contained in the USFWS and NMFS BiOps and CDFW ITP. While these requirements already exist, it is possible that they will change.

Draft SED at 5-36. And the Draft SED further explained that,

> If there are changes to the BiOp provisions, the State Water Board may approve those changes provided that they are no less protective than the existing requirement in the Bay-Delta Plan, changes would meet the narrative interior Delta flow objective, and CDFW concurs with that determination. Short-term (one season or less but not sequentially) or long-term changes could be made. Changes could be approved after the opportunity for public comment and consideration of those comments.

Id. However, the Revised Draft Plan eliminates any requirements for the State Water Board to approve changes to existing biological opinions or incidental take permits, and it eliminates the incorporation of similar numeric limits as objectives in the Bay-Delta Plan. *See* Revised Draft Plan at 61. And as discussed *supra*, the recent biological opinion adopted by the Trump Administration caused more negative OMR flows than what was analyzed in the 2023 SED, and will increase the salvage and loss of salmon, Longfin Smelt, and other fish species in the Delta, including likely causing further population declines of native fish and wildlife species. *See, e.g.* 2024 LTO FEIS Appendix I, Attachment I.4, Table I.4-2.[47]

Modeling demonstrates that both the voluntary agreement and 55w/WSA scenarios result in more negative OMR flows in the critical months of December to June on average than under occur under existing conditions which have already degraded from baseline. *See* Recirculated SED at 13-107 to 13-109. Under the voluntary agreement, Interior Delta Flow conditions are even further degraded because of provisions in the ITP that waive specific pumping limits in April and May if the voluntary agreement is adopted, resulting in even more negative OMR flows. *Id*. at 13-109; Table 13.4-84 (reproduced below). Instead of improving Interior Delta

[47] Document available online at: available at: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=55300).

Flows, both the voluntary agreement and 55w/WSA scenarios worsen Interior Delta Flows compared to baseline conditions.

Table 8: *Frequency of months exceeding OMR net flow thresholds for December to June*

Frequency of Months Exceeding Old and Middle River Net Flow Thresholds for December-June under Baseline and VA Scenarios		
Threshold (cfs)	**Baseline (%)**	**VA (%)**
0	13	5
-1,250	27	14
-2,500	31	27
-5,000	83	83

The State Water Board has the authority to impose limits on export operations of the Central Valley Project and State Water Project; the existing Bay-Delta Plan includes limits, such as the San Joaquin River inflow:export ratio, and the Delta export:inflow ratio, and the Courts have previously upheld water quality objectives that limited water exports of the state and federal water projects. *See United States v. State Water Resources Control Board*, 182 Cal. App. 97 (1986). However, instead of imposing any "limits or levels" under its authority, the State Water Board assumes implementation of other measures that are not reasonably certain to be achieved and are unlikely to be protective. The Revised Draft Plan does not require the State Water Board to reevaluate or impose additional measures if those measures in state and federal permits are modified, and the SED demonstrates that Interior Delta Flows will be further degraded if the voluntary agreement or 55w/WSA scenario is adopted. As a result, the program of implementation fails to ensure that the Interior Delta Flow objective is achieved as required by law.

Second, the State Water Board has failed to consider whether these requirements provide reasonable protection for fish species that are not listed under the state or federal Endangered Species Acts (including fall-run Chinook Salmon, late fall-run Chinook Salmon, Starry Flounder, and Sacramento Splittail), nor has the State Water Board considered whether these minimum protections for species listed under the state or federal endangered species achieve reasonable protection of fish and wildlife and achieve the salmon doubling objective. These permits and biological opinions only directly protect species listed under the state or federal Endangered Species Acts. Because of the diverse life histories of salmon, protections for endangered spring-run Chinook Salmon and winter-run Chinook Salmon do not necessarily protect fall-run Chinook Salmon or other species that are not listed; for instance, juvenile fall-run Chinook Salmon frequently migrate through the Delta later in the year than winter-run Chinook Salmon. In addition, these permits and biological opinions are only intended to prevent jeopardizing the continued existence of these species, and they are not necessarily sufficient to achieve the greater abundances of salmon and other fish species necessary to achieve the salmon doubling objective

or protect other beneficial uses, like commercial and recreational fishing or Tribal Beneficial Uses.

Instead of ensuring that the Program of Implementation for Interior Delta Flows protects all fish and wildlife, the State Water Board has conflated the minimum requirements of the state and federal Endangered Species Acts with the State Water Board's much broader authority to protect the Public Trust, ensure reasonable protection of fish and wildlife, and ensure achievement of the salmon doubling objective. These are distinct legal standards, and the State Water Board's failure to consider, let alone impose, any protections for fall-run Chinook Salmon or to require more than the minimum requirements of the state and federal Endangered Species Acts to achieve the Interior Delta Flow objective is arbitrary and capricious.

E. The Record Fails to Demonstrate that the Program of Implementation will Achieve the Narrative Fish Viability Objective

The Revised Draft Plan proposes a narrative fish viability which reads,

> Maintain water quality conditions, including flow conditions in and from tributaries and into and out of 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.

Revised Draft Plan at 21.

The administrative record fails to demonstrate the Program of Implementation will achieve the narrative Delta Inflow, Delta Outflow, Interior Delta Flow, and Cold Water Habitat objectives. In fact, as discussed above, the record demonstrates that the voluntary agreement and 55w/WSA scenarios would:

1) Fail to provide "suitable" cold water habitat to adequately protect salmon, and that approval of the voluntary agreement would worsen water temperatures below Shasta Dam and other upstream reservoirs compared to the degraded baseline, harming winter-run Chinook Salmon, spring-run Chinook Salmon, fall-run Chinook Salmon, Central Valley Steelhead, and other species;

2) Worsen Interior Delta Flow conditions compared to baseline conditions, increasing the loss of salmon, Central Valley Steelhead, and Longfin Smelt and further reducing the survival and abundance of species including Delta Smelt;
3) Fail to meaningfully improve Delta outflow compared to baseline conditions, and for some species like White Sturgeon and Delta Smelt, approval of the voluntary agreement would worsen ecological conditions and likely lead to further declines in abundance;
4) Fail to meaningfully improve Delta inflow compared to baseline conditions.

Similarly, the Recirculated SED demonstrates that habitat restoration proposed under the voluntary agreement would contribute little to no improvement in habitat indicators such as spawning habitat, meaningful flood events, and instream and floodplain rearing habitat.

Under baseline conditions, the State Water Board admits that native fish species are in "ecological crisis" and that most of these species have substantially declined in abundance since the adoption of the 1995 Bay-Delta Plan, including Longfin Smelt, Delta Smelt, winter-run Chinook Salmon, spring-run Chinook Salmon, fall-run Chinook Salmon, Starry Flounder, White Sturgeon, Bay Shrimp, and native zooplankton. *See, e.g.*, Draft SED at 3-134. Unless these declines are reversed in the coming years, multiple species – including Longfin Smelt, Delta Smelt, and winter-run Chinook Salmon – are likely to go extinct.

Thus, conditions must substantially improve compared to the degraded baseline conditions to halt the ongoing declines. However, neither the Plan nor the administrative record provide a reasoned explanation for how much species must increase in abundance, productivity, and other parameters to be viable, given the existing and ongoing declines. For example, the Recirculated SED identifies numerous ecologically important flow thresholds, but while it compares the frequency that different alternatives would achieve those flow thresholds, neither the Revised Draft Plan nor the record demonstrate how frequently these flow thresholds must be exceeded to achieve the narrative Fish Viability Objective. *See* Recirculated SED at 13-204. In fact, the best available science indicates it must be far more frequent than the modelling indicates will occur or than the Plan's regulations require. Similarly, for species like Longfin Smelt for which there is a strong abundance-to-outflow relationship, the Recirculated SED (and Draft SED) estimate potential changes in abundance under the different flow scenarios but fail to explain how much these populations must increase in abundance and productivity to fully offset the ongoing declines and attain and maintain viability. For instance, if Longfin Smelt have declined at an annual rate of five percent per year on average since the Bay-Delta Plan was adopted in 1995, and the Bay-Delta Plan was estimated to increase the population by 3 percent compared to baseline conditions, Longfin Smelt would continue to decline and would not be viable.

Given the ongoing, severe declines in abundance for numerous species in the Bay-Delta, merely showing some improvement compared to baseline conditions is insufficient to demonstrate that the Revised Draft Plan would achieve viability. Yet for many species, that is all that the State Water Board has done: evaluate conditions compared to the degraded baseline, without analyzing how much populations have declined under baseline conditions, nor whether projected increases

in population growth are greater than the decline in population growth under baseline conditions. *See, e.g.,* Recirculated SED at 13-205 and Fig. 13.5-4. This comparative analysis fails to demonstrate that the Revised Draft Plan will achieve viability given that these species are not currently viable under baseline conditions.

The voluntary agreements do not meet minimum needs for improved flow conditions. Instead, the voluntary agreements exchange adequate flows for "habitat assets." However, the State Water Board's analysis of habitat restoration under the voluntary agreements fails to demonstrate that the alternative would achieve the Narrative Fish Viability objective.

First, there is no evidence offered in the record or the voluntary agreement proposal that would allow for the quantification of the purported value of the proposed non-flow habitat to make up for the greatly reduced flows offered by the voluntary agreements as compared to an evidence-based and scientifically supported unimpaired flow regime. In part, the lack of evidence for benefits from the VA proposal to restore shallow water environments ("habitat") results from the lack of evidence-based quantitative relationships showing significant effects of past habitat restoration efforts on population viability for most of the species of concern.[48]

Second, and more fundamentally, the offered exchange is a false equivalency: there is no habitat accounting that could demonstrate that any earth-moving habitat modification can replace water in the river. Among other reasons, this is because aquatic habitat cannot be created by a one-time fix-it-and-forget-it approach; it is a dynamic feature that depends on adequate flows providing the foundation and physical work to maintain it over time. There is no scientific basis to the claim that the VA alternative can succeed in reversing the decline of public trust environmental and fisheries resources. Only the sustained provision of adequate flows in the rivers and through the Bay-Delta estuary will restore this once vibrant ecosystem.

The State Water Board fails to demonstrate that other, non-flow measures proposed under the voluntary agreements, including proposed restoration of shallow water environments (which the Recirculated SED optimistically refer to as "habitat"), will alter conditions in a way that allows the voluntary agreements to achieve the Plan's Delta inflow, Delta outflow, or narrative fish viability objectives. The State Water Board has previously cautioned that, "flow and physical habitat interact in many ways, but they are not interchangeable." SWRCB 2010 at 1. Indeed, the proposed Plan updates and Recirculated SED fail to acknowledge that four decades of implementing similar "habitat restoration" projects (e.g., under the CALFED program and the Central Valley Project Improvement Act's anadromous Fish Restoration Program), which have affected thousands of acres (e.g., Chapple et al. 2025), have not reversed, stopped, or noticeably slowed declines in Bay-Delta Estuary fish populations. Yet the State Water Board has failed to provide a reasoned explanation how the relatively small habitat restoration proposed under the voluntary agreement would, in combination with flows proposed under the voluntary agreement,

[48] In using the term "habitat" here, it is important to note the distinction between its limited meaning under the voluntary agreements, as the physical component of an organism's environment, and its specific meaning in the "Estuarine Habitat [EST]" sense, which refers to the hydrological component of estuarine processes and habitats.

achieve the newly proposed narrative objectives, including the native fish viability objective, or the salmon doubling objective. Instead, the Recirculated SED asserts – without a reasoned explanation – that the non-flow measures under the voluntary agreement "could result in fisheries-related ecological benefits," Recirculated SED at 13-539, or that these non-flow measures "are expected to contribute towards" achieving the fish viability objective. Neither conclusion is supported by the evidence, and neither conclusion fulfills the State Water Board's obligation under Porter-Cologne.

The State Water Board's analysis of "habitat" that the voluntary agreement alternative proposes to create focuses on Chinook Salmon spawning and rearing areas upstream of the Delta. Pledged "habitat" improvements are compared to the area estimated to be necessary to support the Plan's salmon protection objective. Chinook Salmon populations across the Central Valley have failed to attain the salmon protection objective, and instead natural spawned Chinook Salmon populations in Central Valley tributaries have mostly declined (in some cases, dramatically) since the objective was adopted.

As we have noted repeatedly, evidence is lacking that shallow water environments ("spawning habitat" or "rearing habitat") currently limit Central Valley Chinook Salmon population abundance or that these populations can be restored without significant improvement in river flow regimes. *See* Baykeeper et al. 2024 at 48; *see also* Presentations to the State Water Board by: Dr. Julie Zimmerman of The Nature Conservancy (Zimmerman 2023) Dr. Bronwen Stanford of The Nature Conservancy (Stanford 2023); Dr. Jonathan Rosenfield of San Francisco Baykeeper (Baykeeper and FOR 2023). For example, while more spawning habitat may be beneficial if significantly greater numbers of adult salmon return to spawn in the future (e.g., reducing density-dependent effects), the Recirculated SED fails to explain how additional spawning or rearing habitat would benefit species at their currently depressed population levels. Indeed, the Recirculated SED never identifies how much habitat restoration is necessary to achieve viability of salmon or other native fish populations.

For instance, Munsch et al. 2020 concluded that restored wetland habitats in the lower Sacramento River, Delta, and Suisun Bay are frequently not densely populated, and often not occupied at all by rearing Chinook Salmon fry under the status quo flow regime and existing low abundances of salmon. Yet Delta inflows associated with Chinook Salmon fry presence in available tidal habitats (17,700 cfs at Freeport) and those associated with relatively high density of fry (26,500 cfs at Freeport) are projected to occur in just 1% more years under the voluntary agreement relative to baseline.[49] *See* Recirculated SED at 13-211. Without significant increases

[49] The VA alternative would create 5,227.5 acres of "tidal wetland and associated floodplain habitat". Design criteria for these acres have not been developed (Recirculated SED at 13-28); thus, there is no way to know whether this area will be developed in a way that is intended to serve as "habitat" for salmon (much less when and whether the restoration is successful at producing actual habitat). To the extent that VA parties intend to restore tidal wetlands for the benefit of rearing Chinook Salmon fry, that benefit must be interpreted in the context of previously restored tidal wetlands that are frequently not fully, or even minimally, occupied under current flow regimes or flow regimes anticipated under the VA.

in flow and abundance, existing shallow water habitat in the Delta and vicinity will remain unutilized or underutilized in a large proportion of years under the State Water Board's proposed Program of Implementation, and there is little evidence that such habitat restoration by itself would benefit salmon. The Recirculated SED fails to explain habitat restoration would benefit salmon or other species without substantially increased flows and higher abundance levels, consistent with the findings of Munsch et al 2020.

Even if the proposed "habitat" restoration performed exactly as the voluntary agreement proponents suggest, the proposed "habitat" creation measures fail to satisfy the assumed need. The voluntary agreement arbitrarily seeks to result in only 25% of the presumed need for Chinook Salmon rearing and spawning "habitat" on the Sacramento River, its tributaries, and the Mokelumne River. This target is facially inconsistent with attaining the salmon protection objective. The 2023 Draft SED's estimate that the VA will increase Chinook Salmon juvenile "rearing habitat" by 2-3% above baseline conditions, provides no reason to expect that the voluntary agreement alternative will succeed in restoring viable Chinook salmon populations as required by the Revised Draft Plan's objective. *See* Draft SED at Table ES-4.

The Recirculated SED reveals that the voluntary agreements will not result in availability of Chinook Salmon spawning habitat necessary to achieve the narrative salmon doubling objective or, in some cases, even 25% of the "habitat" presumed to be necessary to support attainment of that objective. *See* Recirculated SED, Tables 13.5-6 and 13.5-7. Furthermore, the voluntary agreement proposal to create salmon "habitat" is arbitrary, untethered to the estimated need for such environments, and not likely to result in attainment of the salmon doubling objective, or even 25% of that objective. The Recirculated SED reveals that estimated spawning "habitat" already exceeds 25% of the assumed need on 4 of the 5 rivers studied; nevertheless, the voluntary agreement would fail to reach its 25% target on the one remaining waterway, the American River. See Recirculated SED at 13-206. Similarly, the VA proposes to create "rearing habitat" on Yuba River and Mokelumne Rivers, even though both rivers exceed the arbitrary 25% threshold (indeed, rearing habitat availability is estimated to far exceed 100% of the assumed need on the Mokelumne). *Id*. at 13-208. Meanwhile, the VA proposal fails to hit its own inadequate 25% target for rearing habitat on the American and Sacramento River (for fall-run Chinook Salmon). *Id*. With respect to instream rearing habitat, the Recirculated SED shows that the voluntary agreement would fall far short of achieving 25 percent of the instream rearing habitat area necessary to achieve the salmon doubling objective on the American River (increased from 5% to 7%), Feather River (10% under baseline and voluntary agreement), and Sacramento River (fall-run, increased from 4% to 7%), and would reduce instream rearing habitat on the Mokelumne River. *See* Recirculated SED, Appendix H1c, at H1c-38.

In addition, under the voluntary agreement it appears that there would be little change in the frequency of meaningful floodplain inundation events on most tributaries, and floodplain inundation events would fail to achieve the area and frequency of floodplain habitat inundation that the Recirculated SED identifies as necessary to achieve the salmon doubling objective. *Id*.,

Appendix H1c, at H1c-39 to H1c-41.[50] With respect to the 55w/WSA alternative, the State Water Board's analysis shows that, "in most tributaries there are no differences between the 55w/WSA scenario and baseline" with respect to the frequency of meaningful floodplain inundation events. *See* Recirculated SED at 13-201 to 13-202. For both alternatives, as with spawning and rearing habitat, the Recirculated SED fails to identify how frequently meaningful floodplain inundation events must occur to achieve viability of salmon, steelhead, or other native fish species, and both alternatives fail to achieve the meaningful floodplain inundation events at the frequency and acreage that the State Water Board asserts is necessary to achieve salmon doubling.

The Recirculated Draft SED provides little analysis of the effect of the proposed voluntary agreements on habitats used by estuarine pelagic species such as Longfin Smelt, Delta Smelt, or Starry Flounder – these species would not be expected to benefit from habitats created upstream for Chinook Salmon. Figures 13.5-3 and 13.5-7 in the Recirculated SED portray estimated estuarine area suitable for Longfin Smelt, Delta Smelt, and salmonids. Although the Recirculated SED describes these changes as "small relative to total region size," no discernible change in estuarine "habitat" is visible in modeling of the voluntary or the WSA alternative. The 2023 Draft SED estimated changes to estuarine environments used by pelagic fishes under the VAs, including a range from -11% (decrease) to +11% (increase) in the area used by Delta Smelt larvae. *See* Draft SED at Table ES-4. These results do not suggest that "habitat" improvements for pelagic fishes will overcome the ongoing negative effects of inadequate flows that lead to persistent decline in estuarine species illustrated above. The Recirculated SED fails to document or explain:

- that available space with suitable environmental conditions ("habitat" as crudely estimated in the SED) is limiting for any of these species;
- the level of increase in "habitat" area required to restore and maintain viability for native fish species (and doubling of natural production for Chinook Salmon), if physical habitat were limiting;
- that any gap between existing habitat area and what is needed to reasonably protect beneficial uses will be bridged by measures in the proposed Plan updates.

While it is clear that existing flows fail to reasonably protect the estuarine habitat beneficial use and native estuarine fish and wildlife like Longfin Smelt, the Recirculated SED fails to demonstrate that physical habitat restoration in the Delta would benefit these estuarine species in the absence of meaningful improvements in Delta flows, including Delta outflows. Indeed, the modeling of the location of X2 shows that the voluntary agreements would not meaningfully change the median X2 location or the X2 location during critically dry years. *See* Recirculated SED at 13-315 to 13-316. Under the 55w/WSA alternative, the median and critical year X2 location would shift downstream by 1 km. Id. at 13-313 to 13-314.

[50] Appendix H1c only provides results for the Feather, Mokelumne, and Yuba Rivers, and it fails to provide results for the Sacramento River and all other tributaries, making it impossible for the public to evaluate statements made in the Recirculated SED.

In summary, the Recirculated SED fails to demonstrate that proposed creation of shallow water "habitats" will substitute for the lack of adequate river flow in the voluntary agreement proposal and achieve the narrative native fish viability objective.

F. The Record Fails to Demonstrate that the Program of Implementation will Achieve Reasonable Protection of the Plan's Commercial and Recreational Fishing Beneficial Use (COMM)

The administrative record also fails to demonstrate that the Plan will provide reasonable protection of commercial and sport fishing beneficial uses in the Delta. As discussed *supra* and in prior comment letters, the State Water Board has failed to adequately define what constitutes a viable fish population under this objective. *See* Letter from Baykeeper et al to State Water Board dated January 19, 2024. Because viability appears, in the State Water Board's interpretation, to mean the minimum population necessary to avoid extinction, with the minimum necessary attributes (abundance, population growth rate, diversity, and spatial distribution), by definition a minimally viable population would not support commercial or recreational fisheries or the related beneficial uses.

The commercial salmon fishery in the State of California has been completely closed for three consecutive years, and there have been just six days of recreational salmon fishing in the ocean allowed in 2025. Recirculated SED at 13-535; *see also* Draft SED at 3-134 (calculating population declines for the four runs of salmon). The collapse of the Central Valley fall-run Chinook Salmon runs, which are the backbone of the State's salmon fishery, and the closure of the fishery makes clear that the Bay-Delta Plan has failed to provide reasonable protection for commercial and recreational fishing beneficial uses in the Bay-Delta. Similarly, the recreational fishery for White Sturgeon was recently severely restricted, and then harvest was completely prohibited, because of significant populations declines, which also resulted in the California Fish and Game Commission's decision to elevate the Bay's population to candidate status for CESA listing.

The Revised Draft Plan asserts – without analysis – that meeting the narrative fish viability objective and other objectives in the Plan would achieve the COMM beneficial use. Revised Draft Plan at 13. Stating this as a tautology neither makes it true nor complies with the law. In reality, a viable fish population, as understood by the State Water Board, would not support any commercial or recreational fishing. While the Revised Draft Plan admits that, "a thriving fish population could support fishing at higher consumptive rates" in the context of discussing beneficial uses of subsistence fishing, Revised Draft Plan at 11, the record fails to demonstrate that the State Water Board has considered that the abundance and population growth rates of salmon – or other native fish species in the watershed – must be greater than minimum viability to support a commercial and recreational fishery. Instead, the record emphasizes potential benefits of various flow scenarios, without demonstrating how much ecological benefit is necessary to meet viability, let alone sustain commercial and recreational fishery beneficial uses.

For instance, Chapter 7.6.2 of the Draft SED (aquatic biological resources) never considers whether the draft Plan would protect commercial or recreational fisheries (the words "fishing" and "harvest" each appear once in this chapter, in the description of the environmental setting).[51] Instead, the Draft SED asserts that the Draft Plan's unimpaired inflow objective is intended to "support and maintain the natural production of viable native fish populations." Draft SED at 7.6.2-45.

Similarly, while Chapter 7.6.2 of the Draft SED repeatedly finds benefits for salmon from the proposed project analyzed in the Draft SED, it never evaluates whether those improvements to salmon would be sufficient to support a sustainable fishery. *See id*. at 7.6.2-36 to -37 (concluding that that Delta inflows and outflows of 45 to 65 percent of unimpaired flow would "benefit" salmon and improve survival through the Delta); *id*. at 7.6.2-45 (concluding that the changes in tributary flows could "benefit" salmon); *id*. (concluding that the increased floodplain inundation would "likely result in positive population responses" by salmon).

The Recirculated SED also fails to provide a reasoned explanation supporting a conclusion that the voluntary agreement or 55w/WSA scenario would reasonably protect recreational and commercial fisheries and those beneficial uses. The document concludes that the Plan is "expected to result in economic benefits from increases in native fish populations," and that a "more natural flow regime would benefit Chinook Salmon populations by improving spawning, rearing, and migratory conditions, thereby boosting harvests and reducing commercial fishery closure risks." *Id*. at 13-535, 13-536. But "reducing … closure risks" from certain to some unknown amount less than certain is a far cry from providing evidence that the beneficial use will be reasonably protected.

The record demonstrates that the Revised Draft Plan is unlikely to achieve the narrative viability objective, and it fails to show that any improvements in the populations of fishery resources such as salmon or Starry Flounder will be greater than ongoing population declines for these species, resulting in a population that is actually growing – let alone increasing in abundance sufficient to sustain commercial and recreational fisheries. Because the administrative record fails to demonstrate that the Program of Implementation will achieve the narrative Fish Viability objective for salmon, starry flounder, and other species that are commercially and recreationally harvested, the record also fails to demonstrate that the Plan will reasonably protect commercial and recreational fishing beneficial uses.

The Recirculated SED also admits that fishery benefits are greater for the 55 percent unimpaired flow alternative analyzed in the Draft SED, with significantly reduced fishery benefits for the 55w/WSA scenario (which would likely provide fishery benefits similar to the low flow alternative analyzed in the Draft SED), and that fishery benefits would be even smaller for the

[51] Effects of the proposed project and alternatives on sport and commercial salmon fishing were also not analyzed in Chapter 17 of the SED, which analyzed potential effects on recreational fishing of non-native species.

voluntary agreement alternative. *Id*. at 13-538 to 13-539, 13-198. Numerous analyses demonstrate the voluntary agreement is unlikely to meaningfully improve conditions for salmon compared to the degraded baseline. For instance, the "frequency of achieving ecological flow thresholds would generally remain unchanged or increase under the VA pathway, although there could be a slight decrease for longfin smelt." *Id*. at 13-211. Similarly, the voluntary agreements do not appear to meaningfully increase the frequency of meaningful floodplain events compared to baseline or to achieve the frequency for floodplain inundation necessary to achieve salmon doubling. *Id*. at 13-208 to 13-209. In addition, the Recirculated SED fails to provide results for meaningful floodplain inundation under the voluntary agreement alternative for most rivers, including the Sacramento River and American River. *Id*., Appendix H1c at H1c-39 to H1c-41.

While the document concludes that the adoption of the 55w/WSA alternative is "expected to provide benefits to native fish species, including increases in abundance indices," *id*. at 13-518, and that adoption of the voluntary agreements "would be expected to provide… some increases in abundance indices of key indicator species under certain hydrological conditions," *id*. at 13-519, the Recirculated SED fails to demonstrate, given the long term declines in salmon and other native fish species, that any increases in abundance of salmon or other native fish species under the Plan will be sufficient to reverse these declines, support and maintain viable populations, or provide the greater abundance levels necessary to support recreational and commercial fisheries for wild salmon.

Finally, as discussed *supra*, the Revised Draft Plan's narrative objectives for Delta inflow, Delta outflow, and Interior Delta Flows are all defined in part by providing the conditions necessary to "support and maintain the natural production of viable native fish populations." Revised Draft Plan at 17-19. None of these objectives explicitly reference the Salmon Doubling objective, protection of recreational and commercial fishing, Tribal Cultural uses, or any level of fish abundance greater than the minimum of viability – which is already required by the California Endangered Species Act and far less than what is required by the Public Trust. As a result, the State Water Board has failed to demonstrate that the program of implementation will achieve reasonable protection of commercial or recreational fishing beneficial uses, and the State Water Board has unlawfully conflated native fish viability with the healthy and abundant native fish populations necessary to sustain recreational and commercial fisheries.

The conclusion in the Revised Draft Plan that the Plan would reasonably protect commercial and recreational fishing beneficial use is arbitrary and capricious.

G. The Record Fails to Demonstrate that the Program of Implementation Will Achieve the Salmon Protection Objective (Salmon Doubling)

The administrative record also fails to demonstrate that the Program of Implementation will achieve the salmon protection objective,[52] and the State Water Board lacks a reasoned explanation supporting its conclusions. In addition, the State Water Board lacks a reasoned explanation for how it assigns responsibility to achieving this objective, and to the extent that the Revised Draft Plan proposes to delay achievement of this objective for several decades, doing so would violate state and federal anti-degradation policy.

As the Court of Appeal explained two decades ago, "[d]etermining what actions were required to achieve the narrative salmon protection objective was part of the Board's obligation in formulating" the Bay-Delta Plan. *In re State Water Board Cases* (2006) 136 Cal.App.4th 674, 775. However, in this proceeding, the State Water Board has failed to do so. For instance, while the Recirculated SED identifies important flow thresholds for salmon, it fails to identify how frequently these flow thresholds must be achieved to achieve the salmon doubling objective. *See* Recirculated SED at 13-195 to 13-197, 13-204, 13-211.

As discussed *supra*, the record demonstrates that the Program of Implementation fails to achieve the Revised Draft Plan's narrative fish viability objective, as well as the narrative objectives for Delta inflow, Delta outflow, Cold Water Habitat, and Interior Delta Flows, and that the State Water Board lacks a reasoned explanation supporting its conclusions to the contrary. Because achieving the salmon doubling objective requires achieving a larger salmon population than what is required for viability, the administrative record likewise demonstrates that the Program of Implementation will not achieve the salmon protection objective.

Rather than demonstrating that the Revised Draft Plan would achieve the salmon doubling objective, the Revised Draft Plan seeks to unlawfully delay the full achievement of this existing narrative objective. Because the 1995 Bay-Delta Plan did not identify a time schedule for achievement of this objective, the Plan was required to include the actions necessary to achieve this objective. *See In Re State Water Board Cases, supra*, 136 Cal.App.4th at 703, 727, and 776. In contrast, the Revised Draft Plan unlawfully delays the achievement of this objective until the year 2050. *See* Revised Draft Plan at 94, 95, 96; Recirculated SED at 13-6 (explaining that voluntary agreement "participants propose to contribute to achieving by 2050" the salmon protection objective); Draft SED at 9-7 (voluntary agreements intended to "provide the participating parties' share, during implementation of the VAs, to contribute to achieving the Narrative Salmon Objective by 2050.").

[52] While this objective is also a narrative objective, it contains the requisite levels or limits to comply with the law, unlike the other narrative objectives in the Plan, as described in section III, *supra*.

To the extent that this reference to the year 2050 in the Revised Draft Plan is treated as a time schedule for implementation, delaying achievement of this objective to the year 2050 – when this narrative objective was originally intended to be achieved in the 1995 Bay-Delta Plan – at a minimum, violates the Public Trust and Anti-Degradation policies under the Clean Water Act. *See, e.g*., 40 C.F.R. § 131.12(a)(1); Fish and Game Code § 2052. However, while the Revised Draft Plan references time schedules for implementation, it does not include the year 2050 as a time schedule for implementation of the salmon protection objective. Revised Draft Plan at 63. Therefore, it appears that this reference to the year 2050 is not a valid time schedule for implementation of this Plan Objective. *See also id*. at 27 ("Implementation measures incorporate time schedules and flexibilities where appropriate").

Equally important, even assuming that it could be lawful for the State Water Board to delay achieving the salmon doubling objective until the year 2050, the Program of Implementation must identify the actions necessary to achieve the objective on that time schedule. Cal. Water Code § 13242. Here, however, the Program of Implementation fails to identify the actions necessary to achieve the objective and fails to demonstrate that the Revised Draft Plan will achieve the salmon doubling objective. Instead, the Revised Draft Plan only identifies certain actions to be undertaken in the next 8 years, which it asserts may be sufficient to achieve 25 percent of the objective. The Draft Plan never identifies the actions necessary to achieve the objective at any time in the future. This is plainly unlawful.

Finally, the State Water Board lacks a reasoned explanation why the parties to the voluntary agreement would only need to "contribute" to achieving 25 percent of the salmon doubling objective. For instance, the Recirculated SED analyzes whether habitat restoration under the voluntary agreement would achieve "the spawning habitat threshold of 25 percent of the doubling goal habitat area. Recirculated SED at 13-206; *see, e.g.*, Draft SED at 9-5 ("Tributary physical restoration actions are meant to restore spawning and rearing habitats sufficient to support approximately 25% of the offspring of the salmon doubling goal populations for each tributary.").

However, the parties to the voluntary agreements encompass the vast majority of the water rights holders and water diversions from the watershed, and on at least some tributaries, the voluntary agreements cover all non de minimis water rights holders and water diversions. Recirculated SED at 13-50. It is arbitrary and capricious to assign 75 percent of the responsibility to achieve the salmon doubling objective to other water rights holders when those other water right holders constitute significantly less than 75 percent of the water diversions from the watershed. Yet the State Water Board has failed to model how much water would actually be provided by non-parties to the voluntary agreement if the Revised Draft Plan is adopted, and the State Water Board therefore lacks a reasoned explanation for how it would assign responsibility for achieving this objective between the voluntary agreement parties and non-parties.

H. The Record fails to Demonstrate that the Program of Implementation Will Reasonably Protect Estuarine Habitat (EST) Beneficial Uses

The State Water Board fails to provide a reasoned explanation supporting its conclusion that the Revised Draft Plan provides reasonable protection of estuarine habitat. *See* Revised Draft Plan at 13. Estuarine habitat is already severely degraded by altered hydrological conditions, driven primarily by unsustainable water management practices that contribute to low inflows and low outflows, which necessarily reduce the volume and extent of estuarine habitat, exacerbate high water temperatures, and the facilitate proliferation of Harmful Algal Blooms and the spread of their toxins downstream. As discussed supra, under existing conditions estuarine habitat is not reasonably protected. *See,* e.g., Draft SED at 3-112 ("existing Bay-Delta Plan and BiOp flow requirements are not adequate to ensure Delta outflow conditions necessary for the reasonable protection of fish and wildlife beneficial uses"); SWRCB 2018 at 8.

Yet under the voluntary agreements, the condition of estuarine habitat would largely remain the same as degraded baseline conditions; the median and critical year X2 location would remain the same. Recirculated SED at 13-315 to 13-316. Delta outflow would decrease on average, and in most years, during the July through December period, harming Delta Smelt and worsening toxic algal blooms. *Id.* at 13-115. According to the modeling in the Recirculated SED there would be no or "small" effect on degraded baseline conditions, especially in drier years and for salmonid species. *Id.* at 13-210.

The 55w/WSA objective would likewise not meaningfully improve estuarine habitat conditions compared to the degraded baseline. The location of X2 would shift downstream only 1 km on average. *Id.* at 13-313. Delta outflow would be reduced during the July through September period and in some years during the July through December period compared to the baseline, harming Delta Smelt and worsening toxic algal blooms. *Id*. at 13-112 to 113. Overall, there would be no or "small" effect on degraded baseline conditions, especially in drier years and for salmonid species. *Id.* at 13-203. Again, estuarine conditions would be expected to deteriorate further if unregulated Delta outflows were diverted (e.g., by new diversion and storage facilities).

Not only does the Recirculated SED fail to demonstrate reasonable protection of estuarine habitat, the State Water Board has failed to evaluate changes in water temperatures in the upper estuary, failed to consider the effects on estuarine habitat conditions of waiving Plan requirements under future Temporary Urgency Change Orders, and failed to consider the effects of future water diversions and of climate change resulting in reductions to Delta inflows and outflows.

The State Water Board has also failed to define viability for organisms that underpin estuarine habitat and drive the productivity of the estuarine food web, and the ecosystem services it provides (e.g., estuarine zooplankton prey species), and to identify what water quality objectives will protect and restore estuarine habitat and the organisms that drive its productivity.

Because the Plan and Program of Implementation do not describe how the EST beneficial use will be reasonably protected, the objectives that will support it, or how those objectives will be achieved, it is unlawful.

VI. The Revised Draft Plan Attempts to Provide Unlawful Regulatory Assurances and Effectively Eliminates the Regulatory Backstop, Violating Porter-Cologne

The Revised Draft Plan unlawfully attempts to provide regulatory assurances to the parties to voluntary agreements, and it fails to provide a regulatory backstop if in the future the State Water Board determines that the voluntary agreement is modified, fails to be implemented, or fails to provide reasonable protection of fish and wildlife and other beneficial uses. The Revised Draft Plan must be further revised to comply with state and federal law.

Consistent with prior comments submitted to the State Water Board, the Revised Draft Plan attempts to unlawfully provide regulatory assurances to the parties to the voluntary agreements and attempts to unlawfully limit the discretion of the State Water Board in the future. *See* Friends of the River et al. Letter to the State Water Board dated January 10, 2025; *see also* Baykeeper et al. Letter to State Water Board dated October 17, 2025. The State Water Board lacks the legal authority to constrain its discretion in the future. Yet the Revised Draft Plan effectively proposes to do by establishing limits on the timing of periodic or triennial review, imposing procedural requirements for what must be considered by the Board in evaluating whether to modify or disapprove the voluntary agreements, and failing to include objectives, standards, and actions if the voluntary agreements end, either before or at year 8. *Id*. For instance, the Revised Draft Plan attempts to impose new discretionary findings that the State Water Board must make before determining whether to continue, modify, or terminate the voluntary agreements, even though those findings are not required by law before the State Water Board adopts a water quality control plan. *Compare* Revised Draft Plan at 94-95 *with* Cal. Water Code § 13241.

Equally important, in the Revised Draft Plan the State Water Board effectively eliminated the regulatory backstop that was included as part of the Draft Plan, such that there are no water quality objectives that would apply to the parties to an approved voluntary agreement upon the end of the initial eight year term or prior termination of the voluntary agreement. As a result, the State Water Board cannot adopt term-limited voluntary agreements like that which is currently proposed.

Specifically, the Revised Draft Plan now requires, prior to the State Water Board taking action to terminate the voluntary agreements, *that the State Water Board conduct a new scientific review and make a new, discretionary finding regarding the consistency of the Bay-Delta Plan with section 13241 of the Water Code, which is subject to judicial review as a quasi-legislative determination, even if the State Water Board determines that no changes to the regulatory*

provisions in the Bay-Delta Plan are necessary or appropriate. See Revised Draft Plan at 95.[53] Rather than default objectives that would apply when the voluntary agreements terminate, these provisions effectively require the adoption of a new Bay-Delta Plan. Like any other update of a water quality control plan, this exercise of discretion triggers a requirement to comply with CEQA, it requires the State Water Board to complete a valid rulemaking under the APA, and it requires the State Water Board to use accurate and updated scientific information to inform its decision.

Because there is not a regulatory backstop that would automatically go into effect if the voluntary agreements were modified, terminated, or not implemented, the State Water Board cannot approve term-limited voluntary agreements to achieve the Bay-Delta Plan. State law requires that a water quality control plan include a "program of implementation for achieving water quality objectives" that describes the actions necessary to achieve the objectives. *See* Cal. Water Code § 13242. However, without a valid regulatory backstop, at the end of the term of the voluntary agreements, the Bay-Delta Plan fails to identify any actions to achieve the water quality objectives. Instead, it would require a new proceeding to update the Bay-Delta Plan, and until that new Bay-Delta Plan is adopted and implemented, none of the parties to the voluntary agreements would be required to implement any of the Bay-Delta Plan's water quality objectives.

In contrast, while the 1995 Bay-Delta Plan included a voluntary agreement known as the Vernalis Adaptive Management Plan, the Plan also included a regulatory backstop requiring the U.S. Bureau of Reclamation to implement the Lower San Joaquin River Flows required by the Bay-Delta Plan, without requiring any action by the State Water Board to amend the Bay-Delta Plan:

> *The USBR is assigned responsibility under its water right permits, on an interim basis until the Board assigns permanent responsibility, to ensure that all of these objectives are met.* During the Spring pulse flow period in April and May while the SJRA is in effect, however, the experimental target flows in the VAMP will be implemented in lieu of the Spring flow objectives for the April-May period. After the SJRA terminates or adequate information is otherwise received, the State Water Board may review or consider amending the objectives in a water quality proceeding or *may immediately conduct a water right proceeding to decide how to assign responsibility for implementing these objectives.*

2006 Bay-Delta Plan at 24 (emphasis added).[54] The Revised Draft Plan, however, exempts parties to the voluntary agreements from the regulatory provisions of the Plan, and it requires

[53] The Revised Draft Plan proposes these additional requirements if the State Water Board seeks to impose the "regulatory pathway," but these actions are not required if the State Water Board chooses to continue the voluntary agreements. Such an approach misconstrues and attempts to bias the State Water Board's statutory obligations to conduct periodic and triennial review.

[54] Despite the end of the voluntary agreement known as the Vernalis Adaptive Management Plan, and the Bay-Delta Plan's backstop requiring the Bureau of Reclamation to implement the lower San Joaquin River flows at Vernalis required by the Bay-Delta Plan, the State Water Board has allowed the Bureau of Reclamation to fail to implement

that if the State Water Board concludes it is appropriate to terminate the voluntary agreement pathway, the State Water Board must: (1) consider numerous factors beyond those required by law; (2) prepare an updated scientific basis report, including public review and review by the Delta Independent Science Board; (3) determine whether any changes to the existing water quality objectives are appropriate; and (4) either "commence an update to the Bay-Delta Plan" or adopt new findings supporting the adoption of the existing Plan, subject to judicial review. *See* Revised Draft Plan at 64; *see also id*. at 94-95. In other words, the State Water Board has to either commence a new update to the Bay-Delta Plan – a process that has thus far taken 18 years – or readopt the existing Bay-Delta Plan with new findings, a decision that is subject to judicial review, and compliance with CEQA.

In neither case would the Plan's water quality objectives be implemented and achieved until those processes are completed. This is particularly problematic since the vast majority of water rights are covered by the voluntary agreements, such that the State Water Board concludes that little to no significant additional flow would occur under the regulatory pathway if the voluntary agreements were adopted:

> The SacWAM modeling of the VA scenario is focused on the HRL flow commitments and does not explicitly model the provision of additional flows from water right holders on the regulatory pathway that are not part of the VA pathway. *The water rights identified in Appendix B.1 constitute the majority of the water diverted and used within the Sacramento/Delta watershed.* While some additional flows would be expected under the VA pathway from water rights not included in Appendix B.1 that are on the regulatory pathway the resulting flows and effects would fall between the results of the VA pathway and the regulatory pathway and *would be much closer to the VA pathway results.*

Recirculated SED at 13-50 (emphasis added). Indeed, as that text explains, the State Water Board did not even model the potential additional flow that would result from non-parties to the voluntary agreement, apparently because it was so minimal.

As a result, it appears that if the voluntary agreements expire or are terminated, the only flows that would be required under the Revised Bay Delta Plan, potentially for years or decades, would be partial implementation of Decision 1641 – which the State Water Board has repeatedly concluded fails to provide reasonable protection of fish and wildlife, and which fails to achieve the objectives of the Bay-Delta Plan. The State Water Board cannot approve a Bay-Delta Plan where the Program of Implementation does not ensure that the water quality objectives are achieved until an amended Bay-Delta Plan is adopted. But that is what the Revised Draft Plan does.

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these water quality objectives (particularly the pulse flow objective) in nearly every year over most of the past decade.

Because the program of implementation in the Revised Draft Plan fails to demonstrate how water quality objectives will be achieved after the term of the voluntary agreements expires, it is unlawful. Cal. Water Code §§ 13242, 13247.

VII. The Revised Draft Plan's Program of Implementation Overlooks Serious Impediments to the Successful Implementation of the Proposed Voluntary Agreements (VAs), and VA Actions Cannot Be Reasonably Assured to Occur

The voluntary agreements as designed will not support reasonable protection of beneficial uses and are therefore unlawful. But even if, for the sake of argument, they could do so, it is highly unlikely that the actions will be implemented as described. This too is unlawful. A number of serious and likely insurmountable implementation challenges will prevent the voluntary agreements from meeting the requirements of Porter Cologne if the Board adopts them as part of the Bay-Delta Plan update.

A. Adequate Funding for VA Habitat Restoration Projects is Far from Assured

The VA MOU relies on $740 million in "New Federal Funding," particularly to support habitat restoration. *See* 2022 MOU, Attachment 2, Table 4. The Board cannot reasonably assume the Bureau of Reclamation will provide these funds. Reclamation signed the VA MOU under the previous federal administration. The Trump Administration has never stated its support for the VAs and there is no reason to assume that they will commit in the future to provide $740 million in new federal funds to implement VA actions. Indeed, President Trump recently vetoed a bill by Congresswoman Lauren Boebert to fund a (far less costly) water project in Colorado on the basis that state beneficiaries should bear the cost. *See* "Congressional Bill H.R. 131 Vetoed", The White House, December 30, 2025.[55]

Whatever the level of federal funding that is provided, it is very likely that long-standing federal funding for habitat restoration in the Bay-Delta watershed (e.g. the Central Valley Project Improvement Act ["CVPIA"] Restoration Fund and ongoing federal flood management funds) will be credited as "new" federal funds against the proposed VA commitment. Of course, these are *not* new federal funds, and the existing funded programs could not accurately be credited as a "new" VA contribution. *See* Presentations by Ashley Overhouse with Defenders of Wildlife to State Water Board on April 22 and 23, 2024; Presentations by Chris Shutes with California Sportfishing Protection Alliance to State Water Board on April 22, 2024; Presentations by Barry Nelson with Golden State Salmon Association to State Water Board on April 22, 2024. Absent adequate accounting and oversight mechanisms, the result would actually be that the VAs would repackage ongoing habitat restoration efforts instead of expanding habitat above the current and projected baseline – in other words, an exercise in futility that can only "succeed" through the use of creative bookkeeping.

[55] Document available online at: https://www.whitehouse.gov/briefings-statements/2025/12/congressional-bill-h-r-131-vetoed/.

There is no reason to assume that water users will commit to make up the full difference in funding needed for the voluntary agreements. More likely the funds will never arrive, or crediting previous double accounting of existing legal obligations and spent funds will be used to pretend to fill the gap.

B. Promised VA Flows are Unlikely to Materialize or will Substitute for Baseline Environmental Compliance Requirements

As discussed *supra*, a significant amount of the flow proposed under the voluntary agreements is expected to be used simply to meet the SED's environmental baseline, rather than actually increasing Delta inflows and Delta outflows to improve conditions for fish and wildlife. In 2017, the voluntary agreement flows were proposed to sit on top of D-1641 and the 2008/2009 ESA compliance requirements. In 2022, that changed to rest on the 2020 ESA compliance requirements. And in 2025, that changed again to rest on the 2024 ESA compliance requirements. Each of those changes represented a reduction in the total water promised (baseline plus theoretical voluntary agreement additions) under the proposal. Recent and pending changes to operations by Reclamation ("Action 5") will further reduce the real effects of promised VA flows.

In addition to the ESA rollbacks discussed above, the Bureau of Reclamation has indicated that it will seek to weaken or waive compliance with baseline requirements in D-164. In July of 2025, Acting Bureau Regional Director Adam Nickels told an audience of agricultural interests that "We will be targeting D-1641, consistent with the support from the White House under Executive Order 14181. We will be working hard to make those changes." Valley Ag. Voice, July 11, 2025.[56] Violating or seeking waivers of D-1641 requirements will further reduce the effect of promised voluntary agreement flows or even include waiving voluntary agreement flow commitments.

In addition, water purchases for the environment (e.g., the CVPIA level 4 refuge supplies) have a long record of failing to meet expectations – and even legal requirements. The failure of VA water purchases is made more likely by the foreseeable funding problems the VAs will face. It is extremely unlikely that all of the anticipated VA purchases will be completed by January 2027, as required under the proposed VAs.

Furthermore, some VA flows will be paper water, not real water. Under the proposed VAs, the Board will need to review hundreds of reference operation plans, which will be submitted on a weekly basis. The Board will struggle with those reviews and to ensure acceptable reference operations plans.[57] The opportunities for confusion and manipulation in those plans will reduce

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[56] *See* "Reclamation Says It's Time for a New Delta Strategy" by Natalie Willis, Valley Ag Voice, July 11, 2025. Available online at: https://www.valleyagvoice.com/reclamation-says-its-time-for-a-new-delta-strategy/

[57] The Board is already struggling to even staff or fund increased legal obligations as a result of federal Supreme Court decisions, requiring the Board to request millions from the California state budget. *See* "Impacts of United States Supreme Court's decision in *Sackett v. Environmental Protection Agency* (2023) 598 U.S. 651", State Water

VA flow benefits in a manner similar to, but perhaps much greater than, that experienced by the discredited CALFED Environmental Water Account. Areas for likely conflict include reference operations regarding OMR flows, planned water deliveries, flood releases, end of year storage conditions and more. Establishing objective, enforceable reference operations for some of these operational parameters is necessary to ensure the voluntary agreement approach provides the flow assets it offers—it is also likely impossible. Without objective, enforceable reference operations to serve as the foundation of VA flow accounting, the Board cannot determine if promised VA environmental water is real, or just paper water (for instance, see discussion of Friant VA water above, where the VA would be credited with providing water it has not previously captured and is constrained from capturing under current agreements).

The above concerns reflect a simple fact. Operators and lawyers are hired by water agencies to maximize the benefits for those projects under the rules regulatory agencies adopt. If the Board adopts a Bay-Delta Plan allowing those same entities to set the rules, the result will be a Swiss cheese of unenforceable and unmeasurable requirements with loopholes, ambiguity and confusion. And rather than being operating to maximize their own benefits within constraints, water agency operators and attorneys will work to maximize project benefits with no limits, and with disastrous impacts on the environment and taxpayer funds.

C. The Voluntary Agreements are a Badly Designed Experiment and Poorly Prepared to Evaluate Biological Outcomes

Developed haphazardly and lacking an intentional plan, the voluntary agreement approach leaves many details about the development of flow and non-flow assets to be determined later, potentially *after* approval. For example, the VA flow accounting protocols clearly state: "Some provisions are still under development and refinement as indicated in notes to reader and will be included in a subsequent draft of this appendix prior to consideration of adoption, or for some provisions, after adoption as appropriate." Revised Draft Plan, Appendix B1 at B1.1. Similarly, the Recirculated SED admits at 13-28, 29 that "Bypass floodplain and tidal wetland habitat projects do not have pre-defined criteria and instead HRL participants would be required to submit proposed design criteria for approval by the Executive Director and CDFW." Recirculated SED at 13-28 to 13-29. The failure of the Program of Implementation to fully and accurately describe the proposed voluntary agreement actions leaves it open to interpretation and alternative development, and the fact that the actions are poorly defined means that it is difficult or impossible to execute a well-planned approach to designing, monitoring and evaluating VA actions as tests of specific hypotheses. What is clear from the Recirculated SED and other analyses is that the VA assets are inadequate to provide reasonable protection of fish and wildlife populations or to achieve Plan objectives, regardless of their specific configuration in space and time.

Resources Control Board, January 1, 2026. Document available online at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/2026/sackett-report-2026.pdf

The lack of intentional and science-based planning of the non-flow commitments is apparent in the distribution of proposed projects, which shows that "habitat" improvement projects are proposed in some places where the Recirculated SED acknowledges that "habitat" availability already exceed the estimated need (Tables 13.5-6 and 13.5-7) and there is no evidence that non-flow commitment is addressing the limiting factor for salmon population recovery. For example, both spawning and rearing habitat modifications are proposed where no population response to increasing these habitat areas is expected because the population is below existing carrying capacity. This is because when:

> "…current abundances of fish are below the current carrying capacity of the habitat, then increasing habitat capacity further via restoration is unlikely to increase population size."

Stephen Katz, CalEPA independent peer-reviews 2024, at 31. Similarly, non-flow assets are proposed that are ineffective at improving population abundance of native fish species. For example, predator removals are proposed despite "a general lack of evidence in the scientific literature for predator control as a management strategy for recovery of strong, positive, population-level responses in target species." Draft Scientific Basis Report for Tuolumne Voluntary Agreement, September 2025, at 6-6.[58] Furthermore, a scientific study on predator removal and its effects on predation on juvenile salmonids in the lower San Joaquin River found that large scale predator removal provided only temporary reductions in predator density and found no statistically significant evidence that these predator manipulations influenced salmonid survival at even a localized scale, let alone functional effects basin wide at the population level (Michel et al. 2019).

The voluntary agreements are framed as an experiment, with the implied potential to evaluate the results and outcomes after eight years and to use that information to decide if the experiment should be continued. However, as proposed, they are a flawed experiment with little to no chance of detecting measurable effects for meaningful population-level biological or ecological responses. Scientific evaluation of the biological response to voluntary agreement actions is limited by the program's short timeframe. *See e.g.,* J. Korman 2025 Delta Science Program Independent Peer Review at 2 ("The 8-year time frame of the HRLSP is insufficient to provide even a moderate level of inference about hypotheses evaluated based on annual data/estimates").

Key among the failings of the VAs as an "experiment" is that the positive effects of the proposed measures are likely to be too small to detect. In a peer-review of the VA science plan, Korman cautioned:

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[58] State Water Resources Control Board, California Department of Water Resources, and California Department of Fish and Wildlife. 2025. *Draft Scientific Basis Report Supplement for the Tuolumne River Voluntary Agreement Proposal*. Sacramento, CA (hereinafter referred to as "Tuolumne VA Draft Scientific Basis Report"). Document available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2025/draft-report-tvasbr.pdf.

> "The extent of contrast provided by flow actions, and potential for replication of actions over time, is highly uncertain but likely limited, owing to the complexity of voluntary flow agreements (offramps, hydrologic conditions, multiple decision-makers). *I expect that the magnitude of effects of flow and habitat changes will most often result in a low signal-to-noise ratio, making it difficult to discern their effects…"*

J. Korman 2025 Delta Science Program Independent Peer Review at 2-3 (emphasis added).

Another peer reviewer echoed this observation, stating:

> Perhaps the fundamental challenge of the monitoring program is to ensure that the monitoring has sufficient (statistical) power to detect the level of changes anticipated. For some of the metrics such as acreage, this is not an issue. But it is clearly an issue for most of the biological outcomes which have a high degree of variability in estimates due to patchy distributions, unknown and variable catchability, and ecological dynamics. The current Science Plan largely just requires sufficient sampling power to detect an increase or a decrease rather than to detect progress toward a specific target. However, *many of the expected biological outcomes are predicted to be small and may even take time/years to evolve. For example, some of the anticipated outcomes illustrated in Chapter 6 of the Scientific Basis Report are on the order of a few percentage points. Can this level of change be detected?*

S. Brandt 2025 Delta Science Program Independent Peer Review at 35 (emphasis added).

Furthermore, the Science Plan fails to explain how the connection will be made between voluntary agreement flow and non-flow contributions and any metric of success or testable potential outcomes. CalEPA External Scientific Peer Review Program in October 2023[59],; Delta Stewardship Council "Healthy Rivers and Landscapes Science Plan Independent Peer Review", July 2025[60]; National Academies of Sciences, Engineering, and Medicine. 2025. *Review of the Long-Term Operations of the Central Valley Project and the State Water Project*. Washington, DC: The National Academies Press.[61] Moreover, the proposed science plan lacks any attempt to quantify how viability of salmon or other fish populations will be determined. *See* Revised Draft Plan, 4.4.9.8 at 91.

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[59] All documents generated by this program are available online at: https://waterboards.ca.gov/bay_delta/draft-supplement-report-peer-review.html.
[60] All letters are available online at: https://deltacouncil.ca.gov/delta-science-program/healthy-rivers-and-landscapes-science-plan-independent-peer-review.
[61] DOI: https://doi.org/10.17226/29130.

We understand that VA parties have been engaged in early implementation habitat restoration work since 2018. In other words, habitat actions pursuant to VAs have been underway for the same period – 8 years – as is proposed for VA implementation in the Revised Draft Plan. Before finalizing the Plan, the Board should consider whether any demonstrable benefits from these early implementation habitat projects for native aquatic species at risk can be documented. Failure to do so would indicate that the VA assumptions about the benefits of these actions is faulty and/or the habitat restoration would not be sufficient to generate population level benefits within the 8 year term of the VAs is insufficient to either create or show results.

It is also unclear how the timeline for individual projects will be considered relative to the overall timeline of the VAs, but it is apparent that many projects will have been implemented for far less than eight years before the end point assessment, with some non-flow assets not being completed until years six, seven, and eight. Furthermore, the unknown mix of future water year categorizations over the eight-year period will confound the evaluation of project success and make correlations between biological response variables and specific voluntary agreement projects tentative at best. More likely, if we experience a wet eight year period, where natural hydrology provides benefits to fish, the voluntary agreement parties will claim credit for "working"; while if we enter a dry period, where weather and climate provide challenging conditions for fish and wildlife, those same parties will say that the failure was not their fault. Neither statement will be true or scientifically defensible because of the arbitrary and non-scientific design of the voluntary agreement experiment.

Because the VAs do not substantially change river flow relative to the current baseline, the hypothesis set up to test the success of the VAs is backwards: from a science perspective, the null hypothesis should be that there will be no biological response after eight years that can be attributed to the VAs rather than flow conditions. In a properly designed experiment, the burden would be on the voluntary agreements to disprove the null hypothesis. And if that null hypothesis is not rejected, then we will accept what we already suspected to be true, the voluntary agreements should end, and regulated flows should be implemented. The actual structure is the reverse—planning extension of the VA pathway unless there is "significant evidence that continuing implementation of the VA pathway will not provide reasonable protection of beneficial uses or will jeopardize the continued survival of native fishes." *See* Revised Draft Plan at 96-97. This is backwards. The best available science today shows that the VAs will *not* protect beneficial uses—in fact, the VAs continue the status quo, and the status quo is ongoing ecosystem collapse. In a properly designed experiment, the burden would be on the voluntary agreements to disprove the null hypothesis.

Finally, the purpose of the updates to the Bay-Delta Plan is to achieve the existing and new Plan objectives, including those related to population viability and salmon doubling, while reasonably protecting beneficial uses. So, the question, "Will the proposed VA have a positive biological effect?" is the wrong question to ask. Rather, the relevant legal and management question is: "Will the proposed VA achieve Plan objectives and reasonably protect beneficial uses in a reasonable time frame, as required under law?" The State Water Board's analyses fail to attempt

to answer this most important of questions. Nevertheless, the information provided clearly demonstrates that the answer for this VA proposal and the 55w/WSA alternative is "no". Populations of fish and wildlife that continue to decline towards extinction will not become viable and will not double under these alternatives. Increasingly non-existent beneficial uses, as evidence by closed fisheries, cannot be considered reasonable protection of beneficial uses because they do not represent any protection at all. *See discussion supra.*

Unfortunately, the proposed updates do not describe or provide metrics for success. However, the State Water Board has previously described some population outcomes relevant to attainment of Plan objectives (SWRCB 2010, 2017), and other agency efforts provide a template for how such benchmarks can be developed for fish populations native to the Central Valley. *See* Lindley et al. 2007; SEP 2019. Successful updates to the Bay-Delta Water Quality Control Plan must demonstrate that they protect beneficial uses and support viable populations. If those outcomes are not projected to be achieved in pre-adoption analyses, or are not actually achieved in post-adoption implementation, the "experiment" must end. *See discussion supra.*

D. The Program of Implementation Is Unlawful Because VA Outcomes and Commitments are Not Assured

In summary, the Program of Implementation must ensure that the Plan objectives will be achieved. The inclusion of the VA commitments in the Plan is unlawful because:

- There is no requirement or mechanism to ensure that VA flow commitments are adjusted to offset erosion of the regulatory baseline to guarantee that the proposed level of improvement over existing conditions from VA flow implementation (nominal though it may be) is actually realized.
- There is no federal commitment to provide $740 million in new funding. Indeed, any federal commitment to participating in the VAs at all – or even an agreement not to violate existing regulatory requirements under D-1641 – is uncertain.
- There are no objective, enforceable reference conditions (e.g., for OMR flows and planned water deliveries, flood releases and end of year storage conditions) to serve as the foundation of VA flow accounting in the POI and defining such conditions for some parameters may not be possible.
- There are no objective, enforceable reference conditions for projects already authorized, required, being implemented and/or otherwise part of the baseline of existing conditions) in the POI to serve as the basis for assuring that VA habitat projects are actually additive to the baseline and not just repackaging existing efforts.
- There are no specific, measurable and enforceable milestones for VA habitat, funding and flows in the POI.
- Many of the VA actions are poorly defined, of relatively short duration, limited in scope, and untethered to limiting factors, and therefore do not lend themselves to the evaluation of biological outcomes assumed by the Revised Draft Plan.

VIII. The State Water Board's Public Trust Analysis Is Perfunctory, Fails to Adequately Protect the Public Trust, Fails to Follow Legislative Direction, Lacks Evidentiary Support, and Fails to Provide a Reasoned Explanation Supporting Adoption of the Revised Draft Plan.

The comments of CSPA et al. (incorporated by reference) on the 2023 Draft SED found the Draft SED flawed because it failed to contain a Public Trust analysis. *See* letter from CSPA et al. to State Water Board, January 19, 2024 at 4-6. Section 13.6,1 of the Recirculated SED ("Public Trust Analysis") fails in its attempt to correct this omission.

Section 13.6.1 is a recitation of the legal authorities and responsibilities of the State Water Board under the Public Trust Doctrine and a list of elements the State Water Board states that it considered. The Recirculated SED does not state, either methodologically or substantively, how it balanced these elements. Instead, the Recirculated SED announces its *intent* that the Revised Draft Plan fulfill Public Trust requirements: "As described in this section, the revised proposed Plan amendments are intended to satisfy the public trust doctrine and reasonably protect fish and wildlife beneficial uses in consideration of other beneficial uses of water." Recirculated SED at 13-218. Then the Recirculated SED announces its conclusion: "Through the analyses and balancing efforts described above, the State Water Board has duly considered the public trust and concluded that the revised proposed Plan amendments will protect public trust uses to the extent feasible." *Id.*

A list of the elements necessary to balance is not a description of the balancing process, the weight given to various elements, or the reasons for assigning such weight. A claim of having "duly considered" legal responsibilities and the Public Trust does not provide a reasoned explanation for the State Water Board's determination of what is feasible to protect Public Trust resources and what is not. The conclusory statement does not provide a reasoned explanation of how the amendments protect Public Trust resources or why greater protection of Public Trust resources is infeasible.

The Delta Reform Act states at § 85023: "The longstanding constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta." Far from being foundational to its analysis, the Recirculated SED's discussion of the Public Trust in Section 13.6.1 is little more than a box-checking exercise that affirms that, in allegedly balancing beneficial uses under Porter-Cologne, the Revised Draft Plan has simultaneously complied with the Public Trust doctrine.

The analysis of benefits to Public Trust resources demonstrates that 55w/WSA alternative:

- Provides a small change from the existing ecological crisis in the Delta (*see, e.g., id.,* Table 13.5-5) and substantially less benefit than the 55 without WSA (55without/WSA) alternative (compare SED, Table 7.6.2-5).
- Is supported with modeling that overestimates the benefits of the alternative because new diversions and climate change will reduce flows.
- Fails to demonstrate that the Alternative will meet objectives including the salmon doubling goal, tribal beneficial uses, and sport and commercial fishing objectives, all of which are expressions of the public trust.

And the analysis also demonstrates that the voluntary agreements:

- Provide no change from, or worse conditions than, the existing ecological crisis in the Delta. *See, e.g.,* Recirculated SED Table 13.5-8.
- Are supported with modeling that overestimates the benefits of the VAs because new diversions and climate change will reduce flows.
- Fail to demonstrate that the Alternative will meet objectives including the salmon doubling goal, tribal beneficial uses, and sport and commercial fishing objectives, all of which are expressions of the public trust.

The Recirculated SED admits at 13-218: "[T]here is some uncertainty as to what the actual benefits of the VA pathway will be and as such whether those benefits will fully protect public trust resources and fully provide for the reasonable protection of fish and wildlife beneficial uses. Given this uncertainty, the regulatory pathway provides a necessary backstop …"

However, the Revised Draft Plan eliminates the regulatory backstop, because as written it requires additional discretionary approvals and CEQA compliance before imposing regulatory flow requirements.

Thus, the Revised Draft Plan fails to adequately protect Public Trust resources.

A. The Recirculated SED Demonstrates that neither the 55w/WSA Alternative nor the Voluntary Agreements Adequately Protect the Public Trust.

As discussed in detail in this letter, the available evidence demonstrates that neither the voluntary agreement alternative nor the 55w/WSA alternative would achieve the Revised Draft Plan's objectives, reasonably protect beneficial uses, or protect the Public Trust. The State Water Board has previously recognized that numerous fish species in the Bay-Delta watershed "are in crisis" under baseline conditions. Draft SED at 3-134. The Board has also recognized that harmful algal blooms are increasing and threatening human health and safety, and that recreational and commercial salmon fisheries have been severely curtailed or completely closed in recent years. Yet the State Water Board's proposed approval of the voluntary agreements or the 55w/WSA alternative would not achieve the Revised Draft Plan's narrative objectives, including fish

viability and salmon doubling, nor would it meaningfully improve water quality in the Delta or lead to healthy, abundant populations of native fish species. At best, these alternatives would largely maintain the degraded status quo, under which native fish species go extinct.

In 2010, the State Water Board determined, based on the best available science, that Delta inflows and Delta outflows of 75 percent of unimpaired flow from the Sacramento Valley watershed are necessary to fully protect Public Trust resources. The scientific evidence remains clear that increased flows into and through the Delta would significantly benefit Public Trust fisheries. The Recirculated SED states that the 55 percent of unimpaired flow alternative considered in the Draft SED "would be expected to provide considerable improvement in protection of fish and wildlife beneficial uses, *including achievement of flow thresholds associated with the protection of aquatic species*," while the 65 percent of unimpaired flow alternative would provide even greater ecological benefits but raised concerns regarding water supply and cold water habitat. Recirculated SED at 13-216 (emphasis added).

These ecological benefits would be significantly greater than any benefits under either the voluntary agreements or the 55w/WSA alternative. *See, e.g.*, *id*. at 13-216, 13-518 to 13-519, 13-538 to 13-539. Yet the State Water Board never provides a reasoned explanation to justify selecting the proposed plan amendments.

B. The Recirculated SED's Standard of Review for Balancing Competing Interests Fails to Follow Legislative Direction.

Section 13.6.1 of the Recirculated SED begins with a recitation from the *Audubon* decision: "The State Water Board 'has an affirmative duty to take the public trust into account in planning and allocation of water resources, and to protect the public trust uses whenever feasible.' (*National Audubon Society v. Superior Ct.* (1983) 33 Cal.3d 419, 446.)" *Id.* at 13-214.

Section 13.6.1 then qualifies how the public interest limits the State Water Board's Public Trust responsibilities: "In determining whether it is "feasible" to protect public trust values like fish and wildlife in a particular instance, the State Water Board must determine whether protection of public trust values and the degree of protection to be provided are 'consistent with the public interest.' (*State Water Resources Control Bd. Cases* (2006) 136 Cal.App.4th 674, 778.)" Recirculated SED at 13-214. The section continues that, in determining the public interest, the State Water Board must "balance 'competing interests'…' *Id.*

In juxtaposing the Public Trust with the public interest, the stated standard of review in Section 13.6.1 thus sets up water supply as the sole expression of the public interest. As such, a decision by the State Water Board on how much a water quality control plan and program of implementation can diminish water supply would become purely discretionary.

However, the Legislature in 2009 weighed in with the Delta Reform Act. It has directed that the State Water Board give equal weight to the restoration of the Delta and water supply. It has

defined the co-equal goals for the Delta: "'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem." Cal. Water Code § 85054. In the context of "restoring" the Delta ecosystem, the legislature has defined restoration: "'Restoration' means the application of ecological principles to restore a degraded or fragmented ecosystem and return it to a condition in which its biological and structural components achieve a close approximation of its natural potential …" Cal. Water Code § 85066. In the Delta Reform Act, the legislature has also clearly stated the *public interest* in restoring the Delta. "The Legislature finds and declares that the Sacramento-San Joaquin Delta, referred to as 'the Delta' in this division, is a critically important natural resource for California and the nation. It serves Californians concurrently as both the hub of the California water system and the most valuable estuary and wetland ecosystem on the west coast of North and South America." Cal. Water Code § 85002

Moreover, as part of the Delta Reform Act, the Legislature adopted state policy to reduce reliance on the Delta as a source of water supply and to emphasize investments in local and regional water supply solutions including improved water use efficiency and water recycling. Cal. Water Code § 85021.

In short, the Legislature has provided clear guidance about the values in play in balancing Public Trust resources and water supply. But, as described, *supra*, the Revised Draft Plan will not restore the Delta ecosystem. At best, the Revised Draft Plan may slow the ecosystem's decline. At worst, it will expedite it.

The balancing the State Water Board must perform is not simply to weigh the Public Trust against the public interest. It is also to weigh the public interest in protecting the Public Trust and in restoring Public Trust resources.

Finally, the Legislature, in the Delta Reform Act finds and declares that the Delta is in crisis. Cal. Water Code § 85001. Multiple documents the State Water Board has released in developing the Bay-Delta Plan since 2009 have said the same. Yet the Revised Draft Plan appears to give no weight to the Delta's Public Trust resources in consideration of the Legislature's declaration that these resources are in crisis. The Recirculated SED provides no description that suggests that the balancing of beneficial uses gave any additional weight to resources in crisis versus resources not in crisis. Rather, Section 13.6.1 discusses *Public Trust* resources as though they are unremarkable among many "competing uses."

C. The Recirculated SED Proposes without Adequate Justification or Reasoned Explanation to Limit the Average overall Water Cost of the Regulatory Path to 5% or to Adopt the VAs with a 1% Water Cost.

The State Water Board also failed to fulfill its obligation to reconsider prior water allocation decisions in evaluating what protections for the Public Trust are feasible, as well as to further

State policy of reducing reliance on the Delta. *See National Audubon Society,* 33 Cal.3d at 426; *see also* Cal. Water Code § 85021.

Pages 13-146 through 13-192 of the Recirculated SED summarize the water costs of the 55w/WSA Alternative and the voluntary agreements, as calculated by the SacWAM modeling. Table 9 below shows the comparative reduction in water supply from the Delta, across the entire Bay-Delta watershed and by region, of three alternatives: the 55without/WSA alternative, the 55w/WSA alternative, and the VA alternative.

	A	B	C	D	E	F	G	H	I	J
1	**Average Changes in Water Available for Water Supply by Region (All Years), Compared to Baseline**									
2										
3	**Region**		**55% w/o WSA**	**55% w/o WSA**	**55% w WSA**	**55% w WSA**	**VA**	**VA**	**2023 SED**	**Rec. SED**
4			**TAF**	**% Change**	**TAF**	**% Change**	**TAF**	**% Change**	**Page Cites**	**Page Cites**
5									**(6-xx)**	**(13-xxx)**
6									**55% w/o WSA**	**55% w WSA,VA**
7										
8	Statewide		-1,682	-14%	-657	-5%	-137	-1%	57	150, 151
9	Sacramento watershed		-606	-11%	-232	-4%	-110 -223	-2% -4%	59	152, 152
10	Eastside watershed		-44	-21%	-24	-12%	0	0%	64	161, 164
11	Delta		-4	0	-1	0%	-1	0%	66	166, 167
12	San Joaquin Valley		-379	-13%	-73	-3%	+51 -62	+2% -2%	74	170, 173
13	SF Bay Area		-180	-28%	-48	-7%	+ 3	0%	68	179, 180
14	Central Coast		-19	-22%	-5	-6%	+ 2	+3%	71	182, 183
15	Southern California		-450	-27%	-276	-16%	+29	+2%	79	185, 187

Table 9: *Change in available water supply by region (all year types) as compared to baseline, expressed in both thousand acre-feet (TAF) and percentage difference from baseline, including citations to the Draft SED (55% unimpaired flow without WSA) and Recirculated SED (voluntary agreements and 55wWSA).*

The SacWAM modeling shows that overall, across all affected regions of the state in all water year types, the 55 percent unimpaired flow alternative from the Draft SED would have a water cost (reduce water available for water supply) of 14%. Table 9 at Cell D8. Across all affected regions of the state in all water year types, the 55w/WSA Alternative would have a water cost of 5% (Cell F8), and that the VAs would have a water cost of 1% (Cell H8). *See* Recirculated SED at 13-150, 13-151.

The Recirculated SED does not explain why a 14% water cost is not in the public interest. It also does not explain why additional targeted adjustments in flow requirements would not be appropriate to reduce water supply impacts to particularly sensitive uses, while maintaining a flow level more consistent with the overall flow regime of the 55 percent of unimpaired flow Alternative analyzed in the Draft SED, or greater.

Importantly, however, most regions and water districts that obtain water from the Delta rely on multiple water supply sources, meaning that the total impact to water supply will be smaller than depicted or analyzed by the State Water Board. In its 2018 Framework document, the State Water Board recognized that water diversions from the Bay-Delta only account for approximately one third of the total water supply in those regions, meaning that the then-

estimated 17 percent reduction in water diversions from the Delta resulting from the 55 percent of unimpaired flow alternative would mean a 5-6 percent reduction in total water supply for those regions. *See* State Water Board 2018 at 12-13. The Recirculated SED includes information showing how different regions differ in their dependence on water diversions from the Bay-Delta watershed. Recirculated SED at 13-149. However, the Recirculated SED never puts the reduction in water supply in that context.

The Recirculated SED does not explain why the balancing of a Delta in crisis against existing water supply results in a water budget limited to an average 5% water cost. The 55w/WSA Alternative is clearly insufficient to achieve the *restoration* of the Delta ecosystem that is mandated in section 85054 of the Water Code. The State Water Board's decision is particularly inexplicable given that the State Water Board approved the 2018 amendments to the Bay Delta Plan, which the State Water Board estimated would reduce surface water diversions from the Stanislaus, Tuolumne, and Merced Rivers by 14 percent on average. *See* 2018 SED at ES-22.

Nor has the State Water Board fulfilled its obligation to reconsider prior water allocation decisions in determining what instream flows to protect Public Trust resources are feasible. Under the voluntary agreements, many of the largest water diverters apparently contribute no water to help protect Public Trust resources, including DWR's Feather River Settlement Contractors (these districts generally divert more than 1 million acre-feet of water each year) and the San Joaquin River Exchange Contractors (whose contract with the Bureau of Reclamation provides a maximum of 875,000 acre-feet of water per year). The so-called Sacramento River Settlement Contractors would give up less than 5 percent of the water under their contract with the Bureau of Reclamation (they would provide up to 100,000 acre feet of water for the environment in certain water years, whereas the contract provides for up to 2.1 million acre-feet of water per year), albeit in exchange for taxpayer subsidies under the voluntary agreements. And south of Delta contractors of the State Water Project and Central Valley Project would actually increase water diversions under the voluntary agreement. *See* Recirculated SED at 13-107. The State Water Board has failed to consider requiring reductions in these water diversions to better protect Public Trust resources.

Moreover, unlike the Delta ecosystem, California's farms and cities have ample opportunities to reduce reliance on the Delta by investing in sustainable local and regional water supply solutions. Indeed, the Draft SED reported that "Pacific Institute and Natural Resources Defense Council (2014) estimated that agricultural water use could be reduced by 5.6 million to 6.6 MAF/yr, or by about 17 to 22 percent, while maintaining productivity and total irrigated acreage." Draft SED at 6-95. Yet the Recirculated SED does not analyze additional measures for water use efficiency or demand reduction in order to improve Public Trust protections. On the contrary, the Revised Draft Plan declines to adopt any of the programmatic or default approaches to *new* diversions and water rights the Board evaluated in the Draft SED or the 2024 Draft Plan and Draft POI. The decision to defer all decisions about new or modified water rights to individual water right proceedings substantially weights the balance of Public Trust values and water supply even further toward water supply. Nor does the Revised Draft Plan consider, let

alone require, measures to reduce reliance on the Delta and invest in sustainable local and regional water supply projects, even though many of these projects are cost-competitive with water from the Delta and provide greater water supply reliability.

In reporting balancing considerations by the State Water Board since 2023, Section 13.6.1 reports changes in the Revised Draft Plan favoring water supply over Public Trust resources:

> In response to numerous public comments received expressing concern over water supply and reservoir storage impacts that would accompany the unimpaired flow requirement as presented in the 2023 Draft Staff Report, the State Water Board made revisions to the numeric flow requirements, adding in water supply adjustments for water rights obtained on or before December 31, 2025, to reduce water supply and carryover storage and associated temperature impacts and the associated economic disruption at the outset of Plan implementation.

Recirculated SED at 13-216. Although this discussion frames carryover storage as a water temperature impact, the reality is that, as discussed *supra*, the 55 percent unimpaired flow alternative results in improved water temperatures at many reservoirs compared with the voluntary agreement or 55w/WSA alternative, and carryover storage is a nonconsumptive use that can be used for consumptive use later in the year. Indeed, while this section of the Recirculated SED claims that the 65 percent of unimpaired flow alternative would cause issues with respect to conserving cold water habitat, it does not make such a claim with respect to the 55 percent of unimpaired flow alternative. Recirculated SED at 13-216. The framing plays flows against water temperature, pitting two Public Trust categories against one another in deference to the "economic disruption" of reduced water supply. As discussed *supra*, the Revised Draft Plan also proposes carryover storage rules that are lower in volume and weaker in enforceability than the carryover storage rules the Draft SED analyzed in 2023. The weaker carryover rules further favor water supply over the Public Trust, without demonstrating protection of water temperature or other Public Trust requirements downstream of major dams.

Notably, Section 13.6.1 does not affirmatively respond to the extensive analysis of the need for greater flows to better protect Public Trust resources that NGO commenters submitted in response to the Draft SED or 2024 Draft Plan and Draft POI. The "balancing" that the State Water Board has performed since 2023 has been a one-way ratchet in favor of water supply, away from protection of the Public Trust; indeed, the ratcheting down began as soon as the ink was dry on the final Public Trust flows report the State Water Board issued in 2010.

The voluntary agreement alternative abandons any pretense at balancing. It simply accepts the meager purported flow additions that water users offer as a preemptive alternative to any balancing at all. It also punts on other key elements. It has no carryover storage requirements. It has no other structural changes to reduce the severity of droughts on Public Trust resources, thus retaining reliance on temporary urgency change petitions and orders and weakened water

temperature requirements in sequential dry years, with disastrous effects on Public Trust resources, as discussed *supra*.

In this respect, the State Water Board acceptance of the VAs abdicates the Board's responsibilities under the Public Trust. In proposing to accept the VAs, the State Water Board replaces protection of the Public Trust to the extent feasible with protection of the Public Trust to the extent *convenient.*

D. The Recirculated SED Violates the State Water Board's 2020 Settlement with the California Sportfishing Protection Alliance et al.

Finally, the Recirculated SED violates the July 17, 2020 Settlement Agreement of the State Water Board with CSPA et al.[62] The July 17, 2020 Settlement required, *inter alia,* at ¶ 4, a "Transparent Public Trust Evaluation for the Bay-Delta Plan Update."[63] Importantly, the State Water Board in this settlement agreement confirmed that the provisions of the agreement are legal obligations of the State Water Board under existing law. More specifically, the State Water Board made the following commitments:

> [T]he State Water Board will evaluate whether the amendments proposed as part of the pending Sacramento/Delta Update to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary are consistent with the common law public trust doctrine. Specifically, the Staff Report prepared in connection with the pending update to the Bay-Delta Plan will include, in addition to the analysis required by the Porter-Cologne Water Quality Control Act, an express evaluation of whether the proposed amendments will protect the subject fish and wildlife public trust uses to the extent feasible and consistent with the public interest, taking into consideration all relevant factors, including but not limited to the following: …
>
> • Evaluation of whether the proposed amendments will protect the subject fish and wildlife public trust uses to the extent feasible; and
> • The State Water Board shall explain its findings and describe the specific factors it balanced in making its determination of whether the proposed amendments will protect the subject fish and wildlife public trust uses to the extent feasible and consistent with the public interest.[64]

The Recirculated SED does not clearly make findings consistent with the Settlement Agreement, and it does not explain the findings it does not make. The Recirculated SED provides at a list of

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[62] *See* Settlement and Release of Claims, *California Sportfishing Protection Alliance, et al. v. California State Water Resources Control Board and Thomas Howard,* (Case Number RG15780498), July 17, 2020, available at: https://calsport.org/misc-historical-documents/2020-07-17-cspa-v-swrcb-settlement-agreement-fully-executed/
[63] *Id.*, p. 3.
[64] *Id.*, p. 4.

topics the State Water Board ostensibly considered in developing the Revised Draft Plan but does not describe how the Board made decisions about those topics. It describes the subject matter elements but does not *quantify them as factors* or explain either the process or the weighting with which it balanced them against other elements. In short, Section 13.6.1 describes where the Board landed but not how it got there. Finally, the Recirculated SED does not make the promised "express evaluation." Instead, it repackages the Porter-Cologne evaluation as a Public Trust analysis and announces a conclusion.

IX. The Draft SED Failed to Comply with CEQA, and the State Water Board Must Prepare and Recirculate a Revised Draft SED that Accurately Assesses the Environmental Impacts of the Whole of the Action

As discussed below, the State Water Board has violated CEQA in its consideration of the Bay-Delta Plan, and the Recirculated SED must be revised and recirculated to address these flaws.

A. The State Water Board Has Failed to Consider the Environmental Impacts of the Whole of the Action

Neither the Draft SED nor the Recirculated SED has analyzed the whole of the action, as required by CEQA. *See* Cal. Code Regs., tit. 14, § 15378.

While the Draft SED analyzed several unimpaired flow alternatives that corresponded to different potential water quality objectives, it did not consider the environmental effects of the whole water quality control plan. A water quality control plan includes the designation of beneficial uses, water quality objectives, and a program of implementation to achieve those objectives. *See* Cal. Water Code § 13050(j). However, the Draft SED was released for public review and comment before the State Water Board released the initial draft program of implementation, including regulatory text. The Program of Implementation included numerous provisions that affect the analysis in the SED, including water supply adjustments on various rivers and streams and water supply adjustments for future water supply projects, and while the State Water Board has provided opportunities for public comment on the program of implementation under Porter-Cologne, the State Water Board has never analyzed the environmental effects of the whole of the action, including the program of implementation, for alternatives including 55 percent of unimpaired flow or 65 to 75 percent of unimpaired flow (the "High Flow" alternative).

Nor were these errors cured in the Recirculated SED. The Recirculated SED never analyzes the 55 percent or 65 to 75 percent alternatives that were included in the Draft SED, instead focusing its analysis solely on the voluntary agreement and the 55w/WSA scenarios. In addition, in the Recirculated SED the State Water Board includes new analyses that were never applied to the 55 percent and 65 to 75 percent alternatives considered in the Draft SED, including considering how frequently certain alternatives would achieve "new flow thresholds" that were developed "[f]ollowing receipt of public comments on the 2023 Draft SED." *See* Recirculated SED at 13-

195 to 13-197; *compare* Draft SED at 7.6.2-38 (flow thresholds) *with* Recirculated SED at 13-204 (including new ecological flow thresholds and slightly changing the prior flow thresholds). However, despite recognizing that these flow thresholds show higher flows are necessary to achieve fishery benefits, *see* Recirculated SED at 13-196, the State Water Board has failed to conduct this analysis for the 55 percent and the 65 to 75 percent alternatives analyzed in the Draft SED.[65]

Moreover the Recirculated SED demonstrates that changes to the Bureau of Reclamation's operations under Action 5 of the Central Valley Project significantly alter Delta inflows, Delta outflows, Cold Water Habitat, and Interior Delta flows that would result under the Revised Draft Plan, including reducing Delta outflows that would result under the voluntary agreements or 55w/WSA scenarios and resulting in more negative OMR flows under these scenarios. *See, e.g.,* Recirculated SED at 13-405. However, the State Water Board has not analyzed or disclosed to the public the effects of these changes on all of the alternatives analyzed in the SED, including the 55 percent and 65 to 75 percent unimpaired flow alternatives. Indeed, even the environmental baseline has changed between the Draft SED and Recirculated SED. *Compare* Draft SED at 7.6.2-37 (showing that under baseline conditions in the Draft SED, median X2 is located at 68 km) *with* Recirculated SED at 13-313 to 13-316 (showing that under baseline conditions in the Recirculated Draft SED, median X2 is located at 69 km). In other places, the Recirculated SED's analysis of flows under the voluntary agreements includes flows from the San Joaquin River, Tuolumne River, or lower San Joaquin River flow objectives, *see, e.g*., Recirculated SED at 13-204, even though those flows were excluded from the similar analysis in the Draft SED, biasing the analysis and making it appear that flows under the voluntary agreements perform better than the other unimpaired flow alternatives.

Because the State Water Board never analyzed the whole of the action – a Bay-Delta Water Quality Control Plan that includes proposed beneficial uses to be protected, water quality objectives, and the Program of Implementation to achieve those objectives– for the 55 percent and 65 to 75 percent alternatives, the State Water Board has violated CEQA. *See* Cal. Water Code § 13050(j); *see also* Cal. Code Regs., tit. 14, § 15378.[66]

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[65] The Recirculated SED also states that the State Water Board could modify flows within the range of 45 to 65 percent, with or without water supply adjustments, allowing for adoption of 65 percent unimpaired flow with water supply adjustments, or 45 percent of unimpaired flow with water supply adjustments. Recirculated SED at 13-16 to 13-17. However, the Recirculated SED never describes what water supply adjustments would apply to a 45 percent unimpaired flow requirement ("45w/WSA") or 65 percent unimpaired flow requirement ("65w/WSA"), nor does the Recirculated SED model or analyze the effects of adopting a 45w/WSA or 65w/WSA alternative.

[66] In addition, we note that the Recirculated SED never analyzes a voluntary agreement alternative that excludes the Bureau of Reclamation, which controls the water rights and facilities intended to be used as part of the voluntary agreement in the American, Sacramento, and San Joaquin Rivers and in the Delta. If Reclamation declines to participate, Bureau contractors would be unable to participate, and the vast majority of the water proposed for the voluntary agreements and a significant portion of the funding would be eliminated. Coordinated operations of the CVP and SWP would be affected if only the SWP were a VA participant. The Board would have to conduct supplemental environmental review under CEQA if only portions of the voluntary agreements were to be implemented.

Equally important, the Recirculated SED also fails to consider the environmental effects of the whole of the action for the proposed project, which it now defines as adoption of voluntary agreements for specific water rights holders, and a 55w/WSA flow scenario for all other water rights holders who are not part of the voluntary agreements. *See* Recirculated SED at 13-1 to 13-2. However, as the Recirculated SED admits,

> The SacWAM modeling of the VA scenario is focused on the HRL flow commitments *and does not explicitly model the provision of additional flows from water right holders on the regulatory pathway that are not part of the VA pathway.*

Recirculated SED at 13-50 (emphasis added). While the Recirculated SED admits that the parties to the voluntary agreements constitute the majority of water diversions in the watershed,[67] *id*., it is impossible for the State Water Board, let alone the public, to understand whether and by how much Delta inflows and Delta outflows resulting from adoption of the proposed project would compare to flows under the voluntary agreement alone – even though this regulatory pathway is, at least nominally, part of the proposed project. The State Water Board simply has not analyzed the whole of the action now being proposed.[68]

The Recirculated SED also fails to fulfill CEQA's public information mandate. As noted above, the analyses and baseline are different between the Draft SED and Recirculated SED, making it difficult to compare the alternatives and undermining this public information mandate. But the State Water Board further undermines this essential goal of CEQA because the Recirculated SED

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[67] The Draft SED also fails to adequately identify which water rights would be subject to the regulatory unimpaired flow requirements, and which would be subject to the voluntary agreement pathway. The State Water Board has released a list of water rights that are allegedly subject to the voluntary agreement pathway, which "are undergoing review by State Water Board staff and may be further amended in a subsequent version of this appendix." Revised Draft Plan, Appendix B.1, at B.1-83. It appears that many of the water rights included on that list have not contributed any water or money towards the voluntary agreement, and there appears to be no reasoned explanation why those or other water rights are included on the list. Determining which parties are properly part of the voluntary agreements has significant environmental impacts; that determination affects how much – if any – water would be included as Delta inflow and outflow above and beyond what is proposed in the voluntary agreements, whether any reservoir operators would be subject to the Cold Water Habitat objective, and whether the existing parties to the voluntary agreement are in fact contributing less water and habitat because they are forcing other water rights holders to subsidize what they have promised as part of the proposed voluntary agreement. These concerns also significantly affect the State Water Board's balancing of beneficial uses to determine what constitutes reasonable protection of fish and wildlife, and the State Water Board's obligation to protect Public Trust resources to the extent feasible.

[68] In addition, the Recirculated SED fails to model or adequately consider all of the changes to CVP operations resulting from the 2024 Biological Opinions, as well as the changed CVP operations that resulted from the Trump Administration's adoption of Action 5 in 2025. *See* Recirculated SED at 13-48; State Water Board to U.S. Bureau of Reclamation re: Action 5 Assumptions and Environmental Compliance dated Nov. 10, 2025. While the Recirculated SED does not discuss the changes from Action 5, except for removal of early implementation of the voluntary agreement, *see id*., the State Water Board has acknowledged that those changes would adversely affect native fish species.

never compares the results of the proposed project with the unimpaired flow alternatives, so that the public and decisionmakers can clearly see how the alternatives compare to each other and the proposed project.[69] While the Recirculated SED includes analyses comparing the voluntary agreement or 55w/WSA scenario with baseline, the Recirculated SED never compares these scenarios with the 55 percent of unimpaired flow, 65 percent of unimpaired flow, or 75 percent of unimpaired flow alternatives from the SED. As a result, the reader cannot easily – if at all – assess how the voluntary agreements compare to the other alternatives analyzed in the Draft SED.

Finally, the State Board has never provided a complete analysis of an alternative that allows for flexibility within an adaptive range, requires reservoir storage to protect cold water and water supply, and provides specific, science-based methods and rules for meeting unimpaired flow targets within that range, and considers specific, quantitatively defined outlier conditions when flows might vary outside the adaptive range, while still protecting water storage and other beneficial uses. The State Board has not identified an "environmentally preferable" alternative, nor compared that alternative with the voluntary agreements, the 55w/WSA scenario, or existing conditions. *See* Friends of the River et al. Letter to State Water Board, December 24, 2024; Baykeeper et al. Letter to State Water Board, October 17, 2025.

Because neither the Draft SED nor Recirculated SED has analyzed the whole of the action, the State Water Board has violated CEQA. The State Water Board must recirculate for public review a revised draft SED that adequately and accurately assesses the likely environmental impacts of the proposed project and alternatives.[70] In order to fulfill CEQA's public information mandate, the Recirculated SED must be revised to accurately assess the environmental impacts of the proposed project and all of the alternatives, using the same methods and same environmental baseline, and the alternatives must be compared to each other.

B. The State Water Board's Environmental Baseline Violates CEQA

The State Water Board has used an unlawful environmental baseline in the Draft SED and Recirculated SED that confuses and misleads the public as to the likely environmental impacts of the proposed project and alternatives. CEQA generally defines the environmental baseline to be the environmental conditions in existence when the Notice of Preparation ("NOP") is published (2008). *See* Cal. Code Regs., tit. 14, § 15125. However, instead of using the environmental

[69] Similarly, the Draft SED fails to compare the analysis of the voluntary agreement alternative with the other alternatives, relegating the analysis of the voluntary agreement to a separate chapter, and it likewise never presents model results for all of the alternatives in a single table, such as the frequency of achieving certain ecological flow thresholds.

[70] Adequate modeling and analysis also must account for the effects of the State Water Board's recently proposed water supply adjustments, which would reduce required Delta inflows and outflows in two thirds of years compared to flows modeled in the body of the Draft SED. In addition, the Draft SED fails to analyze the entirety of the voluntary agreement alternative because it fails to model the effects on Delta inflows or water temperatures from certain potential water purchases under the voluntary agreement, while assuming those purchases contribute to Delta outflow. *See* Draft SED at 9-109.

conditions and regulatory requirements in place in 2009,[71] when the NOP was published, in the SED the State Water Board chose to use conditions in effect more than a decade later (the year 2020). This environmental baseline is unlawful, particularly given the State Water Board's emphasis on the need to protect then-existing flows given regulatory changes during this period (particularly the significant weakening of state and federal protections for fish and wildlife between 2009 and 2020), and the further decline in the abundance of fish and wildlife in the Bay-Delta – and further degradation of beneficial uses – that resulted from weakening these key environmental protections. The use of this degraded environmental baseline is unlawful. In addition, the Draft SED's and Recirculated SED's use of multiple baseline conditions is likewise unlawful under CEQA.

In its supplemental 2012 NOP, the State Water Board explained that,

> In considering potential changes to the Bay-Delta Plan, the State Water Board will be reviewing changes that should be made to water quality objectives and the program of implementation to protect beneficial uses in the Bay-Delta in the immediate future *under existing conditions* and in the longer term with and without changes to the environment that may occur as the result of current planning efforts such as the BDCP.

State Water Board, 2012 Supplemental Notice at 3 (emphasis added). Throughout this proceeding the State Water Board emphasized that the combination of new water diversions, changing environmental regulations, and the lack of an adequately protective Bay-Delta Plan meant that then-existing environmental flows – particularly the Delta inflows and Delta outflows that resulted from the 2008 and 2009 CVP/SWP Biological Opinions, which were far greater than the minimum flows required by the Bay-Delta Plan – were likely to decrease over time, further harming fish and wildlife beneficial uses. Equally important, throughout this proceeding the State Water Board has repeatedly concluded that the best available science demonstrated that those then-existing conditions failed to provide reasonable protection for fish and wildlife and the Public Trust. Yet instead of comparing the proposed Plan amendments to that then-existing

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[71] The Draft SED identifies January 24, 2012 as the date when the NOP was published. *See* Draft SED at 7-11. However, as the Draft SED admits, this was the date when the State Water Board published a Supplemental Notice of Preparation. *Id*.; Draft SED at 6-4 (Admitting the process of updating the Bay-Delta Plan "has been ongoing since 2009, with a revised Notice of Preparation (NOP) issued for the Sacramento/Delta update to the Bay-Delta Plan in 2012."). The initial NOP for this proceeding was published by the State Water Board on February 13, 2009. State Water Board, Notice of Preparation and of Scoping Meeting for Environmental Documentation for the Update and Implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Southern Delta Salinity and San Joaquin River Flows, February 13, 2009, available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/environmental_review/docs/nop2009feb13.pdf. The conditions and regulations in effect in 2009, when this initial NOP was published, constitute the appropriate environmental baseline under CEQA. And even if 2012 were the appropriate date, the Draft SED and Recirculated SED do not use either 2009 or 2012 conditions. Again, the Draft SED and NOP documents and all other specifically identified weblinks are incorporated by reference.

environmental baseline, the State Water Board has unlawfully used an updated, further degraded baseline for environmental analysis in the Draft SED and Recirculated SED.

Indeed, one of the primary purposes of this regulatory proceeding was for the State Water Board to adopt new water quality standards that would protect existing flows that exceed regulatory requirements, and that were otherwise at risk. For instance, in 2017, the State Water Board explained that,

> With respect to flows, the Science Report explains how drastically the hydrology in the Bay-Delta watershed has been modified and how much further flows could be reduced without additional flow requirements… Additionally, because existing Bay-Delta Plan flow requirements are far below current flow levels most of the time, additional regulatory requirements are needed to prevent flows from being substantially reduced in the future.

State Water Board, Fact Sheet: Phase II Update of the Bay-Delta Plan: Inflows to the Sacramento River and Delta and Tributaries, Delta Outflows, Cold Water Habitat and Interior Delta Flows, Oct. 4, 2017[72]; *see id*. at 7 ("In some tributaries where flows are currently significantly impaired [reduced below unimpaired levels], these new inflow requirements are needed to improve conditions for fish and wildlife in those tributaries and to provide for connection with the Delta and contribution of flow to the Delta. In other tributaries where flows are less impaired, new inflow requirements are needed to ensure that those flows are not reduced in a way that is harmful to native fish."); Draft SED at 1-9.

The State Water Board's Final 2017 Scientific Basis Report repeatedly emphasizes that flows resulting from then-existing conditions were far greater than the flows generally required by the Bay-Delta Plan, and that a major purpose of this proceeding was to adopt new water quality objectives that protect at least some of these flows into the future given that then-existing conditions failed to reasonably protect fish and wildlife. *See, e.g.*, State Water Board, Final 2017 Scientific Basis Report at 1-5 to 1-6, 5-1 to 5-2, 5-7 to 5-8. In its Final Scientific Basis Report, the State Water Board used the 2008 and 2009 CVP/SWP Biological Opinions – the then-existing conditions in 2009 and 2012 – for its baseline conditions. *See* Draft SED at 7.1-14.

Similarly, in 2018, the State Water Board explained that,

> Though various state and federal agencies have adopted requirements to protect the Bay-Delta ecosystem, *the best available science indicates that the existing requirements are insufficient* and that a comprehensive regulatory strategy addressing the watershed as a whole is needed. Many of the current requirements in the Bay-Delta watershed are the sole responsibility of the Projects, including

[72] Document available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/201710_phaseII_notice.pdf.

> water quality objectives implemented by D-1641, two BiOps addressing Delta smelt and salmonids, and an ITP addressing longfin smelt. These existing requirements address only portions of the watershed and there are a number of tributaries that do not have any requirements to protect fish and wildlife, or that have minimal requirements. *Current conditions may be protective of fish and wildlife in some locations, but action is needed to ensure that conditions are not degraded in the future, and that conditions in the Bay-Delta improve based on more complete and coordinated watershed management.*

State Water Board, July 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan, at 6 (emphasis added).[73] The State Water Board reached the same conclusion in its 2010 Public Trust Report, which utilized a similar baseline and concluded that, "The best available science suggests that current flows are insufficient to protect public trust resources." SWRCB 2010 at 2.[74]

Yet despite this stated purpose of needing to improve protections for fish and wildlife compared to then-existing conditions when this proceeding began in 2009, particularly given that these regulatory requirements were subject to change and could reduce environmental flows given the inadequacy of the Bay-Delta Plan, and despite the 2012 Supplemental NOP emphasizing that the State Water Board would be reviewing changes compared to then-existing conditions, the Draft SED and Recirculated SED rejects this approach and instead uses an environmental baseline of conditions in 2020. *See* Recirculated SED at 13-43 to 13-44.

Although the State Water Board acknowledges that protections for endangered species that restricted operations of the State Water Project and federal Central Valley Project changed between 2012 and 2020[75], the Draft SED and Recirculated SED grossly mischaracterizes the magnitude and effect of these changes – and completely ignores other key changes to the regulatory regime during this period – suggesting that although the requirements had changed, "under most circumstances actual operations have not significantly changed." Draft SED at 6-4. While each of the changes in isolation may not seem substantial, taken together they amount to 'death by a thousand cuts' to the environmental baseline, and the fish and wildlife species that depend on adequate flows.

In fact, changes in the regulatory regime resulted in significant increases in water exports by the CVP and SWP, and significantly reduced resulting Delta outflow, comparing conditions in 2008 with those in 2020. *See* Draft SED, Appendix G3a, at G3a-11 (showing that January-June Delta outflow declined on average by more than 200,000 acre feet per year as a result of the change from the 2008-2009 CVP/SWP Biological Opinions to the 2019 Biological Opinions, as modeled

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[73] Document available online at: https://www.waterboards.ca.gov/bay_delta/docs/sed/sac_delta_framework_070618.pdf
[74] Document available online at : https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf
[75] *See* Draft SED at 6-4 to 6-5.

by SacWAM).[76] Indeed, state agencies filed litigation successfully challenging the Trump Administration's 2019 Biological Opinions as unlawful, recognizing that these measures were inadequate to protect endangered fish and wildlife.[77]

Most obviously, the Draft SED admits that changes to the regulatory regime resulted in the environmental baseline assuming greater exports of water by the CVP and SWP in years classified as Wet in the San Joaquin basin, compared to the requirements of the 2009 NMFS Biological Opinion that was in place when the NOP was published. Draft SED at 6-5; *see id*. at 7.1-15. This change to the baseline results in significantly reduced Delta outflow in nearly one quarter of all years (years classified as Wet in the San Joaquin basin), which is even more significant in light of the State Water Board's recognition that then-current flows were inadequate to protect public trust resources and action was needed to prevent further degradation of such flows. However, Delta outflow was reduced in all but critical water year types as a result of the 2019 Biological Opinions. *See* Draft SED, Appendix G3a, at G3a-11.

In addition, while the 2008/2009 CVP/SWP Biological Opinions required that OMR flows be no more negative than -5,000 cubic feet per second, more recent biological opinions authorize OMR to exceed that limit, up to a maximum of -6,250 cubic feet per second. Modeling in the Draft SED shows OMR exceeding -5,000 cubic feet per second under baseline conditions in certain months. *See* Draft SED, Appendix A1, at Table A1-114. Such conditions were prohibited and did not occur when the NOP was published, yet they are now part of the baseline in the Draft SED.

The Draft SED also admits that instead of using the Fall X2 action in the 2008/2009 CVP/SWP Biological Opinions, which required greater Delta outflow in the fall months of Wet and Above Normal water year types (so that X2 is located at 74km and 81 km, respectively), the Draft SED's environmental baseline requires reduced Delta outflow (so that X2 is located at 80 km in the fall months of Wet and Above Normal years). *See* Draft SED at 6-5.

The Draft SED also ignores several other changes to the regulatory framework between 2009 and 2020 that resulted in further degraded conditions for fish and wildlife, including the elimination of the minimum Stanislaus River inflows required under the 2009 NMFS CVP/SWP Biological Opinion. And critically, whereas in 2009 the State Water Board had never granted TUCPs to waive water quality objectives in the Delta, by 2020 the State Water Board had begun a pattern and practice of routinely granting TUCPs to waive water quality objectives, not just in drought years, but even in wetter years. *See* Draft SED at 7.24-4; *see also* Baykeeper et al re Draft Staff Report on Sacramento/Delta Updates January 19, 2024, Section H.3 at 99-101; *see also* California Sportfishing Protection Alliance et al. v SWRCB, County of Sacramento Case No. 34-

[76] Because the Draft SED fails to use a single, legally accurate environmental baseline, we cannot be certain as to the accuracy of this assessment of the changes in Delta outflow caused by the weakening of biological opinions under the Trump Administration in its first term.
[77] *See California Natural Resources Agency v. Raimondo,* Case No. 1:20-cv-00426. It is important to note that as a result of this litigation, the CVP/SWP operated under an "Interim Operations Plan" for 5 years and it is unclear how the State Water Board accounted for these changed operations during this time period, 2020-2025, respectively.

2021-80003761 (Consolidated with Case No. 34-2021-80003763), Third Amended and Supplemental Verified Petition for Writ of Mandate and Complaint (April 12, 2024).

Cumulatively, these changes resulted in significantly reduced Delta outflow in the winter, spring and fall months under the SED's environmental baseline compared to the conditions when the NOP was published in 2009.[78] And as compared to conditions in 2009, these rollbacks of environmental protections went hand in hand with further declines of the abundance of Delta Smelt and Longfin Smelt, the complete closure of the salmon fishery for several years as a result of declining fall-run Chinook Salmon populations, further declines of ESA-listed salmon species, and greater proliferation of harmful algal blooms.

The State Water Board also argues that these updated requirements represent "how they will likely continue to operate absent any updates to the Water Quality Control Plan." Draft SED at 6-5. That conclusion is not supported by substantial evidence. Indeed, as noted *supra*, the CVP/SWP 2024 Biological Opinions, as amended by Action 5 in the Record of Decision, increase Delta pumping in April and May, reduce Delta outflow, and worsen interior Delta flows compared to the environmental baseline.

Taken together, the failure to use then-existing conditions in 2009 when the NOP was published deprives the public and decision-makers of accurate information regarding the environmental impacts and benefits of the proposed project and alternatives. It is unclear, for example, whether flows under the proposed voluntary agreements are, in fact, greater than the flows under the 2009 baseline conditions (at a minimum, much – if not the majority – of the flows promised in the voluntary agreement simply replace flows that occurred under 2009 baseline conditions). Given the State Water Board's findings in the 2010 Public Trust Flows report and the 2017 Final Scientific Basis Report that the best available science demonstrated that then-existing baseline conditions in 2009 failed to protect Public Trust resources and failed to provide reasonable protection of fish and wildlife, the failure to use then-existing conditions in 2009 as the environmental baseline in the Draft SED and Recirculated SED fails to fulfill CEQA's public information role.

In addition, the environmental baseline is also unlawful because the State Water Board uses multiple conflicting baselines in the Draft SED and Recirculated SED, confusing the public and decisionmakers. As noted *supra*, the State Water Board used different baselines for its Final Scientific Basis Report and its Draft SED. In addition, the Draft SED uses a different baseline

[78] In addition, the Draft SED unlawfully excludes from the environmental baseline the minimum Delta inflows from the San Joaquin River at Vernalis required by the 2006 Bay-Delta Plan and Decision 1641. Instead of including either the VAMP or pulse flows required by the Bay-Delta Plan and Decision 1641, the Draft SED assumes "the base flows required under D-1641 without the April-May pulse and without VAMP pulse flows." Draft SED at 6-7. There is no valid justification for excluding required minimum flows from the baseline, and the Draft SED appears to provide no justification at all for this exclusion.

(the so called "reference condition") for evaluating the proposed voluntary agreements, [79] which is different from both the Draft SED's environmental baseline and the baseline used in the Final 2017 Scientific Basis Report. *See* Draft SED at 7.1-14 to 7.1-15; *id*., Appendix B.1; *id*., Chapter 9, at 9-13 to 9-15. As a result, a significant amount of the flow proposed under the voluntary agreements is expected to be used simply to meet the SED's environmental baseline, rather than actually increasing Delta inflows and Delta outflows to improve conditions for fish and wildlife. *See* Draft Revised Bay-Delta Plan, Appendix B.1 at B-1; *id*. at B-19. Because of the failure to use the environmental baseline of conditions in 2009, it remains unclear whether and to what extent the flows under the voluntary agreements actually increase flows compared to when the NOP was published.

Finally, although the Recirculated SED indicates that it uses the same environmental baseline as the Draft SED[80], the modeling results of the environmental baseline in the Draft SED and Recirculated SED are different. For instance, modeling of the environmental baseline shifted between the Draft SED and Recirculated SED, with the documents identifying different locations for X2 under baseline conditions. *Compare* Draft SED at 7.6.2-37 (showing that under baseline conditions in the Draft SED, median X2 is located at 68 km) *with* Recirculated SED at 13-313 to 13-316 (showing that under baseline conditions in the Recirculated Draft SED, median X2 is located at 69 km).

This use of multiple baselines is confusing and inconsistent with CEQA's public information mandate, and the Draft SED fails to accurately explain the results because of these confusing, multiple baselines. For example, the Draft SED claims that flows resulting from the voluntary agreement "are on top of other flows that are in the system incidentally." *Id*. at B-2. However, that is not true, at least with respect to the environmental baseline, because the Delta assets of the voluntary agreements are intended to at least partially meet the Delta outflow resulting from export restrictions in the Delta that are no longer in effect, and at least some of the export restrictions required under other permits will expire as a result of approval of the voluntary agreements (and the voluntary agreements may not fully replace those Delta outflows). Elsewhere, the Draft SED explains that the modeling of the voluntary agreements compared to baseline conditions does not show the effects of the voluntary agreements, stating that,

> As described throughout this chapter, the VA flow assets are accounted for as additive to the 2019 BiOps condition, not baseline. Therefore, changes in flows presented below may be greater or less than the values in Table 9.3-1 because of

[79] In addition, the Draft SED uses a different baseline for its evaluation of the Friant Voluntary Agreement. The Board notes that, "Reference conditions for the Friant VA are defined as operational conditions, including flows, water diversions, and reservoir operations as they would occur prior to VAs being implemented, but assuming expanded SJRRP recapture abilities." Revised Draft Plan, Appendix B1, at B.1-B-51. There appears to be no explanation or justification for the assumption that there are expanded SJRRP recapture facilities, and this baseline is different from the other baselines used in the voluntary agreement.
[80] *See* Recirculated SED at 13-43 to 13-44.

> other changes in system operations between the project baseline and the 2019 BiOps condition.

Draft SED at 9-22. By using multiple, conflicting baselines, the Draft SED misleads the public and decisionmakers as to the effects of the proposed voluntary agreement, violating CEQA. The State Water Board's failure to move from the Notice of Preparation to a Final EIR and decision in a reasonable amount of time does not allow it to shift the baseline to disguise the harmful impacts of the proposed Plan. And even if there were substantial evidence in the record that supported using a baseline later than 2009 or 2012, the use of multiple different and shifting baselines makes a comparison of various alternatives analyzed between 2017 and 2025 misleading, at best, and nearly impossible at worst. This concealment of impacts of proposed alternatives and changes is inconsistent with CEQA.

For all of these reasons, the State Water Board must revise and recirculate a SED that utilizes a single, valid environmental baseline for environmental review.

C. The State Water Board's Analysis of Cumulative Impacts is Unlawful, and the State Water Board Has Failed to Reduce Cumulative Impacts to a Less than Significant Level

The State Water Board has also violated CEQA because it has failed to adequately consider and mitigate cumulative impacts, particularly with respect to the cumulative effects of future water infrastructure projects like Sites Reservoir and the Delta Conveyance Project, groundwater recharge projects, and other proposals to increase water diversions within the watershed. More, the actions proposed to "reduce possible cumulative impacts" to a less than significant level fail to do so.

The Recirculated SED asserts that the cumulative impacts of these and other water supply projects are considered[81], as did the Draft SED. *See* Draft SED at 7.22-2, 7.23-18 to 7.23-19. The Draft SED admits that the combination of Plan Amendments and new water supply projects could result in potentially significant adverse cumulative impacts. Draft SED at 7.23-40, 7.23-42; 7.22-38 to 7.22-43.[82]

For example, the Draft SED admits that water supply projects like Sites Reservoir could cause significant changes to the flow regime (magnitude and timing), water temperatures, salinity and

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[81] *See* Recirculated SED at 13-399 to 13-418.

[82] While the Draft SED evaluates the construction impacts of projects to increase groundwater recharge, *see* Draft SED at 7.22-86 to -87, the document fails to adequately consider the environmental impacts of increased surface water diversions from these projects. While the Draft SED includes a single sentence that acknowledges potential adverse environmental impacts from groundwater recharge projects that reduce instream flows that provide ecological benefits to fish and wildlife, *id*. at 7.23-4, there was no quantitative or qualitative analysis from the numerous groundwater recharge projects that are currently being contemplated. The Recirculated SED does not solve these failures.

turbidity in the Delta, and could cause cumulatively significant effects on surface hydrology and water quality and aquatic biological resources. *Id*. at 7.23-18.

However, the analysis is almost entirely qualitative, ignoring the available quantitative modeling of these two water supply projects. For instance, the proposed Plan Amendments, Delta Conveyance Project, and the proposed Sites Reservoir Project will each affect Delta outflows, and the existing modeling shows how much each of these water supply projects would reduce Delta outflows. The Draft SED's discussion of the No Action Alternative acknowledges that several major water infrastructure projects currently being considered have cumulatively planned to reduce Delta outflow by 900,000 acre feet per year on average. *See* Draft SED at 7.24-7 to 7.24-8 and Table 7.24-1. Specifically, Table 7.24-1 shows that the estimated cumulative annual reduction in Delta outflow from the Delta Conveyance Project and Sites Reservoir Project is substantially greater than the total annual addition to Delta outflow proposed from the voluntary agreement pathway. *Id*. Yet instead of meaningfully considering the likely effects of these and other future water supply projects on Delta inflows, Delta outflows, fish and wildlife, and other beneficial uses, the modeling and analysis in the Draft SED's analysis of action alternatives (e.g., Chapter 7.12 (Hydrology and Water Quality) and Chapter 7.6.2 (Aquatic Biological Resources)), as well as the Draft SED's chapter on the voluntary agreements, completely ignores these potentially massive flow changes and resulting environmental impacts.

In the Recirculated SED, the State Water Board uses a similar cumulative project list and concludes that similar cumulative impacts could occur as those identified in Chapter 7.23 of the Draft SED[83], and it admits that changes under the voluntary agreement or 55w/WSA scenario could result in significant cumulative impacts, including significant cumulative impacts to fish species and water quality. *See* Recirculated SED at 402, 408.

Like the Draft SED, the Recirculated SED also discusses how new water supply projects could further reduce Delta outflow, including Sites Reservoir, Delta Conveyance Project, and groundwater recharge projects, although the estimated water diversions from each project and the estimated effect on Delta outflow is different from that presented in the Draft SED. *See* Recirculated SED at 13-406 to 13-408. However, like the Draft SED, the analysis is entirely qualitative, and the State Water Board never models the effects if these pending water supply projects are approved by the State Water Board.

The State Water Board's failure to meaningfully consider the existing quantitative modeling of these projects means that the Draft SED and Recirculated SED fail to disclose how much these proposed water supply projects would cumulatively reduce Delta outflows compared to current conditions. This is particularly problematic in light of the State Water Board's repeated acknowledgement that a major purpose of this update of the Bay-Delta Plan is to establish protective water quality objectives before new water supply projects further reduce environmental flows below the already degraded baseline conditions, because flows are often

[83] *See* Recirculated SED at 13-401.

greater than the minimum flows required by existing, inadequate water quality objectives. *See supra*. To date, there are three separate CEQA documents for each of these three projects, and each of these CEQA documents completely ignores the quantitative modeling of the other projects. The State Water Board's failure to use the existing qualitative modeling is unexplained and wholly inadequate, and the end result of the State Water Board's approach is to piecemeal the consideration of these projects, failing to provide the public and decisionmakers with modeling that quantitatively shows the cumulative effects of these projects on Delta inflow, Delta outflow, cold water habitat, and interior Delta flows.

Moreover, the Draft SED shows that approval of these and other water supply projects could cumulatively reduce Delta inflow and outflow by 900,000 acre feet per year on average – more than the purported additions to Delta inflow and outflow from the voluntary agreement pathway. *See* Draft SED at 7.24-7 to 7-24-8 and Table 7.24-1; *see also* Recirculated SED at 13-406 to 13-408 (identifying potential reductions in Delta outflow from the Delta Conveyance Project (-477,000 acre feet), Sites Reservoir (-190,000 acre feet), Shasta Dam enlargement (-59,000 acre feet), and San Luis Reservoir Expansion (-14,000 acre feet)). While the Draft SED discusses these potential impacts in the context of the No Action Alternative, it fails to adequately consider these effects of future water projects in its analysis of the other alternatives. This is unlawful.

While the Draft SED models Delta inflows and Delta outflows that are supposed to result from approval of the voluntary agreements, the modeling *assumes* unregulated flows continue into the future and the modeling completely ignores the effects of future water projects (including the currently pending Sites Reservoir and Delta Conveyance projects), which would necessarily reduce Delta outflows below what is modeled in the Draft SED – one of the exact problems that the State Water Board identified it needed to address in this update of the Bay-Delta Plan. The same is true in the Recirculated SED. Given that these modeled flows are not reasonably certain to occur, any decision that the proposed Bay-Delta Plan would provide reasonable protection of fish and wildlife cannot rely on the modeled flows above the minimum flows required by the Bay-Delta Plan. Indeed, the combined effect of adopting the voluntary agreements with their barely nominal flow commitments and failing to apply the updated Plan's new objectives to future water projects is to ensure that future water projects will more likely be permitted and significantly reduce Delta inflows and outflows below the modeling results in the Draft and Recirculated SED.

In addition to failing to adequately analyze cumulative impacts, the Recirculated SED also fails to adequately mitigate cumulatively significant impacts to a less than significant level. For instance, the Recirculated SED asserts that,

> As explained above, changes to existing water diversions or new water diversions could occur that would interact with the revised proposed Plan amendments and could affect interior Delta flows, Delta outflows, and water quality to varying degrees compared to baseline that could possibly result in potentially significant

> cumulative impacts on aquatic biological resources and hydrology and water quality depending on the specific actions that are implemented.

Recirculated SED at 13-408. This includes potentially significant cumulative impacts from more negative OMR flows[84], and from reduced Delta outflows.[85] While the Recirculated SED concludes that these impacts will be less than significant with mitigation measures, the record does not support this conclusion.

First, under baseline conditions, multiple fish species "are in crisis." Draft SED at 3-134. Reducing Delta inflows and outflows below baseline conditions as a result of approval of the Revised Draft Plan and new water supply projects would constitute a significant cumulative adverse environmental impact under CEQA. As the record demonstrates, further reducing Delta inflows and outflows is likely to further reduce the abundance and productivity of species listed under the California Endangered Species Act to less than self-sustaining levels. *See* Cal. Code Regs., tit. 14, §15065(a)(1).[86]

And second, the proposed mitigation measures do not require that Delta outflow not be reduced below baseline conditions, nor do these require that new water supply projects not reduce Delta inflow, worsen interior Delta flows, or increase water temperatures for spawning salmon. Instead, the Plan proposes to *defer* assessment of conditions on future water supply projects into other proceedings, rather than ensure they comply with the proposed regulations in the Bay-Delta Plan. Moreover, the Recirculated SED asserts that these mitigation measures "would prevent Delta outflow levels from being reduced to levels close to the [Minimum Required Delta Outflow]." Recirculated SED at 13-213. However, as the Draft SED explains, the Minimum Required Delta Outflow is far less than half of the existing outflow in many years, on average would be millions of acre feet less Delta outflow than baseline conditions, and "are not protective of fish and wildlife." Draft SED at 7.24-5 to 7.24-6 and Fig. 7.24-1; *see also* Recirculated SED at 13-204 (under the Minimum Required Delta Outflow nearly all of the ecological flow thresholds for fish are never achieved). While the State Water Board claims that the proposed mitigation measures "can reduce impacts," or "may mitigate these impacts" from future water supply projects, *see id*. at 13-408 to 13-409, the mitigation measures do not require that Delta outflow be maintained at the levels modeled in the Recirculated SED or even that Delta outflow be maintained at baseline levels. Those mitigations are, by definition, uncertain and speculative because they have been proposed to be determined outside of the process of updating the Bay-Delta Plan.

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[84] *See* Recirculated SED at 13-409.
[85] *Id.* at 13-409 to 13-410.
[86] The same is true with respect to the Interior Delta Flow objectives (e.g., more negative OMR flows) and the Cold Water Habitat objective (increased water temperatures that harm salmon upstream).

D. The State Water Board Has Failed to Adequately and Accurately Assess Potential Environmental Impacts from the Proposed Project

As discussed *supra*, the modeling used by the State Water Board in the Recirculated SED fails to accurately and adequately assess likely environmental impacts, including: the failure to account for the effects of climate change on hydrology and temperature; the failure to account for TUCPs that weaken or eliminate Delta outflow objectives; the failure to adequately account for flow flexibility under the voluntary agreement; and the failure to adequately model and analyze the effect of flows at the bottom end of the adaptive range, including water supply adjustments (45 percent unimpaired flow plus water supply adjustments). The modeling assumptions in the Recirculated SED overestimate Delta inflows and Delta outflows that are likely to result from the Revised Draft Plan and inaccurately assess water temperatures, resulting in the document overstating potential environmental benefits, and failing to disclose the scope and magnitude of environmental impacts that are likely to result, including cumulative impacts.

E. The State Water Board Has Failed to Consider a Reasonable Range of Alternatives

In addition, the State Water Board failed to consider a reasonable range of alternatives in the Draft SED and Recirculated SED, violating CEQA. First, while the Draft SED considered alternative ranges of unimpaired Delta inflow and outflow to achieve those water quality objectives (high and low flow alternatives), the State Water Board failed to consider any regulatory alternatives for achieving the Cold Water Habitat and Interior Delta Flow objectives.[87] The Recirculated SED also does not analyze any regulatory alternatives for achieving the Cold Water Habitat and Interior Delta Flow objectives. Because the State Water Board failed to consider any alternatives for achieving these objectives (which is particularly problematic since, as discussed *infra*, these objectives are not lawful, and the record fails to demonstrate that the objectives would be achieved) the State Water Board has violated CEQA.

In addition, in the Revised Draft Plan the State Water Board has modified the proposed regulatory alternative to significantly reduce the required Delta inflows and Delta outflows, resulting in Delta outflows that are outside of the range of the 55 percent alternative analyzed in the SED (45 to 65 percent of unimpaired flow), and instead requiring flows that are within the range of the Low Flow alternative in two thirds of years, with only wet years requiring 55 percent of unimpaired flow. These "water supply adjustments" significantly reduce Delta inflows and outflows compared to the original alternatives, and the 55w/WSA alternative is the only alternative to the voluntary agreement considered in the Recirculated SED. It is unclear if the State Water Board is still considering higher flow alternatives, such as 55 percent or 65 to 75 percent of unimpaired flow. As a result, it appears that the Recirculated SED no longer includes a

[87] The State Water Board considered the equivalent of a no action alternative for the Interior Delta Flow objective but did not consider any other alternatives.

reasonable range of alternatives with significantly higher Delta inflows and outflows compared to the lawful environmental baseline of then-existing conditions in the year 2009.

In addition, the State Water Board failed to analyze alternatives for managing within its original proposed adaptive range (45% to 65% of unimpaired flow) or for making "water supply adjustments" to the proposed flow requirements. As noted *supra*, the Board never provided a complete analysis of an alternative that allows for flexibility within an adaptive range, requires reservoir storage to protect cold water and water supply, provides specific, science-based methods and rules for meeting unimpaired flow targets within that range, and considers specific outlier conditions when flows might vary outside the adaptive range, while still protecting water storage and other beneficial uses. Evaluating such an alternative is eminently feasible; indeed, in its development of the environmental documentation for the 2024 Biological Opinions for the Long-Term Operation of the CVP, the Bureau of Reclamation evaluated a similar alternative based on a more sophisticated approach to managing flexibly within an adaptive range. *See* Friends of the River et al. Letter to State Water Board, December 24, 2024; SF Baykeeper et al. Letter to State Water Board, October 17, 2025.

Finally, not only did the State Water Board fail to analyze alternatives, but it has also predetermined the outcome of this process before conducting or publishing an analysis of the proposed plan under CEQA. Such post-hoc review is illegal. *See Save Tara v. City of W. Hollywood,* 45 Cal.4th 116 (2008). In July, the State Water Board released a draft of the plan update including the voluntary agreements and the Water Supply Adjustments without publishing review and analysis of that plan. Shortly after legislative proposals to exempt water quality control plans from CEQA's requirements failed to be adopted, the Draft Plan was withdrawn. In December, that same plan was proposed, this time with CEQA analysis.

The preordained outcome was made crystal clear by State Water Board members during the January 26-28 hearings, with Board Members explaining that they were going to adopt the voluntary agreements at the same time they were hearing testimony from interested parties and staff about whether to do so. After seventeen years, the State Water Board should and must follow the evidence, not make decisions and then attempt to engineer evidence after the fact to support the outcome.

F. The Proposed Inclusion of Flows from the Upper San Joaquin River as part of the Voluntary Agreement Violates CEQA

In the revised Bay-Delta Plan, the State Water Board proposes to adopt a voluntary agreement that includes the management of instream flows from the upper San Joaquin River, described as the "Friant System (San Joaquin River) Voluntary Agreement." *See, e.g.*, 2024 Draft Plan, Appendix B.1, at B-50 (hereinafter, "Friant VA"). The Friant VA includes "water releases made from Friant Dam" pursuant to the settlement agreement to restore the San Joaquin River. *Id.*, App. B.1 at B-50 and fn. 4; *see also* Draft SED, App. G1, at 21 (describing the Friant VA as

"Continued implementation of the San Joaquin River Restoration Program."); Revised Draft Plan at 64, 67, 71.

Several of the signatories to this letter are also parties to the 2006 Settlement Agreement to restore the San Joaquin River that created the San Joaquin River Restoration Program, and these organizations continue to work in good faith to implement the Settlement and restore the health of the San Joaquin River. However, the 2006 Settlement Agreement makes clear that it was not intended to address obligations of the defendants with regard to issues beyond the scope of the litigation, such as the Bay-Delta Plan. *See* Stipulation of Settlement, ¶ 32 and 45(a).

The inclusion of the Friant VA as part of the Bay-Delta Plan is plainly unlawful for a number of reasons.

First, the State Water Board has never provided public notice, as required under the Administrative Procedures Act ("APA") and CEQA, that it was considering adopting regulations that would affect flows in the San Joaquin River upstream from the Merced River, including water releases from Friant Dam. *See, e.g.*, State Water Board, Notice of Opportunity for Public Comment and Hearing on Revised Draft Sacramento/Delta Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Watershed, July 24, 2025, at 1 (describing the geographic scope as the Sacramento River watershed, Delta eastside tributaries, and Delta); *see also* 2012 Revised NOP (excluding San Joaquin River from the geographic scope of the project, and excluding comments on Lower San Joaquin River flows). Adoption of the Friant VA without providing adequate notice would be unlawful.

Second, the State Water Board has violated CEQA because it has failed to consider any alternatives, including regulatory alternatives, to the Friant VA. Unlike the voluntary agreements proposed for the Sacramento River or Delta, none of the alternatives considered in the Draft SED include instream flows from the upper San Joaquin River. Nor did the State Water Board consider any alternatives with respect to how much of the San Joaquin River Restoration Program Flows must contribute to Delta outflow; the State Water Board has never considered alternatives, such as requiring all San Joaquin River Restoration Program flows to contribute to Delta outflow. Nor has the State Water Board considered requiring increased flows from the upper San Joaquin River, in order to contribute to Delta outflow and provide reasonable protection for fish and wildlife in the San Joaquin River. In order to comply with CEQA, the State Water Board must consider a reasonable range of alternatives to the Friant VA, including one or more alternatives that include increased Delta outflows, and one or more alternatives that include increased minimum instream flow requirements for all years, based on a percentage of unimpaired flows, and adequately protective water temperature requirements that apply to all water rights in the upper San Joaquin River.

Equally important, the State Water Board has failed to analyze the effects of the proposed Friant VA or alternatives to the Friant VA on the environment of the upper San Joaquin River, notwithstanding the State Water Board's obligations under CEQA, Porter-Cologne, and the

Public Trust. Indeed, the geographic scope of the State Water Board's environmental analysis completely excludes the upper San Joaquin River. *See, e.g.*, Draft SED at 7.1-11 to 7.1-12 (defining the Plan Area to include the Sacramento River and its tributaries, Delta eastside tributaries, legal Delta, Suisun Marsh, and SF Bay); *id*. at Fig. 7.1-1b (excluding upper San Joaquin River from the Plan Area); *id*. at Fig. 7.1-1c (excluding upper San Joaquin River from the Plan Area). The State Water Board has conducted no analysis of the effects of the Friant VA on salmon in the upper San Joaquin River, other fish and wildlife species, or other environmental effects, in either the Draft SED or Recirculated SED, or considered the effects of alternative flow regimes that, for instance, might improve temperature conditions or improve the connectivity between the upper San Joaquin and downstream areas. *See also* Draft SED at 9-2 (admitting that the Draft SED evaluates the effects of flows from the San Joaquin River on Delta outflows, but that it does not analyze effects upstream of the Delta in the San Joaquin River). Indeed, the Recirculated SED admits that flows from the upper San Joaquin River from the San Joaquin River Restoration Program are not explicitly modeled. *See, e.g.*, Recirculated SED at 13-26, 13-48.

The failure to analyze the effects of the Friant VA on salmon and other fish and wildlife in the upper San Joaquin River is particularly egregious in light of the State Water Board's duties under Porter-Cologne and the Public Trust. The adoption of the Bay-Delta Plan, including the Friant VA, would necessarily include a finding that the Plan provides reasonable protection for fish and wildlife and other beneficial uses. *See* Revised Draft Plan at 4 ("This plan provides reasonable protection for the Bay-Delta watershed's beneficial uses"); *see also id*. at 1, 92. However, given the lack of any consideration or analysis of the effects of the Friant VA on salmon and the environment in the upper San Joaquin River, such a conclusion would plainly be arbitrary and capricious. And in fact, the State Water Board has previously disclaimed such a finding regarding the adequacy of the instream flows required under the Settlement, instead finding that,

> The State Water Board's authorization for releases and dedication of SJRRP flows at Friant Dam and the conditions specified thereof, including authorized releases for dedication of flows at Friant Dam and levels and timing of flows in reaches of the San Joaquin River and Bypass System, are provided solely for the purpose of implementing the Settlement and Settlement Act. The State Water Board has not imposed any water quality flow standards on the upper mainstem San Joaquin River in the stream reach covered by the SJRRP petitions; any future adoption of such standards would have to be accomplished in compliance with all applicable laws. *Nothing in this order determines or predetermines whether or not the Board would find the SJRRP Flows sufficient to satisfy potential future water quality standards or any other instream beneficial use requirement.*

State Water Board, Division of Water Rights, Order Approving Change and Instream Flow Dedication, In the Matter of Permits 11885, 11886, and 11887, and License 1986 (Applications 234, 1465, 5638 and 23, respectively) of the U.S. Bureau of Reclamation, Petitions for Change Pursuant to Water Code Sections 1700 and 1707, October 21, 2013, term and condition 23

(emphasis added). The Settlement agreement to restore the San Joaquin River resolved the parties' claims with respect to section 5937 of the Fish and Game Code, but the Settlement did not purport to address any other obligations of state law. *See* Stipulation of Settlement, ¶¶ 1-2, 32; *see also* P.L. 111-11 § 10006(b).

There is simply no analysis to support a conclusion that the Friant VA provides reasonable protection of fish and wildlife. And despite the best efforts of the parties to the Settlement, there is plainly evidence that, as *currently implemented*, the Settlement fails to provide reasonable protection of fish and wildlife beneficial uses.

Most notably, the State Water Board has not acknowledged in this regulatory proceeding, let alone considered, that less than half of the Restoration Flows annually required under the Settlement agreement have actually been released into the San Joaquin River to protect fish and wildlife.[88] *See* NRDC and TBI 2021. While the settling parties agreed in 2006 that the Restoration Flows required under the Settlement *should* meet the requirements of section 5937 of the Fish and Game Code, there is no basis for concluding that only providing half of those instream flows would likewise meet the requirements of state and federal law.

In addition, despite the State Water Board's recognition of the need to manage water temperatures below mainstem dams to protect fish and wildlife beneficial uses and the other beneficial uses they support, there is no analysis of whether, under the Friant VA, water temperatures below Friant Dam are adequate to protect salmon and other fish and wildlife. *See, e.g.*, Draft SED, Appendix G3e; *id*., Appendix A6; *id*., Appendix A8.[89] In fact, the Recirculated SED admits that implementation of the Friant Voluntary Agreement could cause changes in cold water habitat that impact biological resources. *Id*. at 13-302, 13-352. But no modeling or substantive analysis was provided in the Draft SED or Recirculated SED.

The State Water Board has also not acknowledged or considered that in 2014 and 2022, the San Joaquin River was completely dewatered below Sack Dam – notwithstanding the requirements of section 5937 of the Fish and Game Code – when low water allocations resulted in a so-called call on Friant, where the Bureau of Reclamation delivers water to the Exchange Contractors from Friant Dam. Neither the State Water Board nor other state and federal agencies have ever analyzed or considered the effects of a call on Friant under NEPA or CEQA, including as part of the approval of the San Joaquin River Restoration Program and 1707 permit. And in this proceeding, the State Water Board has wholly failed to consider if continued implementation of the Settlement Agreement pursuant to the Friant VA, notwithstanding future dewatering of the

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[88] *See* 2024 San Joaquin River Default Restoration Allocation and Default Flow Schedule, p. 23. Available at: https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://restoresjr.net/wp-content/uploads/2025/05/2974___20240517-SJRRP-Restoration-Allocation-Final_508.pdf

[89] And notwithstanding the legal inadequacy of the Bay-Delta Plan's proposed Cold Water Habitat objective, the Program of Implementation completely excludes Friant Dam from this element of the Plan. *See, e.g.,* Revised Draft Plan at Table 8.

San Joaquin River in years when there is a call on Friant, would provide reasonable protection of fish and wildlife or other beneficial uses.

Finally, the State Water Board's consideration of the Friant VA grossly mischaracterizes the requirements of, and is inconsistent with, the terms of the Settlement regarding recapture of Restoration Flows. For instance, the Revised Draft Plan claims that, "Most of the SJRRP restoration flows are intended to be rediverted (or recaptured) in the lower SJR and at Delta export facilities for recirculation to agricultural demands and not to become part of Delta outflow." Revised Draft Plan, App. B1, at B-51. In fact, the Settlement explicitly requires that any recapture of Restoration Flows "shall have no adverse impact on the Restoration Goal, downstream water quality or fisheries." Stipulation of Settlement, ¶ 16(a)(1). The Revised Draft Plan never evaluates whether this proposed level of recapture would have any adverse impact on the Restoration Goal, downstream water quality or fisheries. In fact, there appears to be no analysis justifying the proposed recapture limit, and it appears to simply be arbitrary. As several parties to the Settlement have repeatedly explained – to the State Water Board and federal agencies – the Settlement imposes significant limits on recapture that are not currently being implemented. *See, e.g.*, Letters from Friends of the River to State Water Board and Bureau of Reclamation dated October 6, 2025 and November 14, 2025. Instead of complying with the Settlement's explicit restrictions on recapture of Restoration Flows, the Friant VA would plainly override the Settlement's plain language and replace the Settlement's limitations on recapture with an arbitrary and capricious proposal. *See also* Stipulation of Settlement, ¶ 29 (requiring that all agreements with third parties to implement material terms of the Settlement must be consistent with the terms of the Settlement).

While the parties to the Settlement continue to work in good faith to protect fish and wildlife in the San Joaquin River, the State Water Board's adoption of the Friant VA as part of the Bay-Delta Plan would be unlawful.

X. Conclusion

In addition to the many issues and concerns discussed in depth in these and previous comments and analyses submitted to the State Water Board in these proceedings, we join in the recommendations and concerns raised in the comment letters submitted today by Save California Salmon et al, related to the Trinity and Klamath watersheds, and the Delta Tribal Environmental Coalition related to Tribal Beneficial Uses, traditional ecological knowledge, Tirbal engagement, harmful algal blooms, and the State Water Board's conflation of water rights and water quality.

Our organizations are committed to restoring the health of the Bay-Delta estuary, its Central Valley watershed, and its native fish and wildlife populations, which also protects the communities, Tribes, and jobs that depend on its health. Unfortunately, the Revised Draft Plan wholly fails to fulfill the State Water Board's statutory mandate and obligations under the Public Trust, and adoption of the voluntary agreements as proposed would be unlawful as explained

herein and in our prior correspondence. For all of these reasons, we urge the State Water Board to reject the voluntary agreements and substantially amend the Revised Draft Plan to actually protect and restore salmon, other native fish and wildlife, water quality, the ecosystem that supports them, and the people who depend on them – as required by state and federal law.

Thank you for consideration of our views.

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