January 19, 2024

Joaquin Esquivel, Chair
Members of the Board
State Water Resources Control Board
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Transmitted via email

Re: Comments of California Sportfishing Protection Alliance and AquAlliance on the Draft Staff Report in Support of Potential Sacramento/Delta Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

Dear Chair Esquivel and Members of the Board:

The California Sportfishing Protection Alliance and AquAlliance (hereinafter, CSPA et al.) respectfully comment on the Draft Staff Report in Support of Potential Sacramento/Delta Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Draft Staff Report). The State Water Resources Control Board (State Water Board or Board) released the Draft Staff Report on September 28, 2023.

I. Executive Summary

CSPA et al. is pleased to see the Draft Staff Report finally hit the street. The status of the aquatic ecosystem and fisheries of the Bay-Delta estuary and its greater watershed is dire and worsening. We urge the State Water Board to act urgently on the Report with an update to the Bay-Delta Plan that supports restoration of the ecosystem.

A. Positive Highlights of the Draft Staff Report

CSPA et al. appreciates the fact that the Draft Staff Report makes a serious effort to analyze the application of a percent-of-unimpaired flow construct as the cornerstone of updated flow objectives for the Bay-Delta Plan. The implications of such an effort are broad and require consideration of many diverse but interconnected issues. As a general matter, the breadth of the subject matter that the Draft Staff Report addresses, including the subject matter of proposed objectives, is commendable.

CSPA et al. also appreciates the development by State Water Board staff of the SacWAM model and the deployment of the model in support of the Draft Staff Report. It is essential that State Water Board staff have independent water operations modeling capacity with a model that is independent of the control of personnel from the Department of Water Resources (DWR) and the Bureau of Reclamation (Reclamation). It is clear that the development of SacWAM and its use in support of the Draft Staff Report was a major technical effort.

The Draft Staff Report's methodology of evaluating flow requirements against identified key flow thresholds for various lifestages of fish and other aquatic organisms generally makes sense.[1] This methodology is drawn from the 2017 Scientific Basis Report. As colleagues from other non-governmental organizations have pointed out in hearings on the Plan update, some of the identified thresholds require modification based on scientific documents published in the last seven years (or overlooked in 2017). However, the methodology is basically sound.

Finally, the Draft Staff Report seeks to address many essential issues, such as how to respond to droughts, the erosion of flow requirements by new water rights and/or other sources of increased diversions, reservoir operations and associated water temperature, and limitations on Delta exports. The Draft Staff Report does well to identify these issues and propose objectives or other measures to address them. However, in many cases that we identify below, the Draft Staff Report does not succeed in proposing objectives or other measures that would allow the Bay-Delta Plan update to achieve its required purposes.

B. Deficiencies in the Draft Staff Report

As described further below, the Draft Staff Report has many deficiencies, among which are:

- The project description is not sufficiently complete to allow full analysis.
- Many of the proposed objectives are inadequate to achieve the project purposes.
- The alternatives are insufficiently defined, and as stated most would not meet the narrative objectives.
- The Proposed Plan Amendments are insufficient to meet the narrative objectives.
- The alternatives, including the Proposed Plan Amendments, are insufficiently defined to evaluate impacts.
- The proposed reliance on "voluntary implementation" is unworkable and defers analysis needed to evaluate impacts.
- The modeling and descriptions of model output are inadequate in multiple ways.
- The inclusion of the proposed Voluntary Agreements (VAs) as a project alternative is facially inadequate, because the VAs are wholly inadequate to meet the project purposes.
- There is a suite of shortcomings of the VAs; these are dealt with separately in these comments.

[1] *See, generally,* Draft Staff Report, Chapter 3.

II. Standard of Review

The Draft Staff Report announces that in its entirety it is a substitute CEQA document. Thus, CEQA is a legal standard with which the Draft Staff Report must comply.

In addition, the Draft Staff Report also states that it is designed to comply with the Porter-Cologne Water Quality Control Act, and specifically with Water Code § 13241. This is a second standard of review. To the degree that the Draft Staff Report must describe enough of the program of implementation to allow analysis (including analysis of impacts under CEQA), the Draft Staff Report must also comply with Water Code § 13242.[2]

The Draft Staff Report gives scant attention to the common-law public trust doctrine. This, however, is a critical standard of review for evaluation of the Draft Staff Report.

Equally, the Draft Staff Report gives only passing mention of the reasonable use doctrine, as set forth Article X, Section 2 of the California Constitution and restated in § 275 of the Water Code. This too is a critical standard of review for evaluation of the Draft Staff Report.

Finally, the Draft Staff Report does not explicitly consider necessary requirements under the federal Clean Water Act, particularly § 131.11 that requires the State Water Board's water quality criteria to be based on sound scientific rationale and to protect the most sensitive use among designated uses.

A. The failure of the Draft Staff Report to include the public trust and reasonable use doctrines as explicit standards of review improperly constrains analysis and violates CEQA.

The Draft Staff Report's omission of the public trust doctrine and reasonable use doctrine as standards of review are a fatal flaw under CEQA. This is because the Draft Staff Report thus fails to evaluate an entire suite of feasible mitigation measures involving specific and active reduction of water deliveries, and in particular agricultural irrigation deliveries, in order to protect public trust resources and in order to assure the reasonable use of water. The State Water Board can use its authorities under the public trust doctrine and the constitutionally mandated reasonable use doctrine to evaluate mitigation options that on their face may conflict with the water rights rule of priority. This principle is clearly spelled out in *Light v. State Water Resources Control Board* (2014) 226 Cal.App.4th 1463 [173 Cal.Rptr.3d 200]:

> [T]he Board has the ultimate authority to allocate water in a manner inconsistent with the rule of priority, when doing so is necessary to prevent the unreasonable use of water. (El Dorado, supra, 142 Cal.App.4th 937, 966.) Because " 'no one can have a protectible interest in the unreasonable use of water' [citation] . . . when the rule of priority clashes

[2] "Pursuant to California Code of Regulations, title 23, section 3777, subdivision (b), the SED must include: … An environmental analysis of the reasonably foreseeable methods of compliance." Draft Staff Report, p. 7.1-3.

with the rule against unreasonable use of water, the latter must prevail." (Ibid.) {Slip Opn. Page 23}

This case, moreover, involves more than traditional water rights. As the Supreme Court held in Audubon Society [*National Audubon Society v. Superior Court* 33 Cal.3d 419 (Cal. 1983)], no party can acquire a vested right to appropriate water in a manner harmful to public trust interests and the state has "an affirmative duty" to take the public trust into account in regulating water use by protecting public trust uses whenever feasible. (Audubon Society, supra, 33 Cal.3d at pp. 446--447.) Although the Audubon Society court considered the public trust doctrine only in relation to permitted appropriative water rights, subsequent decisions have assumed the doctrine applies as well in the context of riparian and pre-1914 appropriator rights. (United States, supra, 182 Cal.App.3d at p. 106 [in Audubon Society, "the court determined that no one has a vested right to use water in a manner harmful to the state's waters"]; El Dorado, supra, 142 Cal.App.4th at p. 966 ["when the public trust doctrine clashes with the rule of priority, the rule of priority must yield"].)

State Water Board staff should revise the Staff Report to explicitly include the necessary analysis under the legal standards of the public trust doctrine and the reasonable use doctrine.

The State Water Board should also revise the Staff Report to conduct a more robust analysis of feasible mitigation measures consistent with the State Water Board's public trust and reasonable use authorities. We discuss this further in the sections on alternatives and objectives, below.

B. The failure of the Draft Staff Report to conduct an explicit public trust analysis violates the public trust doctrine.

Governments have a permanent fiduciary responsibility and obligation to protect the public trust, which is defined as the people's common heritage of streams, lakes, marshlands and tidelands and which can only be surrendered in rare instances when abandonment of that right is consistent with the purposes of the trust. The public trust is essentially a property right in healthy and vibrant waterways belonging to all Californians. Moreover, the Delta and its tributary rivers are national treasures belonging to all citizens of the United States.

Pursuant to legislative direction, the State Water Board conducted an intensive year-long proceeding in 2010 to determine flows in the Delta and its two major tributary rivers necessary to protect public trust resources. The resulting 2010 Delta Flow Criteria Report found that "Delta flows are insufficient to support native Delta fishes" and that "75 percent of unimpaired Delta outflow from January through June" and was necessary to protect public trust resources.[3]

[3] *See* State Water Board (2010), Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (Delta Flow Criteria Report), p. 5. Available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

Members and staff of the State Water Board have clearly stated that the update of the Bay-Delta Plan for the Sacramento River and Delta will incorporate the necessary public trust balancing between competing uses of water.[4] Unfortunately, the Draft Staff Report's balancing is framed in terms of Porter-Cologne and is not at all explicit in situating that balancing in the context of the public trust. See Chapter 5, for example, which mentions the public trust as conferring only general authorities and makes no references to the State Water Board's specific responsibilities under the public trust doctrine.[5]

Moreover, the Draft Staff Report's quantification of the benefits of a restored Bay-Delta ecosystem is limited and perfunctory. It fails to describe or discuss the rationale and methodology employed in the public trust balancing the Board promised in 2010. The Draft Staff Report quantitatively analyzes economic costs to agricultural and selected M&I water users. But after expending considerable effort and resources in quantitatively analyzing the costs of providing increased flows, the Draft Staff Report essentially limits its assessment of the benefits side of the ledger to direct revenues from fishing and recreational river tourism.[6] Even there, it overlooks fish species other than salmon, including Delta fisheries.

The Draft Staff Report either ignores or fails to analyze the economic benefits of healthy waterways – including ecosystem services, commercial and sport fisheries, recreation and public health as well as the contingent value of a healthy river/estuary – and provides only a general qualitative assessment. The failure to quantitatively analyze and describe both sides of the benefit/cost ledger renders the economic analysis insufficient as a balancing document.

Public trust values cover far more than salmon restoration. They include ecosystem services, which encompass such things as clean water and the decomposition, detoxification or dilution of wastes; public health benefits; cultural values such as spiritual and recreational benefits (beyond fishing); avoided treatment or infrastructure replacement costs; hedonic pricing such as improved property values along healthy waterways; and improved biodiversity within watersheds. Public trust values also include the contingent valuation of healthy ecosystems, which are not limited to fishing or salmon restoration.

Balancing the public trust is, at best, extremely difficult in a vastly overappropriated watershed where excessive water diversions have degraded and substantially diminished public trust assets. In California, water belongs to the people, and the right to use water is usufructuary and not possessory. Put in the context of rights to water, a user of water must respect the rights and interests of others, including the people's property right to robust fisheries, clean water, and healthy ecosystems. The Draft Staff Report fails to acknowledge or quantitatively analyze the full range of public trust resources in the project area and, consequently, fails to conduct a defensible balancing of public trust benefits and resources and the existing consumptive uses of water. This violates both CEQA's requirements for analysis and fair disclosure and the State Board's legal responsibility to adequately and fairly balance the public trust.

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[4] *See, e.g.*, introductory note added at the very front of the Delta Flow Criteria Report, where the State Water Board made clear that the balancing public trust resources with consumptive water uses would occur at a later date.
[5] Draft Staff Report, p. 5-7.
[6] *See id.*, Chapter 8.

C. The failure of the Draft Staff Report to conduct an explicit public trust analysis violates the State Water Board's July 17, 2020 Settlement Agreement with CSPA et al.

The failure of the Draft Staff Report to deploy the public trust doctrine as a standard of review violates the July 17, 2020 Settlement Agreement of the State Water Board with CSPA et al.[7] The July 17, 2020 Settlement required, *inter alia*, at ¶ 4, a "Transparent Public Trust Evaluation for the Bay-Delta Plan Update."[8] 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: …
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> • 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.[9]

State Water Board staff should revise the Staff Report to explicitly include the public trust analysis promised in the July 17, 2020 Settlement Agreement.

D. Structure of legal analysis in these comments.

These comments are organized by topic. Thus, for instance, the comments on the "Proposed Plan Amendments" review each proposed objective from a technical and legal perspective. The legal analysis is broken down by standard of review (CEQA, Porter-Cologne, public trust, reasonable use, federal Clean Water Act) as appropriate. By contrast, there is not a separate and distinct section of this document exclusively devoted to all CEQA issues.

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[7] *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/news/wp-content/uploads/2020.07.17-CSPA-v.-SWRCB-Settlement-Fully-Executed-1.pdf

[8] *Id.*, p. 3.

[9] *Id.*, p. 4.

III. The Draft Staff Report describes the purpose of the Update too narrowly.

The Draft Staff Report, Chapter 7, states the "Purpose and Goals of the Sacramento/Delta Update to the Bay-Delta Plan" as follows: "The underlying fundamental purpose of the project is to establish water quality objectives, a program of implementation, and monitoring and special study measures for the reasonable protection of fish and wildlife beneficial uses in the Sacramento/Delta."[10]

As phrased, this statement of purpose is framed in the context of Porter-Cologne. This framing at least has the virtue of stating the purpose in terms of beneficial uses. Thus, it recognizes that more is needed that incremental improvement in existing conditions of fish and wildlife.[11]

However, as suggested above in the context of CEQA, the Update must also meet the requirements of the public trust doctrine, which requires the protection of the public trust uses of fish and wildlife "wherever feasible." *National Audubon* at 446. "Wherever feasible" is a different and more stringent standard than "reasonable protection."

Equally, the Update must comport with the reasonable use doctrine. Reasonable use is distinct from "reasonable protection." Reasonable use also implicates a more stringent standard than reasonable protection, because, as cited *supra* from *Light*, it trumps other sections of the Water Code

A potential fix to the shortcomings of the summary statement of the "underlying fundamental purpose" of the update would be to add at the end of the sentence the additional phrase, "consistent with the public trust doctrine and the reasonable use doctrine."

IV. The Draft Staff Report includes some goals that are inappropriate.

The Draft Staff Report's summary statement of Goals includes the following two statements:

4. Provide for voluntary and default pathways with flexibility for establishing beneficial habitat conditions for native fishes, addressing scientific uncertainty and changing conditions, developing scientific information that will inform future management of flows, and meeting biological goals.

8. Provide for and encourage collaboration, coordination, and integration of regulatory, scientific, and management processes related to flows in the Sacramento/Delta.[12]

[10] Draft Staff Report, p. 7.1-3.
[11] This stands in contrast to the framing of the proponents of Voluntary Agreements. *See*, for instance, the December 11, 2023 presentation to the State Water Board by California Resources Secretary Wade Crowfoot, whose announced "problem statement" was "we have to improve environmental conditions."
[12] *Id*., p. 7.1-5 and 7.1-6.

The "voluntary … pathways" and the encouragement of collaboration do not have a place in a regulatory document ***as goals***. As a policy matter, they may state the preferences of the agency for how a water quality control plan is implemented. But they are not the goals of such a plan, and any conflict with the legal requirements of such a plan and its implementation (under Water Code § 13242 or other) must be resolved in contravention of such policy preferences.

The allowance and apparent preference in the Draft Staff Report for voluntary implementation appears to be modeled in substantial part on the Sustainable Groundwater Management Act (SGMA). As described below, there are important differences between the implementation of SGMA and the Bay-Delta Plan, not least of which is the fact that implementing the Bay-Delta Plan involves coordinated operation of water users throughout the Sacramento River and Delta watersheds. In opposite priority from SGMA, the implementation of the update of the Bay-Delta Plan should start from a default program, not end there if a voluntary program does not achieve a satisfactory outcome.

Moreover, the in-crisis condition of the Bay-Delta ecosystem cannot not allow a decade for various water users within watersheds and across watersheds to work their issues out.

V. Review of proposed objectives in the Draft Staff Report (Chapter 5).

The breadth of the proposed objectives in the Draft Staff Report is generally positive. Some of the objectives require refinement.[13]

A. The Delta Inflow Objective is directionally appropriate but requires refinement.

The Delta Inflow Objective reads as follows:

> *Maintain inflow conditions from the Sacramento River/Delta tributaries sufficient to support and maintain the natural production of viable native fish populations and to contribute to Delta outflows. Inflow conditions that reasonably contribute toward maintaining viable native fish populations include, but may not be limited to, flows that more closely mimic the natural hydrographic conditions to which native fish species are adapted, including the relative magnitude, duration, timing, quality, and spatial extent of flows as they would naturally occur.*
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> *Maintain inflows from the Sacramento/Delta tributaries at 55% of unimpaired flow, within an allowed adaptive range between 45 and 65% of unimpaired flow.*[14]

The narrative and numeric objectives cited above are in contradiction. As discussed below in the section addressing Alternatives, and as further discussed in the written and oral comments of Baykeeper et al., an inflow objective of 55% of unimpaired flow, within an

[13] The discussion in this section of these comments pertains to proposed regulatory amendments to the Bay-Delta Plan, and regulatory alternatives to the proposed amendments. Discussion of "Voluntary Agreements" is found in a separate section of these comments.
[14] *Id.*, p. 5-17.

adaptive range of 45%-65%, is not "sufficient to support and maintain the natural production of viable native fish populations."[15] A higher range of inflows is required.

In addition, it is not clear that inflow "sufficient to support and maintain the natural production of viable native fish populations" is a comprehensive enough objective. This is because what is "viable" does not clearly protect the beneficial uses of commercial fishing (COMM) and recreational fishing, and other forms of recreation such as boating and swimming (REC). Not only do there need to be fish populations, there also need to be fish populations sufficient to fish for. In the case of salmon, at minimum, populations and annual production need to be sufficient to support a commercial fishery.

It is not clear that the statement of the "underlying fundamental purpose of the project" in Chapter 7 of the Draft Staff Report and cited above ("the reasonable protection of fish and wildlife beneficial uses in the Sacramento/Delta") explicitly includes the beneficial uses of fishing and recreation. As also noted previously, explicit reference to consistency with the public trust doctrine in that statement of "fundamental purpose" would clarify the requirement and eliminate the ambiguity, in this case because public trust uses of the state's waters clearly include fishing, as well as other activities such as boating, swimming, and other forms of recreation.

B. The Cold Water Habitat Objective is directionally essential, but its rationale and the discussion of its implementation are incomplete.

The narrative Cold Water Habitat 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.*[16]

The objective as stated is reasonably complete.

The rationale for the Cold Water Habitat Objective states that it is "complementary measure to the inflow objective" and is "intended to ensure that there are no redirected impacts on cold water habitat from the new inflow and Delta outflow objectives and to address other existing and potential future temperature management concerns on the tributaries for salmonids and other native species."[17] Thus, the Cold Water Habitat Objective has important functions under both CEQA and Porter-Cologne, as well as under the public trust doctrine and the Clean Water Act.

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[15] CSPA et al. hereby incorporates by reference the written and oral comments of Baykeeper et al. regarding the flows needed to achieve the reasonable protection of fish and wildlife.
[16] Draft Staff Report, p. 5-22.
[17] *Id.*

It is positive for the State Water Board to make this objective part of its water quality control plan. The absence of such an objective in the update of the Bay-Delta Plan for Lower San Joaquin River flows and southern Delta salinity was a large source of confusion. Modeling of proposed flow objectives for the lower San Joaquin River assumed but did not explicitly require carryover storage volumes for the main storage reservoirs on the three major tributaries to the lower San Joaquin River.

However, the proposed implementation of the Cold Water Habitat Objective requires refinement and further analysis.

The proposed implementation would require each rim reservoir operator, and operators of upstream reservoirs as needed,[18] to develop both a long-term strategy for reservoir management and annual operations plans for approval by the Executive Director of the State Water Board. Conceptually, both long-term strategies and annual operations plans make sense, though both would require substantial ongoing capacity and technical expertise by State Water Board staff for review, approval, and possible modification, particularly of annual plans on a quick turnaround.

Any proposed "voluntary implementation" of reservoir management and other operations would require, at minimum, clear elaboration of expected needed elements, timely regulatory oversight, review, and approval, and likely defined opportunity for public comment.

The Draft Staff Report describes the development of initial carryover storage targets for Sacramento Valley and Eastside dams as follows: "The carryover storage targets were implemented by adjusting carryover storage targets and allocations with the goal that the resulting end-of-September storage levels in the scenarios were above the carryover target as frequently as or more frequently than the baseline scenario."[19]

Perhaps the best one can say about the initial carryover storage values thus posited in the Draft Staff Report is that one has to start somewhere. There is some justification for the thermal effects of using historical values, on the general assumption (or simply hope) that reservoir operators in the past made an effort to maintain water temperatures in downstream river reaches suitable for the cold water fish that are present.

However, the idea that one can simply use historical storage values in order to develop new storage targets to complement large increases in required flows does not make technical sense. Both increased releases and climate change will change the effectiveness and effects of any storage target derived in this fashion. In addition, setting and rigidly adhering to flow requirements at high values and carryover storage based on historical operations and hydrology will overstate the water supply impacts.

There is also a CEQA aspect to the rationale for the selected initial carryover storage targets that is simply reverse engineering of storage values so that there are no significant water

[18] *See also* discussion of upstream contributions in these comments, below.
[19] Draft Staff Report, p. A1-10. Described values were for modeling purposes.

temperature impacts. This gimmick was also deployed in the modeling of the Lower San Joaquin River flow objectives in 2017. It does not mean that it can be implemented in practice. It does not mean that it will protect public trust resources from over-delivery in the first dry year followed by a crisis or "emergency" in a subsequent year.

The "buffer pool" concept the Draft Staff Report adopts to maintain storage in major north-of-Delta CVP and SWP reservoirs has the merit of separately considering those reservoirs, which are governed by massive water rights and by contracts. But it is a backwards way of determining water supply allocations for the CVP.[20] The buffer pool approach captures the understanding that water allocations from CVP and SWP reservoirs must be limited to allow both sufficient releases for Delta inflow and sufficient storage to maintain water temperatures.

In reality, CVP and SWP operators would never operate by releasing water to meet irrigation in the beginning of the year and then cutting water off when storage went below a certain threshold. In practice, CVP and SWP operators would, if acting prudently, limit deliveries so that the irrigated acreage supported by deliveries would be sustainable throughout the irrigation season. Modeling using a buffer pool approach provides a volumetric approximation of water available for delivery while still meeting Delta inflow and carryover storage requirements. However, a practical means of allocating deliveries before the fact, including consideration of how CVP and SWP operators would account for uncertainty, is needed.

The storage values for the buffer pools as shown in Chapter A1c are a particularly rough first cut.[21] Part of the issue appears to stem from choice of very conservative water temperature thresholds. Part of the issue also seems to stem from the algorithm's logic under higher Delta Inflow values such as 65%.

The Draft Staff Report seems to apply adjustments to non-project reservoirs similar to the buffer pools evaluated for CVP and SWP reservoir, but the algorithms are not explained. Thus, for instance, the carryover target for Yuba County Water Agency's operation of its New Bullards Bar Reservoir increases from a baseline of minimum 440 TAF to 700 TAF for the 65% scenario.[22] This logic for this increase is opaque. If the goal is to avoid thermal impacts, a better approach would be to provide more likely operations and disclose the thermal impacts. Releasing more water in the winter and spring to meet an increased Delta Inflow objective will create such impacts.

[20] *See* description of buffer pools, *id.*, p. A1-13 ff.
[21] *See id.*
[22] See Table A1-9, p. A1-16. Note that the general baseline target is 550 TAF, not 440 TAF. It is also unclear how the values in Table A1-9 square up with the value for New Bullards Bar stated in Table A1-3.

C. The State Water Board must balance Delta inflow, reservoir storage, and water deliveries, among all watersheds and within each watershed covered in the Sacramento/Delta update of the Bay-Delta Plan.

The Draft Staff Report acknowledges: "[T]here is a delicate balance between the use of water for instream flows, diversion, and carryover storage."[23] Yet it is not clear in Chapter 5 of the Draft Staff Report the degree to which water deliveries would be a required part of the long-term strategies and annual operations plans for reservoir operations. Water deliveries simply must be a part of the equation to make a water balance workable. Since Chapter 5 suggests that each operator would develop the long-term strategy for each reservoir, it seems clear that the State Water Board would need to place sideboards and default expectations on how each strategy would balance water deliveries with flow releases and storage.

One partial example might be the way irrigation deliveries are addressed on the Mokelumne River, where in each dry year junior agricultural diverters are not allowed to divert and senior agricultural diverters are limited to about 65% of full diversions.[24] The limitation of municipal and industrial (M&I) diversions on the Mokelumne also serves as a potential example: East Bay Municipal Utility District (EBMUD) has reduced annual consumption in its service area substantially over the past two decades, has implemented clear rationing policies for dry-year sequences (commensurate with previous reductions in use), and has diversified its water supply portfolio by establishing a Sacramento River point of diversion near Freeport and contracting for dry-year supplies.

Yet even with this relatively exemplary division of dry-year diversions and reductions on the Mokelumne, the fact is that there is not enough water in the Mokelumne watershed to meet the Delta Inflow Objective as an equal contributor to the level needed to restore the Delta ecosystem and to also meet water temperature requirements. without severe water supply impacts to EBMUD in roughly half of all water years. With the partial exception of the American River,[25] water use on the Mokelumne is far more heavily weighted to M&I use than the other watersheds in the area of the Sacramento and Eastside watersheds. In dry years, M&I use of water sourced from the Mokelumne is roughly three times that of agricultural use.

Thus, the State Water Board must determine, based on evidence in the record, the relative contribution of each watershed to the overall Delta inflow objective. This is part of where the "voluntary implementation" concept breaks down. Each watershed requires a water budget. The water users cannot be left on their own to set it. Left to their own devices, water users in each watershed will seek to reduce the watershed's overall contribution to the Delta inflow objective. It is the State Water Board that will need to decide, for example, how in many years it will prioritize cutbacks to EBMUD against cutbacks to rice production in the Sacramento Valley.

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[23] *Id.,* p. A1-2.

[24] These baseline dry-year irrigation reductions on the Mokelumne do not seem to be accounted for in the Draft Staff Report. *See, e.g.,* Table A1-12 on p. A1-18. "Dry years" on the Mokelumne are defined specifically and locally.

[25] While there is relatively little agricultural production in the American River watershed, a varying percentage of the watershed's water resources are exported each year to agricultural CVP contractors in the San Joaquin Valley.

It is reasonable to expect that, under "voluntary implementation," water users in every watershed in every year will routinely seek to move the required release to the Delta to the bottom end of any "adaptive range" for the watershed's contribution to Delta inflow. This is not a recipe for collaboration. It is a recipe for a food fight. It is also a recipe for a *de facto* reduction of the Delta inflow requirement.

The method in which staff modeled the regulatory alternatives in the Draft Staff Report gives an indication of staff's reluctance to actively address deliveries in meeting the flow and carryover objectives. Appendix A1 states: "The general approach to using SacWAM to assess the impacts of the proposed Plan amendments is to create new flow requirements as a percentage of unimpaired flow throughout the model domain and adjust carryover storage targets to maintain cold water pools for downstream fisheries."[26] This approach leaves water deliveries not as a planning element, but exclusively as an impact. While there is value in understanding the combined potential water supply impacts of required flows and carryover storage, the mitigation of the water supply impacts, as well as thoughtful water supply planning, requires proactive consideration of water deliveries. And, of course, modeling is not real-world implementation; modeling provides insight into real-world implementation.

Numerous oral presentations by water users at the public hearings the State Water Board held on the Draft Staff Report heavily emphasized the tradeoff between flows releases to meet Delta inflow and reservoir storage to meet water temperature requirements downstream of rim dams. The ultimate goal of these presentations was to make Delta inflow objectives, at a level that will restore the ecosystem, appear unreasonable.

Left to their own devices, each water user entity within each watershed will also seek to minimize its individual (or agency) contribution to the watershed's water budget for Delta inflow. Here, too, the State Water Board has key decisions to make.

Operations modeling for the Draft Staff Report, using the SacWAM model, assumed a compliance point upstream of each rim reservoir.[27]

> Multiple IFRs [instream flow requirements] were added on each tributary to represent the assumption that all users in the watershed, whether upstream or downstream, would be responsible for contributing to the new modeled instream flow requirement. However, proposed Plan amendments may include a requirement only at the bottom of each watershed that could require upstream users to contribute more or less than downstream users based on specific water rights priorities.[28]

State Water Board staff needs to perform additional analysis to support the difficult decisions the State Water Board must make in allocating responsibility in order to meet its public trust and reasonable use responsibilities. The State Water Board will need to allocate responsibility for meeting the new objectives among watersheds and within watersheds.

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[26] Draft Staff Report, p. A1-3.
[27] *See* Table A1-2, p. A1-8.
[28] *Id.*, p. A1-7.

Allowable water deliveries, particularly in an initial dry year following a relatively wet year, must be a key element of these decisions.

D. The Delta Outflow Objective is directionally appropriate but requires further definition.

The Delta Outflow Objective reads:

> *Maintain Delta outflows sufficient to support and maintain the natural production of viable native anadromous fish, estuarine fish, and aquatic species populations rearing in or migrating through the Bay-Delta estuary. Delta outflows that reasonably contribute toward maintaining viable native fish and aquatic species populations include, but may not be limited to, flows that connect low- salinity pelagic waters to productive tidal wetlands and flows that produce salinity distributions that more closely mimic the natural hydrographic conditions to which these species are adapted, including the relative magnitude, duration, timing, quality, and spatial extent of flows as they would naturally occur. Indicators of viability include population abundance, spatial extent, distribution, productivity, and genetic and life history diversity. Viability is dependent on maintaining migratory pathways, sufficient quantities of high-quality spawning and rearing habitat, and a productive food web.*[29]

Additionally, there is (indirectly) a numeric objective:

> *The inflows required above, including for the Sacramento/Delta tributaries and San Joaquin River, are required as outflows with adjustments for downstream natural depletions and accretions.*[30]

Conceptually, the principle that requires Delta inflow to be passed through the Delta as outflow is appropriate.

The "how" is unclear. The Draft Staff Report provides some sense of a formula for determining outflow requirements as a function of inflow at specified locations, similar to those in the existing Net Delta Outflow Index. Adjustments will need to be made for the eventual Lower San Joaquin River Flow and Southern Delta Salinity objectives.

There will need to be considerable technical and regulatory effort to develop transparent and enforceable rules and accounting mechanisms for Delta outflow requirements, and they will likely require refinements over time.

The proposal to allow "voluntary implementation" of "inflow-based outflow" requirements strikes us as particularly cumbersome and difficult to enforce. The stated concept of "shaping and shifting outflows" in particular offers an opportunity for gaming the framework

[29] *Id.*, p. 5-28.
[30] *Id.*, p. 5-29.

to reduce outflows and would reduce the transparency of compliance and overall enforceability. The upsides of "voluntary implementation" of "inflow-based outflow" do not appear to outweigh the downsides.

As discussed above regarding the proposed numeric Delta Inflow Objective, the proposed value 55% of unimpaired flow value for Delta Outflow is insufficient.

E. Inclusion of a Fall Delta Outflow Objective and retention in the Bay-Delta Plan of other aspects of the existing biological opinions for CVP and SWP operations as Delta Interior Flow Objective as a backstop to potential adverse changes is directionally appropriate, but would be improved by starting from the 2008 and 2009 biological opinions.

The Draft Staff Report proposes a Fall Delta Outflow Objective that reads:

As described in the program of implementation, maintain Delta outflows during fall to provide suitable quantities of quality habitat for sensitive native estuarine species, including the flows identified in the 2019 USFWS Biological Opinion. The State Water Board may approve modifications to these flow levels based on updates to the biological opinion.[31]

In addition, the Draft Staff Report proposes a Delta Interior Flow Objective that reads:

Maintain flow conditions in the interior Delta sufficient to support and maintain the natural production of viable native fish populations migrating through and rearing in the Delta. Interior Delta flow conditions that reasonably contribute toward maintaining viable native fish populations include, but may not be limited to, flows that more closely mimic the natural hydrographic conditions to which native fish species are adapted, including the relative magnitude, duration, timing, quality, and spatial extent of flows as they would naturally occur. Indicators of native fish species viability include population abundance, spatial extent, distribution, productivity, and genetic and life history diversity. Viability is dependent on maintaining migratory pathways, sufficient quantities of high-quality spawning and rearing habitat, and a productive food web.[32]

Regarding the Delta Interior Flow Objective, the Draft Staff Report explains: "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."[33]

Integration of and consistency with the biological opinions for the operation of the CVP and SWP as a floor for Delta outflow objectives is helpful as a backstop against any weakening

[31] *Id.*, p. 5-30.
[32] *Id.*, p. 5-36.
[33] *Id.*

of the flow and other requirements in those biological opinions, but would be stronger if the conditions in the 2008 and 2009 biological opinions were incorporated as the floor instead.

It is also appropriate that the update to the Bay-Delta Plan encompass, in its own right, fall Delta outflow requirements and rules for interior Delta flows, including limitations on Old River and Middle River reverse flows (OMR). References to external documents are always problematic in regulatory documents. At minimum, the Board should consider inclusion as an appendix of the action sections of any external document that the updated Bay-Delta Plan proposes to incorporate.

F. Retention of a Base Delta Outflow Objective is conceptually appropriate.

The Draft Staff Report proposes retaining the existing Delta outflow objectives in the existing Bay-Delta Plan as a floor onto which the new proposed outflow objectives would be overlaid.[34] Retention of flow requirements in the existing Bay-Delta Plan as a floor is appropriate, which is not to say that CSPA et al. endorses the particular values in the existing Plan.

G. CSPA et al. has no objection to the Suisun Marsh Salinity Objective.

The Draft Staff Report proposes minor non-substantive changes to the existing Suisun Marsh Salinity Objective to eliminate two monitoring stations. CSPA et al. has no objection to these changes.

H. The proposed modification of the existing Delta Cross Channel Gates Objective is appropriate.

The Draft Staff Report proposed a modification to the existing Delta Cross Channel Gates Objective as follows:

> *The current Bay-Delta Plan requires the DCC gates to be closed for up to 45 days between November and January based on consultation with the fisheries agencies as specified in footnote 23. Under the proposed Plan amendments, October would be added to the period when the gates may be required to be closed, and the gates would be required to be closed based on catch indices related to entrainment risk of salmonids in the interior Delta as specified in the NMFS 2019 BiOp (^NMFS 2019 BiOp).*[35]

The stated rationale for existing November-January closures of the Delta Cross Channel Gates is to prevent entrainment into the central Delta of juvenile salmon migrating down the Sacramento River. Evaluation by EBMUD in the past decade has shown that operation of the Cross Channel Gates also affects the straying of upstream-migrating Mokelumne River adult salmon away from the Mokelumne. Many of the salmon endemic to the Mokelumne are

[34] *Id.*, p. 5-33.
[35] *Id.*, p. 5-38.

attracted to the greater flow coming through the Gates, and thus stray to the American River or other points north. Some of this straying may take place in October.

It is appropriate to expand the season of potential closures of the Delta Cross Channel Gates to include October as well as November-January. The State Water Board should also evaluate additional numbers of days for potential closures in the expanded annual time period, for instance by adding fifteen days overall to maintain a ratio of potential closures as half the number of days in the closure window.

I. The Proposed Modifications to Export Limits Objective is directionally appropriate but should be expanded.

The Draft Staff Report proposes to retain the existing Export to Inflow ratio in Water Rights Decision 1641 (D-1641). This is an appropriate minimal measure.

The Draft Staff Report also proposes to expand annual time period of applicability of a San Joaquin River flow-based export limitation, compared to the time period in D-1641. The Draft Staff Report proposes to apply the limitation throughout April and May, not only during the D-1641-required April 15-May 15. This is positive. Even more positive would be adoption of the temporal requirements of modular Alternative 4c, which would expand the window of applicability of San Joaquin River-based export limitations to the months of February through June; CSPA et al. supports such expansion of the temporal window of San Joaquin River-based export limitations.

The Draft Staff Report also proposes to further limit exports during this expanded time period, compared to D-1641. The proposed new narrative would limit exports in April and May to the Inflow to Export (I:E) ratio for the San Joaquin River adopted in the 2009 NMFS Biological Opinion for Delta operations of the CVP and SWP.

The portion of the proposed narrative Delta Export Objective stated in the Draft Staff Report would replace D-1641 footnotes 18 and 19 with a new narrative objective that reads:

> *Combined SWP and CVP exports from the southern Delta shall be limited based on San Joaquin Valley water year type (as defined in Figure 4) to a ratio of San Joaquin River flow at Vernalis to exports of 4 to 1 in wet and above-normal years, 3 to 1 in below-normal years, 2 to 1 in dry years, and 1 to 1 in critically dry years or 1,500 cfs, whichever is greater. Restrictions do not apply when Vernalis flows are above 21,750 cfs and do not apply in wet years beyond 375 TAF of export reductions. Exceptions, no lower than 1 to 1 San Joaquin River flow to export limits, may be approved by the Executive Director upon concurrence of CDFW, including as the result of emergency circumstances or updated incidental take permit provisions. The State Water Board may approve long-term modifications to this objective and associated implementation measures based on updates to biological opinion or incidental take permit provisions.*[36]

[36] *Id.*, p. 5-39.

The re-application of the 2009 NMFS objective for the I:E ratio (stated in the first sentence of the proposed objective, above), throughout April and May, is more protective than current requirements. It would undo one of the environmental rollbacks embodied in the Trump administration's 2019 biological opinions. The State Water Board should also evaluate a simpler and more protective revision of the April-May I:E ratio that limits exports to a 2:1 ratio in all water year types.

The second sentence in the proposed Delta Export Objective above would apply a "wet water year offramp" to this export limitation.[37] This weakens the conditions in the 2009 BiOp; the proposed cap on export reductions attached to this objective is not warranted. The provision for exceptions in the third sentence of the proposed narrative objective is a holdover from D-1641. It was a bad idea in 1999, and it is a bad idea in 2024. Providing real-time discretion to the State Water Board's executive director reduces certainty and equal application of rules, and invites political interference and abuse. The sentence should be stricken. The final sentence in the proposed narrative objective, suggesting a tie between export limits in the Bay-Delta plan and changes in biological opinions or incidental take permits, does not account for the real-world threats of political interference in biological opinions and incidental take permits. The State Water Board should maintain independent requirements, and thus should strike the last sentence of the proposed narrative objective.

The Draft Staff Report proposes that, as at present, Reclamation and DWR be responsible for implementing the new requirements for the San Joaquin I:E ratio. This is appropriate.

J. It is appropriate for the Bay-Delta Plan to include an Old and Middle River Flow Objective.

The Draft Staff Report provides a concise summary of many of the adverse effects of reverse flows in Old River and Middle River (OMR flows).[38] It is wholly appropriate for the update of the Bay-Delta Plan to include an Old and Middle River Flow Objective. The proposed objective reads:

> *For SWP and CVP exports greater than 1,500 cfs, Old and Middle River flows shall be no more negative than between -1,250 and -5,000 cfs at times when sensitive native fish species may be impacted by reverse flows in Old and Middle Rivers as described in the 2019 USFWS Biological Opinion, 2019 NMFS Biological Opinion, and 2020 CDFW ITP. The State Water Board may approve modifications to this objective and associated implementation measures based on updates to biological opinion or incidental take permit provisions.*[39]

The new objective should not refer to the 2019 BiOps or adopt the conditions contained in them. The state of California and several non-governmental organizations have challenged these inadequate federal documents in court, and the federal government is now in the process of

[37] *Id.*
[38] *See id.*, pp. 5-39, 5-40.
[39] *Id.*, p. 5-40.

issuing new BiOps. As a start, the present update of the Bay-Delta Plan should at minimum be consistent with the 2008 USFWS BiOp for OMR flows. More broadly, new objectives in the updated Bay-Delta Plan should wherever possible avoid references to other documents as part of its objectives. At minimum, the updated Plan should include as appendices the actionable sections of other documents where an objective relies on such documents.

The State Water Board should also evaluate new OMR requirements that are more protective than the 2008 USFWS BiOp. One potential source is Alternative 3 in the forthcoming draft environmental impact statement for the reinitiation of consultation for the CVP and SWP, which recommends limiting OMR reverse flows to 2500 cfs in a critically dry year preceded by another critically dry year.

In the discussion of proposed OMR objectives, the Draft Staff Report notes:

> As discussed in Section 7.2, *Description of Alternatives*, and Section 7.24, *Alternatives Analysis*, an alternative that does not incorporate any of the BiOp- or ITP-related provisions into the Bay-Delta Plan (including new OMR provisions and other interior Delta flow modifications, as well as fall Delta outflow provisions) is also under consideration since it may not be necessary or efficient to duplicate these provisions in the Bay-Delta Plan.[40]

CSPA et al. strongly opposes such an alternative. The State Water Board cannot legally rely on the actions of other agencies under different legal authorities to protect beneficial uses under Porter-Cologne and the public trust doctrine. The 2019 Trump BiOps are dramatic evidence of the potential practical consequences of relying on other agencies to fulfill the Board's responsibilities. It is not a matter of efficiency or duplication. It is a matter of legally required protection.

K. Brief comments on additional issues in Chapter 5.

CSPA et al. support the following concepts and statements in Chapter 5:

- Continuation, and where appropriate expansion, of a robust monitoring program, in the Delta and upstream.
- Transparent and timely public reporting of monitoring data.
- "The proposed new inflow-based Delta outflow objective would require methods for determining the required outflow level based on the inflow levels and downstream accretions and depletions that factor in travel times and other relevant factors. The proposed program of implementation would include provisions for development of such methods in coordination with other appropriate agencies."[41]

[40] *Id.*
[41] *Id.*, p. 5-56.

- "Improvements in water right reporting would be needed to implement this broader responsibility. Improvements include more accurate demand data and accurately reporting diversions under the correct water right."[42]
- "The proposed program of implementation would [have to] include provisions for developing a methodology and system for identifying and notifying water users when they must reduce or cease diversions (bypass flows) at their priority of right to meet the proposed Plan amendments."[43]

CSPA et al. recognizes that, as stated in the Draft Staff Report, "[m]any water transfers become a form of flexible system reoperation linked to many other water management strategies."[44] There are circumstances, such as regional plans like the Bay Area Regional Reliability project,[45] in which pooling of resources under various water rights prevents the real or perceived need for unnecessary new reservoirs that urban water agencies might feel compelled to pursue if left on their own to assure water supply reliability.

However, CSPA et al. is seriously concerned with numerous issues involving the use of water transfers. Non-exclusively, these include:

- Creation of a speculative water market that monetizes a public resource for private benefit.
- Serial transfers that exploit weak rules for "temporary" actions, avoiding environmental review and understating environmental impacts.
- Serial transfers that take advantage of bloated state and federal contracts to establish semi-permanent transfer programs with water that is sold at the expense of public trust resources.
- Perfunctory review of transfer applications regarding effects on fish and wildlife.

CSPA et al. recommends that the State Water Board undertake a comprehensive review of the rules and interests concerning water transfers in the near future.

The Draft Staff Report states: "The State Water Board would also continue efforts to expedite water right permitting for groundwater recharge."[46] CSPA et al. is also seriously concerned with a potential gold rush for new water rights whose purpose is groundwater recharge. CSPA et al. recommends that the State Water Board initiate a proceeding to establish regulations and/or policies regarding water right permitting for recharge, including a global default starting point for flow requirements regarding any such water rights that the State Water Board may actually permit.[47]

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[42] *Id.*, p. 5-57.
[43] *Id.*
[44] *Id.*, p. 5-66.
[45] *See* Bay Area Regional Reliability webpage at: https://www.bayareareliability.com/.
[46] *Id.*, p. 5-69.
[47] This would be a successor to the 90/20 Rule that the State Water Board has deployed as a default for temporary permits for groundwater recharge.

VI. The proposed CEQA alternatives in the Draft Staff Report are inadequate.

There are multiple flow objectives proposed in the CEQA alternatives presented in the Draft Staff Report. As described above, the High Inflow Alternative contains the only numeric objectives that will meet the overall purpose of the project "to establish water quality objectives, a program of implementation, and monitoring and special study measures for the reasonable protection of fish and wildlife beneficial uses in the Sacramento/Delta."[48] The No Project Alternative, the Low Flow Alternative, and the even the Proposed Plan Amendments, would, if implemented, leave the Bay-Delta estuary with too little inflow and outflow to recover. However, the High Inflow Alternative is flawed because it, unlike the Proposed Plan Amendments and the Low Flow Alternative, does not allow flexibility to reduce Delta inflows in order to preserve carryover storage.

The presentation of the alternatives is confusing. Only some of the primary (as opposed to "modular") alternatives have numbers. The "Proposed Plan Amendments," apparently though not explicitly the Proposed Project under CEQA, does not have a number. Both for ease of reference and to put the alternatives on the same footing, it would be clearer to assign a number to the "Proposed Plan Amendments" (whatever they may end up being), or at minimum to clearly identify the proposed plan amendments collectively as a Proposed Project or Preferred Alternative under CEQA.

The Voluntary Agreement Alternative (Alternative 6) has no business in the Draft Staff Report. It clearly does not meet the project purpose. In fact, its adoption would defeat the project purpose because it would further degrade the Bay-Delta ecosystem that is already in crisis by delaying actions that would initiate the ecosystem's recovery. The only marginally positive feature of Alternative 6 is that analyzing it helps to demonstrate its complete and utter inadequacy. As an alternative that is radically distinct from the others, it performs the function of quashing the illusion that the ecosystem can be restored with little or no increases in Delta inflow and outflow requirements.

Alternative 4a, as discussed above, is a modular alternative that proposes to exclude for the Bay-Delta Plan components now or previously addressed by biological opinions for the operation of the CVP and SWP. As described above, the Board cannot leave export restrictions and reverse flows in the Delta (OMR) to another legal mechanism. The Board should reject Alternative 4a and dismiss it from further consideration.

The remaining "modular alternatives" (4b, 4c, 5a, 5b, 6a) seek to address real problems. It is positive to identify these problems. However, these alternatives as proposed are inadequate to resolve the problems that they seek to address.

We expand on many of these issues below.

[48] Draft Staff Report, p. 7.1-3.

A. The State Water Board must reject flow objectives that provide inadequate Delta inflows and outflows.

The general methodology of the Draft Staff Report in determining appropriate flow thresholds for the protection and recovery of fish is sound and makes sense. The methodology is generally described in Chapter 3 of the Report:

> The chapter [3] relies on scientific and empirical evidence from published and peer-reviewed articles, exhibits, testimony in the record of the Delta Flow Criteria Report proceeding, and original analyses prepared by State Water Board staff. Where information is available, this Staff Report identifies flows that are associated with growth of specific native indicator aquatic species populations more than half of the time or maintaining populations near abundance goals previously identified in the Delta Flow Criteria Report.
>
> The following specific scientific information is relied upon in this Staff Report (or Report).
>
> - Ecological function-based analyses for desirable species and ecosystem attributes.
> - Statistical relationships between flow and species abundance.
> - Unimpaired flows and historical impaired flows that supported more desirable ecological conditions.[49]

Table 3.14-1 lists the "Magnitude and Timing of Delta Outflows Indicated to Be Protective of Estuarine-Dependent Species."[50] Table 3.14-2 provides the periodicity of the "Functional Flow Needs for Estuarine-Dependent Species."[51] Table 3.14-3 provides a "Summary of Interior Delta Flows Indicated to Be Protective of Salmonids and Estuarine-Dependent Fish Species (cubic feet per second)."[52]

As noted by Baykeeper and the Nature Conservancy in their presentation at the December 1. 2023 State Water Board hearing on the Draft Staff Report, some of the identified threshold flow values for various species have been updated since 2017, the last apparent date cited in Chapter 3. Baykeeper et al. is providing with its comments on the Draft Staff Report a list of the latest best available science on appropriate flow thresholds for various species. CSPA et al. incorporates by reference these flow thresholds. Notably, the threshold value stated in Chapter 3 for survival of outmigrating Chinook salmon (20,000 cfs at Rio Vista) is too low a figure; 30,000 cfs at Freeport is more appropriate as a protective value.

Table 3.14-7 provides the "Potential Percent Increase in Median Abundance Indices Relative to Baseline Condition, with 95 Percent Confidence Intervals and by Water Year Type."[53] For the estuarine species evaluated in this table, the 65% value provides substantially

[49] Draft Staff Report, pp. 3-1 and 3-2.
[50] *Id.*, p. 3-104.
[51] *Id.*, p. 3-106.
[52] *Id.*, p. 3-109.
[53] *Id.*, p. 3-122 and 3-123.

improved performance over the 55% value in all water year types, with generally greater improvement as water years are drier.

Regrettably, the Draft Staff Report does not provide a similar comparative table or other information regarding the increase in survival of juvenile salmonids under different flow scenarios. However, one can use Table 6.3-4 to evaluate the hydrology of the Sacramento River at Freeport under the various flows achieved on average under the different percent-of-unimpaired requirements[54] in comparison to the literature cited by Baykeeper et al. that studied survival under different flow thresholds, and in particular to the 30,000 cfs threshold at Freeport. Here too, the 65% scenario outperforms the 55% scenario, both generally and in terms of frequency above 30,000 cfs at Freeport.

B. The State Water Board must revise the High Flow Alternative and support it with additional analysis evaluating options to meet the project purpose with the least impacts.

The Draft Staff Report appropriately relies in general on its scientific findings in the 2010 Delta Flow Criteria Report and the 2017 Scientific Basis Report,[55] the latter as revised and updated in Draft Staff Report Chapter 3. The Draft Staff Report acknowledges the flow benefits in the Delta of the High Flow Alternative, stating: "the required Delta inflows would be higher under the High Flow Alternative compared to the proposed Plan amendments and would provide ecosystem benefits."[56] Nonetheless, the Draft Staff Report all but dismisses the High Flow Alternative because of perceived impacts to carryover storage, water supply, or both:

> With respect to carryover storage in rim reservoirs (needed for cold water habitat), with higher instream flow requirements, it would be difficult to maintain storage levels while maintaining even greatly reduced levels of water supplies. … the beneficial environmental effects under the High Flow Alternative would be limited due to significant challenges in maintaining suitable water temperatures for cold water aquatic species and carryover storage for environmental and water supply purposes.[57]

Stated in CEQA terms, the Draft Staff Report claims: "Because environmental impacts would be greater under the High Flow Alternative than the proposed Plan amendments, many of the potentially significant impacts are not likely to be mitigated to less-than-significant levels."[58]

However, the Draft Staff Report does not do the detailed analysis of carryover storage and water supply impacts on a watershed by watershed basis to support a finding that significant effects on carryover storage and water supply cannot be mitigated. The approach is rather to broadly state the impacts and then claim that in bracketing those impacts one has disclosed them.

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[54] *Id.*, p. 6-13.
[55] The 2017 Scientific Basis Report is included as Appendix B to the Draft Staff Report; Chapter 3 supplements the 2017 Report with additional analysis developed since 2017.
[56] *Id.*, p. 7.2-8. *See also* discussion on pp. 7.2-7 and 7.2-8 of the 2010 Delta Flow Criteria Report.
[57] *Id.*
[58] *Id.*

This approach overstates the impacts, and then turns around and announces that the High Flow Alternative is infeasible based on the overstated impacts.[59]

In addition, the High Flow Alternative is born to fail because, unlike the Proposed Plan Amendments and the Low Flow Alternative, the High Flow Alternative contains no flexibility to adjust Delta inflow requirements sourced from watersheds that would have difficulty meeting water temperature objectives because of reduced storage. The High Flow Alternative should be modified to include such flexibility, and staff should run sensitivity analyses to evaluate a low range of flows requirements less than 55% of unimpaired flow in clearly defined cases.

Board staff should conduct further analysis of the High Flow Alternative to include:

- Better analysis of carryover storage requirements, including purpose and numeric values.
- Coordination of carryover storage requirements with delivery reductions, especially for project reservoirs (suggested in the CVP "Buffer Pool").
- Consideration of relative priorities of Delta inflow and storage objectives.
- Stretching lower limits of Delta inflow requirements to meet storage objectives; combine with diversion limitations.
- Different strategies to mitigate cold water pool impacts. This could be done sequentially, as in alternative 3 in the forthcoming draft EIS for the issuance of new biological opinions for the CVP and SWP, where at the beginning of each year priority is given to storage up to defined levels, and flow releases of 65% of unimpaired are required once the defined storage values are achieved. This could also be done with other means of balancing flows, storage and deliveries, with a wider bottom end flow range and clear rules for triggers to change flows.

1. The State Water Board must analyze the relative responsibilities of rim dam operators and upstream users to meet Delta Inflow Objectives, based on a series of variables.

For purposes of SacWAM modeling, the Draft Staff Report assumed a compliance point for release of a percent of unimpaired flows upstream of rim reservoirs.[60] The Draft Staff Report also offers a caveat: "However, proposed Plan amendments may include a requirement only at the bottom of each watershed that could require upstream users to contribute more or less than downstream users based on specific water rights priorities."[61]

The Draft Staff Report does not offer a legal justification for requiring users upstream of rim dams to contribute water to Delta inflow at the same level of responsibility as operators of rim dams. As quoted immediately above, the Report suggests that the relative responsibilities

[59] Several spokespersons for water suppliers also stated in oral testimony in hearings on the Draft Staff Report that the stated water supply impacts represented a "worst case" scenario.
[60] Draft Staff Report, pp. A1-7 and A1-8, including Table A1-2.
[61] *Id.*, p. A1-7.

may be modified based on "specific water rights priorities." But priority is not the basis for the Proposed Plan Amendments. If it strictly considered only priority, the entire construct of requiring contributions for each watershed would have no rationale. Public trust and (implicitly) reasonable use are the legal bases for the amendments. Public trust uses of rivers downstream of rim dams, particularly protection of anadromous fish, which are generally not present upstream of rim dams, are the practical as well as legal bases of the Plan Amendments.

In addition, equal requirements of Delta inflow contributions from users upstream of rim dams does not take into account the greater watershed area from which rim dams draw water, as compared to water resources available upstream. It also does not take into account the opportunities on or near the valley floor to use groundwater to help mitigate water supply impacts downstream of rim dams, whereas most upstream users have limited, fractured-rock groundwater sources available to them.

The State Water Board needs to conduct a series of SacWAM sensitivity analyses for the High Flow Alternative that analyzes different compliance points and responsibilities of water users upstream of rim dams. At the limiting case, the State Water Board needs to make a comparative analysis of not requiring water users upstream of rim dams to meet unimpaired flow bypass requirements to compare with the model run that require proportional contributions from water users upstream of rim dams.

Based in part on the results of such sensitivity analyses, the State Water Board needs to develop both legal and practical rationales for determinations of how to allocate intra-basin responsibilities for meeting the Delta Inflow Objective.

2. The State Water Board must more granularly analyze the comparative water supply impacts of the High Flow Alternative.

The Draft Staff Report analyzes water supply impacts only at an extremely high level, review impacts by watershed to agricultural users and to M&I users. This analysis also assumes across-the-board reductions to meet Delta inflow requirements, without prioritization of different uses.

Further, the Draft Staff Report evaluates impacts in the geographic location of the use of water, not of the source of water. This generally precludes evaluation of the trade-offs of mitigation of water supply impacts in source watersheds and those in the areas to which water is exported. Of particular importance is the limitation of opportunities to evaluate mitigation of water supply impacts based on economic considerations, because it precludes, for instance, evaluating tradeoffs between agricultural uses in the source watershed with M&I uses in export areas.

The State Water Board needs to conduct a more granular analysis of the water supply impacts of the High Flow Alternative. It needs to start by establishing an analytical framework that looks at least at the major water users in each watershed. Using that framework, the State

Water Board needs to conduct a series of sensitivity analyses for the High Flow Alternative that analyzes the following factors as variables:

- Consideration of the appropriate relative priorities between agricultural uses and M&I, both generally and within individual watersheds.
- Consideration of combining tributaries for purposes of evaluating compliance, particularly the Mokelumne and the Cosumnes rivers, or the Yuba and Bear rivers and Western Placer County creeks.
- Consideration of the relative resource value of flow at different locations. For instance, flows in Putah Creek are somewhat more beneficial to fish, especially salmon, than flows in Cache Creek; however, flows in Putah Creek are much less beneficial to salmon than flows in the Sacramento River at Freeport.
- Based on all the above, consideration of potential modification of the relative contribution of each watershed to overall Delta Inflow Objectives and Delta Outflow Objectives.
- Treating CVP and SWP deliveries under contracts separately from and differently than other deliveries. This is already implied in the Draft Staff Report's "buffer pool" approach for maintaining storage in CVP reservoirs.

VII. The modular alternatives other than 4a address real problems but require improvement or refinement to be effective.

A. Alternative 4b, the Head of Old River Barrier Alternative, proposes a physical solution that is better addressed with adequate San Joaquin River flows and expanded export limitations.

The Head of Old River Barrier (widely known as HORB) was conceived, around the time that D-1641 was adopted, as a physical barrier that would reduce entrainment into Old River of downstream-migrating juvenile salmonids. Salmonids that enter Old River at its head south of Stockton are susceptible in turn to entrainment at the Delta pumps of the CVP and SWP. Studies in the late 1990s had suggested that survival of juvenile salmon was somewhat improved for those that migrated down the San Joaquin River channel instead of entering the head of old river.[62]

HORB was deployed during the Vernalis Adaptive Management Program. In *The Vernalis Adaptive Management Program (VAMP): Report of the 2010 Review Panel*, a panel of independent scientists found that HORB was somewhat effective in preventing entry of juvenile salmonids into the head of Old River.[63] The review panel in 2010 generally agreed that deployment of HORB during VAMP had been somewhat positive; however, during the 2000-2010 implementation of VAMP, HORB was generally deployed at very low flows.[64] The panel

[62] *See The Vernalis Adaptive Management Program (VAMP): Report of the 2010 Review Panel*, p. 7, citing to Brandes and McClain, 2001. Available at: https://cawaterlibrary.net/document/the-vernalis-adaptive-management-program-vamp-report-of-the-2010-review-panel/.
[63] *Id.*, p. 7.
[64] *Id.*, pp. 6-7.

found that VAMP had a diminished value as an experiment for lack of high flows generally and managed releases of high flows (as opposed to flood releases and other unregulated flow) in particular.[65] Juvenile survival in 1995-1999 at much higher flows was much greater than juvenile survival at low flows under VAMP export limitations with HORB in place.

It is generally believed that deployment of HORB is feasible and effective only to a flow level of about 7000 cfs.

Appropriate flows in the San Joaquin River, combined with greater export limitations, appears to be a more effective approach than the marginal benefits of HORB at low flows. Moreover, the hydrodynamics of the southern Delta change substantially when HORB is in place. There is reduced flushing and movement of water. This reduces water quality generally, increases salinity, increases water temperatures in late spring and summer months, and creates stretches of anoxic water. It also appears to make it more difficult to achieve a stage height high enough to allow diversions of water to south Delta farmers. It creates a vector for harmful algal blooms (HABs).

The marginal benefits of HORB, including the relatively low flow range at which it can function, do not appear to be worth the negative impacts, provided that flows in the lower San Joaquin River, particularly from February through June annually, are sufficient. Implementation of Alternative 4c would also partially offset the absence of HORB.

B. The State Water Board should adopt Alternative 4c, the Extended Export Constraint Alternative.

Alternative 4C, the Extended Export Constraint Alternative, would expand the season of applicability of the proposed Exports Limits Objective discussed above. The season of the Expanded Exports Limit Objective would broaden from the proposed April-May annual time period to the period from February through June each year. The San Joaquin River inflow to exports ratio (I:E ratio) would thus apply throughout the February-June time period.

The Extended Export Constraint Alternative would benefit salmonids and sturgeon natal to all rivers in the Bay-Delta watershed, including but not only the San Joaquin River and its tributaries. It would also benefit estuarine fish species and other parts of the estuarine food web.

The failure of VAMP to achieve marked successes stemmed from two basic shortcomings: it did not require enough flow, and the season of export constraints was too short. Since the end of VAMP, the Bureau of Reclamation has flaunted the D-1641 spring (April 15-May 15) San Joaquin River pulse flow requirement, unilaterally substituting lower pulse flow requirements grounded in the biological opinions for the CVP and SWP.[66]

[65] *Id.*, p. 9.
[66] In addition, the Trump administration substantially weakened the biological opinions in 2019.

The 2010 Delta Flow Criteria Report analyzed the key importance of the February-June time period in the San Joaquin River watershed for salmonids in particular, and the Lower San Joaquin River flow objectives the State Water Board adopted in 2018 focused flow requirements on this annual time period, in substantial part in order to protect outmigrating salmonids. Several papers by Anna Sturrock and others have emphasized the importance of life-history diversity in outmigration patterns since the 2017 Scientific Basis Report.[67]

Though for reasons that in our opinion are largely self-serving, the Turlock and Modesto irrigation districts and the City of San Francisco have been complaining about the loss of their salmon to Delta operations since the 2009 FERC extraordinary proceeding on interim flow measures for the Tuolumne River.[68]

As stated above, the adoption of the Extended Export Constraint Alternative would largely eliminate the need for Alternative 4b, the Head of Old River Barrier Alternative.

The Extended Export Constraint Alternative would complement additional San Joaquin river flow requirements and overall Delta inflow requirements, and make those flows more effective in restoring fisheries and the Bay-Delta ecosystem. The State Board should adopt the Extended Export Constraint Alternative as part of its update of the Bay-Delta Plan.

C. Alternative 5a, the Instream Flow Protection Alternative, appropriately recognizes the need for new rules for dry-year and multiple-dry-year Central Valley and Delta operations, but is too reactive in its approach and needs refinement.

Alternative 5a, the Instream Flow Protection Alternative, would expand the approach of standard water rights permit Term 91 to further require entities other than the CVP and SWP to bypass natural flows when otherwise the CVP and SWP would release water from storage to meet "existing Bay-Delta Plan objectives."[69]

A positive aspect of this approach would be that it could require curtailments of water rights other than those of the CVP and SWP to meet water quality objectives and more generally public trust uses. Currently, the State Water Board curtails non-project rights primarily to prevent injury to senior diverters, not to protect non-developmental beneficial uses or to protect public trust resources.[70] However, as currently conceived, Alternative 5a would indeed be a

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[67] *See, e.g.*, Sturrock et al., Unnatural selection of salmon life histories in a modified riverscape (2019), available at: https://www.researchgate.net/publication/337690243_Unnatural_selection_of_salmon_life_histories_in_a_modified_riverscape/link/5de62031a6fdcc2837008c9c/download?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19.

[68] The proceeding resulted in no change. *See* Final Report of the Presiding Judge on Interim Measures, 129 FERC ¶ 63,015 (November 20, 2009), esp. pp. 20-24, 77-78, available at: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01CD9F43-66E2-5005-8110-C31FAFC91712.

[69] Draft Staff Report, p. 7.24-48.

[70] For further discussion, *see* CSPA Comments on April 19, 2022 Revisions of Water Unavailability Methodology (May 19, 2022). Available at: https://calsport.org/news/wp-content/uploads/CSPA-Comments-on-Water-Unavailability-Methodology-051922.pdf. We incorporate by reference these comments in their entirety.

windfall for the projects at the expense of non-project diverters, because the projects control a large amount of consumptive rights and storage, but would not be required to limit deliveries until water was really running short. Thus, other diverters would in part subsidize high levels of project water deliveries in a first dry year by partially backfilling project storage in a second dry year, under the frame of "conserving storage" in project reservoirs.

The general solution to the inequity of preserving project storage in very dry years and in dry-year sequences at the expense of other diverters ***and*** the public trust would be to require reduced water deliveries in the first dry year.[71] As discussed above, this paradigm is put into practice in the first dry year in the Mokelumne watershed, with emphasis on reduced deliveries to agricultural diverters. Such a proactive, rather than reactive, approach allows management of water resources while there is still water left to manage, rather than extreme triage and reliance on declarations of emergency and serial weakening of water quality and flow standards that has characterized drought response in the greater Bay-Delta watershed over the past two decades.

In the February 8, 2023 comments of CSPA et al. on the Draft Scientific Basis Supplement for Voluntary Agreements, CSPA discussed at length the particularly damaging role that droughts have played in depressing populations of native fishes over the past two decades.[72] Chapter 7.6.2 of the Draft Staff Report also recognizes the compounding influence of droughts on the decline of native fishes.[73] State Water Board staff is right in seeking changes in the way the State Water Board protects water quality and public trust resources generally during dry-year sequences and droughts. The update of the Bay-Delta Plan cannot provide reasonable protection of fish and wildlife if it perpetuates the devastating impact the droughts have had on native fisheries over the past two decades. In the words of the CSPA's late leader Bill Jennings, extinction is not an option. There is also no plausible sense in which extinction is protection, reasonable or otherwise.

Alternative 5a correctly identifies a major problem that the update of the Bay-Delta Plan must address. Alternative 5a would have the benefit of requiring curtailments of non-project diversions specifically to protect public trust resources, and the State Water Board should

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[71] "Conserving storage" in CVP and SWP reservoirs has been a frequent justification for temporary urgency change petitions for Delta operations and unprotective Sacramento River temperature management plans. As described in multiple objections by CSPA et al. in 2014-2016 and 2021-2022, the net effect of "conserving storage" was allowance of excessive water deliveries, primarily to CVP and SWP settlement contractors and to CVP exchange contractors. *See* the objections and petitions for reconsideration of CSPA et al. on the State Water Board's drought pages and Sacramento River temperature management pages, as catalogued at https://calsport.org/news/, https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/index.html, and https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/sacramento_river/.

[72] *See* Comments of California Sportfishing Protection Alliance, California Water Impact Network, and AquAlliance on the Draft Scientific Basis Report Supplement in Support of Proposed Voluntary Agreements for the Sacramento River, Delta, and Tributaries Update to the Bay-Delta Water Quality Control Plan (CSPA et al.'s Comments on Draft Scientific Basis Report Supplement), esp. pp. 8-11. https://calsport.org/news/wp-content/uploads/CSPA-et-al-comments-Draft-Supplement-Sci-Basis-020823.pdf. We incorporate by reference the entirety of those comments.

[73] *See* Draft Staff Report, p. 7.6.2-3 ("Native species in the Bay-Delta ecosystem are experiencing an ecological crisis. In the early 2000s, scientists noted a steep and lasting decline in population abundance of several native estuarine fish species that continued and worsened during the 2012–2016 and 2020–2022 drought periods.").

preserve this aspect of Alternative 5a in a broader approach to dry-year sequences and droughts. However, Alternative 5a would not in itself solve the problem.

D. Alternative 5b, the Shared Water Shortage Provision Alternative, appropriately recognizes the need for new rules for dry-year and multiple-dry-year Central Valley and Delta operations, but is too reactive in its approach and needs refinement.

Alternative 5b, the Shared Water Shortage Provision Alternative, would require across-the-board reductions of 20% by all water rights holders "under drought conditions." Alternative 5B has many of the positive aspects as well as shortcomings of Alternative 5A.

The recognition of the need for a default response to droughts is positive. It is also positive that Alternative 5B proposes to require reductions in agricultural diversions. During the 2013-2016 and 2021-2022 droughts, municipal and industrial diverters faced statewide, generally mandatory water rationing, while agricultural water users were curtailed only on the basis of priority. CVP and SWP agricultural contractors were cut back according to allocation decisions by DWR and Reclamation, largely independently of the water rights system.

There is a good policy argument to make for drought rationing of M&I water, to varying degrees and with varying location-specific rationales that the State Water Board widely explored in the last two major droughts. However, the numbers do not allow this strategy alone to create a formula for success. Agriculture uses 70-80% of the state's ***developed*** water resources. Cutting back urban users alone does not protect fish and wildlife and other public trust resources during dry-year sequences and droughts.

Across-the-board cuts in all (non-instream) uses, including agriculture, during dry-year sequences is worth a serious discussion. Note that for urban water users, the State Water Board tiered water suppliers based on multiple factors, including existing general levels of use, previous conservation measures, and so forth. It was rocky. It revealed technical gaps. But it got done reasonably quickly and without an adjudication. The State Water Board developed an active partial curtailment priority list that was real-time and transparent. A similar tiered system that adjusted a default expectation based on specific use characteristics should be achievable for agricultural uses.

The state's water resources are overallocated and overappropriated,[74] mostly, but not entirely, by agricultural use and users. As described above, the State Water Board will not solve the problem of unsustainable conditions for fish and wildlife in droughts simply by reducing use of limited resources during crises. Agricultural water use must also be reduced when there is still water to save in anticipation of a year of little rain. A drought plan must include reduced agricultural water deliveries in the first dry year, *i.e.*, a dry year that follows a wet or above normal year. The first-year reduction must be substantial, as suggested in the discussions regarding the Mokelumne watershed, above.

[74] For general description of the overallocation of California's water resources, see Draft Staff Report, p. 2-117.

E. Alternative 6a, the Protection of Voluntary Agreement Flows Alternative, should be reframed as an enforceable policy of prioritizing existing uses over new diversions.

"Modular" Alternative 6a is titled the "Protection of Voluntary Agreement Flows Alternative." As proposed, it would place special flow requirements on new diversions in the Bay-Delta watershed if the Voluntary Agreements were adopted. For such new diversions, it would require a 55% of unimpaired January 1 – June 14 flow bypass requirement, as measured by Delta outflow, or would require other interpretation of Delta outflow needs as modified from the 2017 Scientific Basis Report. It would disallow use of the new diversion from June 15 – August 31 annually. It would allow diversions from September 1 – December 31 only "during high-flow events defined as the wettest 5 percent of historical hydrologic conditions."[75]

The purpose of modular Alternative 6a would be to protect existing levels of Delta inflow and outflow, which the proposed Voluntary Agreements propose to use as a floor onto which they will add more flow. As discussed further below, much of the Voluntary Agreement construct is already built on a foundation where the "existing flow," onto which the proposed VAs would layer purportedly "additional" flow, has already been lowered, would be lowered by future proposed actions, or would be lowered by gaming VA flow requirements to recover "added" flow by reoperating reservoirs or water deliveries.

The problem addressed by Alternative 6a would be a real problem if the VAs were adopted and implemented, making the VAs even more of a shell game than they already are. Board staff's general approach regarding Alternative 6a seems to be that it would be redundant if a regulatory option involving a percent of unimpaired flow were adopted as the Plan Amendments. Yet a reinvested Alternative 6a might also have an important role as part of a regulatory option, further applying the principle that in an overallocated hydrological system, new water rights or diversions should be treated more restrictively than existing uses.

For example, if the adopted program of implementation for a regulatory Plan update required no contribution to Delta inflow from diverters upstream of rim dams, or less contribution to Delta inflow from diverters upstream of rim dams than from rim dam operators or those downstream, or otherwise uneven or site-specific contribution, Alternative 6b might prevent less highly regulated diverters from taking advantage of their reduced obligations by building new water developments.

It would involve some serious legal thinking in developing such rules to respect and meet the intent of county of origin protections (Water Code § 10500 et seq.), and to avoid conflict with the parameters set forth in *El Dorado v. State Water Board* 142 Cal.App.4th 937. One possible approach might be disallowance of transfers of water founded in new water rights, including county of origin rights intended to protect the development of upstream counties, thus not allowing upstream counties to join the older diverters in water speculation practices.

[75] Draft Staff Report, p. 7.2-16.

In sum, the State Water Board should consider expanding and adapting the principle imbedded in Alternative 6a, and evaluate various measures to include in the update of the Bay-Delta Plan to limit the effects of potential new diversions on public trust resources.

F. The State Water Board can select the Environmentally Superior Alternative only after refining alternatives in consideration of the analyses recommended in these comments.

Chapter 7.24 contains a brief discussion of the "Environmentally Superior Alternative."[76] The discussion is not illuminating. The most important take-home from the discussion is that more analysis is needed before the State Water Board can define an Environmental Superior Alternative.

The analysis acknowledges the benefits of the high flows in the High Flow Alternative. However, the analysis equivocates with vague discussion of potential impacts to cold water resources and water supply (the latter an indirect, not explicit, environmental impact), stating: "[o]verall beneficial environmental effects under the High Flow Alternative would be limited due to significant challenges in maintaining suitable water temperatures for cold water aquatic species and carryover storage for environmental and water supply purposes with the higher flows."[77] As discussed above, the State Water Board needs to conduct additional analysis regarding how to manage cold water and reservoir resources while providing Delta inflow sufficient to meet the project purpose of reasonable protection of fish and wildlife beneficial uses.

Chapter 7.24 contains clear error in suggesting that the VAs may be the Environmentally Superior Alternative.

> Under the proposed VAs impacts from changes in hydrology and supply would be smaller in magnitude and geographic scope than the changes that would occur under the proposed Plan amendments. In many instances, the VAs would have no impact or less-than-significant impacts where the proposed Plan amendments would have potentially significant impacts.
>
> Focusing on potential environmental impacts related to hydrology and water supply, the proposed VAs therefore could be viewed as the environmentally superior alternative, although the improvements in flows would be more limited than under the proposed Plan amendments.[78]

As discussed below, the VAs do not meet the project purpose. They have fewer impacts because they do very little. This is abuse of the CEQA impacts analysis and baseline at its worst, suggesting that a flow regime that will hasten fisheries decline and likely lead to extinction of several species is somehow "environmentally superior." If the sole measure of impacts is change

[76] *See id.*, pp. 7.24-51 to 7.24-53.
[77] *Id.*, p. 7.24-52.
[78] *Id.*, p. 7.24-52 and 53.

from a degraded baseline, then one may as well never do a project because the No Project Alternative never has any impacts at all.

VIII. The Voluntary Agreements have no business in the Draft Staff Report.

Alternative 6, the "Proposed Voluntary Agreements" or VAs, would supplant the State Water Board's entire regulatory framework, throw 14 years of the State Water Board's science in the trashcan, and act as a program of implementation to continue D-1641 objectives as the basic regulatory construct for the next 8 years. The Proposed Voluntary Agreements Alternative purports to "add" increments of flow, framed as "assets," on top of those existing requirements, without having defined a functional regulatory or accounting mechanism to calculate the new requirements. It would pay for water to protect public trust resources. It would "update" the salmon-doubling goal, initiated by the Central Valley Project Improvement Act and incorporated into California law, with a new, weak narrative objective for the purported improvement of salmon populations. As a central feature, it would substitute physical habitat improvements for most of the State Water Board's proposed flow objectives.

A. The VAs' proposed revision of the salmon doubling objective is death by definition.

The VA's propose to replace the existing "Narrative Salmon Protection Objective" (salmon doubling goal) with a new Narrative Viability Objective that reads:

> *Maintain water quality conditions, including flow conditions in and from tributaries and into the Delta, together with other measures in the watershed, sufficient to support and maintain the natural production of viable native fish populations. Conditions and measures that reasonably contribute toward maintaining viable native fish populations include, but may not be limited to, (1) flows that support native fish species, including the relative magnitude, duration, timing, temperature, and spatial extent of flows, and (2) conditions within water bodies that enhance spawning, rearing, growth, and migration in order to contribute to improved viability. Indicators of viability include population abundance, spatial extent, distribution, structure, genetic and life history diversity, and productivity. Flows provided to meet this objective shall be managed in a manner to avoid causing significant adverse impacts to fish and wildlife beneficial uses at other times of the year.*[79]

VA parties propose to contribute, during the pendency of the VAs, their share of achieving the new objective by 2050. The measurement of such achievement is wholly unclear, but it seems to presume that providing the flows committed and implementing the physical habitat improvements promised ("other measures in the watershed") will do the trick by definition.

[79] *Id.*, p. 9-7.

The revised narrative objective does have a time limit, but it is way too long. Overall, it is the dilution of the existing objective and a vague promise to achieve some part of it. The State Water Board should reject the Voluntary Agreements because their narrative objective violates Porter-Cologne and the anti-degradation prohibitions under the Clean Water Act.

B. Even if one accepts the actual production of the purported VA flow increases, the VA flows would add only tiny increments to Delta inflow.

Tables 9.5-29 and 9.5-30 evaluate Delta inflow under proposed VA flows, showing the average January through June flows by water year type. The tables use both the 2019 BiOps (Table 9.5-29) and the 2008-2009 BiOps (Table 9.5-30) as baseline points of comparison with the flows that the VAs purport to add. The tables also show committed VA flows both with and without purported water that the VAs propose to add to Delta inflow through water sales.[80]

These tables show that average Delta inflow by water year type will at most increase by 8.3% (Dry years, 2008-2009 BiOps, water sale flows included). This percent increase is largely due to the fact that baseline Dry year Delta inflow is so low, under either set of BiOps, that even a tiny increase pushes up the percent of change. For Below Normal years, the largest percent average Delta inflow increase is 5%; for Above Normal years, the largest percent average Delta inflow increase is 3.8%.

Increases in January-June Delta inflow of 8.3%, 5%, and 3.8% are not going to qualitatively change conditions in the Bay-Delta estuary. Note that in Critically Dry years, there is virtually no improvement (compared to 2019 BiOps, about 1%).

Note also that in Tables 9.5-31 and 9.5-32 (changes in Delta inflow from July through December), up to about a third of the increase in Delta inflow in January-June is offset by decreases in Delta inflow in July-December.[81]

Changes in January-June Delta outflow, shown in Tables 9.5-40 and 9.5.41 are a smidge higher, up to about 10% in some combinations of variables. For Delta outflow as well, decreases in July through December Delta outflow (Tables 9.5-42 and 9.5-43) offset January through June increases, in one configuration by more than 50%.

In sum, reviewing the tables from Chapter 9 cited above, as much as 200 TAF of purported additional Delta outflow simply backfills outflow lost to the 2019 BiOps in comparison with the 2008 and 2009 BiOps. As much as 155 TAF of Delta outflow is lost in July through December under the VAs, offsetting any "added" inflow in January through June.

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[80] *Id.*, pp. 9-43 and 9-44.

[81] Similar patterns of flow reductions in July-December are also shown in Chapter 9 for the Sacramento and American rivers. To the extent that July-December flow reduction offset January-June flow increases exists, the VA flows would be more accurately described as reservoir reoperation than "addition" of flows.

The flows proposed in the Voluntary Agreements are utterly inadequate to achieve the project purposes. The State Water Board should reject the Voluntary Agreements because they violate Porter-Cologne, the public trust, and the federal Clean Water Act.

C. There is no substantial evidence that the purported additions of flow under the VAs will actually result in additions of flow.

The Draft Staff Report acknowledges: "[S]ome components [of the VAs] are currently under development."[82] It also states: "[A]ccounting methods for the proposed VAs are under development that will ensure that the expected increases in flows under the VAs are provided."[83] VA proponents promised a number of these components by the end of 2023. They have not been produced. This makes it particularly vexing in that these key missing elements, when produced, will likely require still another set of comments.

More specifically, VA proponents have not proposed mechanisms by which VA inflows will be calculated as "additive" to baseline flows and by which VA "additive" inflows will be protected in order to become "additive" outflows. CSPA et al. commented extensively on these issues in February 8, 2024 comments on the Draft Scientific Basis Report Supplement for the Voluntary Agreements.

CSPA et al.'s Comments on Draft Scientific Basis Report Supplement described the absence of such mechanisms in the VA proposal and the consequent total lack of reliability of the purported "additive" VA.[84] We noted that the proposed "additive" flows described in the VA Term Sheet do not describe the rules and mechanisms for their implementation and are too vaguely defined to quantify or otherwise understand in terms of timing and amount. There are no clear rules and mechanisms for additive flows in rivers and for additive Delta inflow. There are no clear rules and mechanisms for additive Delta outflow: there is no accounting for unregulated flow already passing through the Delta, for how flow will be additive to salinity requirements, or for how flow will be additive due to "exports foregone."

The flows proposed in the VAs are not reasonably certain to occur. The State Water Board should reject the Voluntary Agreements because they violate CEQA's requirements for a clear project description and for mitigation measures that are reasonably certain to occur, and because the proposed flows are not supported by substantial evidence.

D. The SacWAM modeling of the Voluntary Agreements is not supported by substantial evidence.

In broad terms, the SacWAM modeling of the Voluntary Agreements in the staff report appears to have been performed as follows:

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[82] Draft Staff Report, p. 9-1.
[83] *Id.*, p. 9-14.
[84] CSPA et al.'s Comments on Draft Scientific Basis Report Supplement, *op. cit.*, pp. 3-8. As noted above, incorporated by reference. We strongly recommend that the State Water Board staff and members review these prior comments.

- Modelers ran baseline scenarios. There are several baselines evaluated, and Chapter 9 explains them.
- Using perfect foresight, modelers established what flows at given locations *would have been* in the absence of the VAs.
- Modelers chunked the "additive" flows on top of the already modeled baseline flows that *would have been present* at various locations.
- Modelers did not account for how operators of the dynamically-operated Bay-Delta and Sacramento River systems would have changed operations in response to the changes in flow and salinity that the additions of VA flow would have caused.
- Modelers did not account for how operators would have attempted to recover some of the lost diversions or water in storage "lost" to increased Delta outflow, or what the constraints (both actual and mandated) would have been to limit such recovery of diversions.

The modelers of the VAs thus added flow on top of a model output that was static, when in practice the operations underlying that output would not have been static.

The SacWAM model output for the VA Alternative is thus a crude approximation of what is likely at, or close to, the outside bounds of the flow increases under the VAs. The modeling of the VAs performed to date is thus a rough approximation of what flow changes might occur if the VA flows were implemented. It cannot be used to evaluate purported benefits of proposed VA flows. Its limited value is that it shows that the general puny order of magnitude of proposed VA flows.

If the State Water Board persists in entertaining the Voluntary Agreements as a project alternative, it should insist on SacWAM modeling of VA flows based on an analysis of the rules and mechanisms for VA flow contributions. The State Water Board should not allow modeling that is not supported by substantial evidence that flows represented would be additive flows in fact.

A better choice would be for the State Water Board to reject the Voluntary Agreements for the reasons described in sections above and below.

E. The proponents of the VAs are supporting major water developments whose diversion would further reduce or even zero out the proposed flow additions under the VAs.

Proponents of the VAs include DWR and its contractors as well as Reclamation and its contractors. DWR and its contractors are proponents and in some cases financial supporters of the Delta Conveyance Project, which if built would increase Delta diversions by an admitted 10%. DWR, Reclamation, and many of their contractors are also proponents and investors in the proposed Sites Reservoir, which proponents would like to have on line about the time the eight-year term of the VAs would end. Diversions by these two projects would in some years overwhelm the purported additive flow offered by the VAs.

Thus, not only is the actual value of the VAs diminished by water already lost to the Trump BiOps and to potential reoperation of existing reservoirs, it is also threatened by new facilities proposed by many of the same entities offering new flows under the VAs.

DWR has already acknowledged regarding the proposed Delta Conveyance Project: "Regarding the comment regarding an alternative with increased unimpaired flow, such an alternative was determined to not be consistent with the project purpose nor would it meet most of the stated basic project objectives in Chapter 2, Purpose and Project Objectives."[85]

Implementation of a percent-of-unimpaired-flow requirement would also make the cost of water for the proposed Sites Reservoir Project too expensive for the project to pencil out.

In a very real sense, a vote for the VAs is a vote for the Delta tunnel and Sites Reservoir.[86]

A vote for the VAs is also a vote for future large water developments, digging the hole of the state's overallocation of water ever deeper. The State Water Board should reject the Voluntary Agreements in order to support a policy of sustainable allocation of California's water resources, consistent with the reasonable use doctrine.

F. The absence of foundational elements of the VA project description is particularly inadequate in that the VAs are proposed as a program of implementation.

The VAs are supposed to be a program of implementation to implement existing objectives and the revised narrative viability objective. "The flow and non-flow habitat actions are proposed as implementation measures for an existing and proposed new water quality objective in the Bay-Delta Plan."[87] But there is no definition of how the VAs will be implemented.

Porter-Cologne (Water Code § 13242) requires:

> The program of implementation for achieving water quality objectives shall include, but not be limited to:
> (a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private.
> (b) A time schedule for the actions to be taken.
> (c) A description of surveillance to be undertaken to determine compliance with objectives.

[85] Final Environmental Impact Report for the Delta Conveyance Project, Response to Comments, Table 4-4, p. 354.
[86] Alternative 6a is a potential but highly uncertain backstop, since Sites is proposed under assignment of a state-filed water right application and the Delta Conveyance Project would if allowed be permitted under existing water rights.
[87] Draft Staff Report, p. 9-1.

The VA Term Sheet and the VAs as described in the Draft Staff Report do not fulfill these requirements because of the missing key elements of the project description. The State Water Board should reject the Voluntary Agreements because they violate Porter-Cologne, Water Code § 13242.

G. The Voluntary Agreements lack key elements needed for the protection of fish and wildlife and other public trust resources.

The Draft Staff Report makes a strong effort to be comprehensive in the scope of issues and objectives it considers in order to protect fish and wildlife and other public trust resources. The Voluntary Agreements, by contrast, are a thin layer of frosting on the stale cake of business as usual.

Non-exclusively, the VAs fail to address:

- Carryover storage: the VAs do not discuss.
- Water temperature downstream of dams: VA proponents only discuss this in order to argue against increased Delta inflow.
- Droughts and dry-year sequences: the VAs offer virtually no additional flow in Critically Dry water years. VAs apparently assume the continuing use of temporary urgency change petitions (TUCPs) and only voluntary diversion reductions by CVP and SWP settlement and exchange contractors during droughts.
- Reverse flows in the Delta (OMR): the VAs do not address reverse flows.
- Export restrictions: the VAs offer no general export restrictions, only a small amount of "exports foregone."

The State Water Board should reject the Voluntary Agreements because their missing key elements fail to reasonably protect beneficial uses, fail to protect public trust resources, and fail to protect water temperatures, thus violating Porter-Cologne, the public trust doctrine, and the federal Clean Water Act.

H. The messaging of the Voluntary Agreements is misleading.

In both the hearings on the Draft Staff Report and in the broader press and blog world, some of the messaging of the VAs has been misleading. CSPA et al. notes some of the more excessive examples here.

The entire branding and marketing construct ("Healthy habitats and landscapes") is vapid and annoying. "Healthy" in this context has no content. It is just something that plays well in focus groups.

"Early implementation" of physical habitat improvements is a happy way to credit the VA product for something that has already happened or was already going happen without the VA product. It double counts projects already undertaken or committed to, sometimes as

required mitigation, sometimes funded by others. More broadly, it is a preemptive effort to buy the proponents' way out of flow increases.

There is a general false representation that the VAs are ready to implement. As discussed above, the most critical elements of how the proponents would make the flows work are absent. The physical habitat improvements that are ready now were ready anyway, without the VAs. Many of the remaining proposed physical habitat improvements will take years to permit and construct. Many of those will also have to wait for wet years to implement, because without high flows (only scantly offered by the VAs), they are mostly terrestrial habitat.

One of the proponents of the VAs at the December 1 hearing argued that the 2008-2009 BiOps were examples of "flow only" requirements that did not work. First, the characterization is not accurate; for example, the salmon Biop also included requirements relating to facilities management (for entrainment, temperature management, etc.), fish passage, decision making, monitoring, and studies. But more importantly, the flow requirements were not adequate to restore fish populations. This is a familiar pattern and refrain: one devotes too little water to a problem, then announces the futility of flow when too little water is not sufficient. This also does not take into account the crushing impacts of droughts, as discussed above.

And there are buzzwords, an onslaught of (mostly) adjectives that are simply branding, beginning with "healthy" but also including: holistic, integrated, transformative, new [science], rethinking old assumptions, not binary, local, collaborative, not simplistic. A good illustration of the lack of content to the branding is the repetition of the term "holistic." Given all the missing key elements in the VAs as described in the immediately preceding section, the VAs are anything but holistic. "Holistic" is simply a code word that means the VAs seek to substitute physical habitat for flow.

The State Water Board should ignore the messaging of the proponents of Voluntary Agreements and reject the Voluntary Agreements for the legal and policy reasons stated above.

IX. The State Water Board must correct or improve additional shortcomings with the SacWAM modeling and the presentation of model output.

In addition to issues with the SacWAM modeling and with the presentation of model output stated above and stated in CSPA's presentation at the December 1 hearing on the Draft Staff Report, there are some additional issues the State Water Board must address.

There is no modeling of conditions under climate change hydrology. This will not pass muster in evaluating water supply impacts or benefits to public trust resources. CSPA et al. recognizes that evaluating proposed amendments under climate change hydrology is technically a large job. It is essential.

The reporting of modeled water supply impacts needs to be much more granular as the Board and staff further define and model the Proposed Project. At minimum, there need to be breakouts of water supply impacts upstream and downstream of rim dams. Preferably, there

should be individual assessments for water agencies, irrigation districts, and other large water users, particularly those that use a large portion of the consumptive water in major watersheds. There should also be output that evaluates water supply impacts of export users (*e.g.*, EBMUD, North Bay Aqueduct, South Bay Aqueduct) based on source of water, not just on location of use. There needs to be sufficient granularity to evaluate tradeoffs in allocating water from each watershed.

The baseline modeling of the Trinity River must be reworked. Appendix A1 reports: "Trinity imports were limited to baseline conditions in each of the scenarios by constraining flows through the Clear Creek Tunnel. This assumption is a simplified representation that the proposed Plan amendments will not have any redirected effects on Trinity River fisheries."[88] The approach as stated here is legally and technically unjustifiable. One cannot simply model away impacts on the assumption that the intent is to avoid impacts. One must analyze the reasonably foreseeable changes to Trinity operations and then analyze the impacts. Based on the reasonably foreseeable impacts, one must write rules to protect the fish and wildlife uses and generally the public trust uses.

As shown in Appendix A1, there are no impacts to Trinity River flow and storage. Figure A1-41, "Trinity River Flow," assumes that there is no difference from baseline, so it shows no difference.[89] Figure A1-163, "Trinity Reservoir Storage," assumes that there is no difference from baseline, so it shows no difference.[90] Tables A1-337 through 340, showing the values for end of April and end of September carryover storage, show no difference from baseline.[91]

By contrast, the VA modeling admits to slight reductions in Trinity Reservoir carryover (*see e.g.*, Figure G3a-72),[92] presumably because total VA flow increases downstream of Keswick Reservoir on the Sacramento River would not be offset by reductions in deliveries, and some of the water to meet the VAs would come from, or be backfilled by, exports from the Trinity. This is more honest.

The Trinity River is already impaired by failure to meet water temperature objectives in most years. Moreover, there are several ongoing regulatory challenges in several venues to the adequacy of existing Trinity River water temperature objectives. Trinity Reservoir storage has also been slow to recover in many recent years, notably 2023. Impacts to the Trinity River make a difference.

The impacts of the update of the Bay-Delta Plan on the Trinity River and its fishery resources, and on Trinity Reservoir, must be disclosed and mitigated.

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[88] *Id.*, p. A1-14.
[89] *Id.*, p. A1-134.
[90] *Id.*, p. A1-314.
[91] *Id.*, p. A1-315.
[92] Id., p. G3a-180.

X. Conclusion

CSPA et al. thanks staff for the work done to date and for the opportunity to comment. A final staff report should correct the errors and omissions identified above, perform the necessary analyses described above, and develop proposed plan amendments that protect beneficial uses and the public trust, consistent with CEQA, Porter-Cologne, the public trust and reasonable use doctrines, and the federal Clean Water Act.

Respectfully submitted,

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