

Common Response 7.24

Alternatives Analysis

Introduction

This introduction provides important context to this common response. A similar introduction is provided in each common response to ensure that the reader has the appropriate context when reviewing common responses. For ease of reference, a table of contents is included after this introduction to guide readers to specific subject areas.

Protecting the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) watershed and its many beneficial uses of water is one of the State Water Resources Control Board's (State Water Board) primary responsibilities and top priorities. In response to declines of several native aquatic species since the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Watershed (Bay-Delta Plan or Plan) was last comprehensively updated, the State Water Board commenced a process to update the Bay-Delta Plan for the Sacramento River and its tributaries, Delta eastside tributaries (including the Calaveras, Cosumnes, and Mokelumne Rivers), and Delta for the reasonable protection of fish and wildlife beneficial uses, referred to as the Sacramento/Delta Update to the Bay-Delta Plan. The Bay-Delta Plan identifies beneficial uses of water to be protected in the Bay-Delta watershed, water quality objectives and program of implementation to achieve the reasonable protection of those beneficial uses, monitoring, evaluation, and special study provisions. The State Water Board's proposed action to update the Bay-Delta Plan is supported by a Staff Report/Substitute Environmental Document (Staff Report), which provides an evaluation of the environmental impacts and economic effects in support of consideration of different alternatives to update the Bay-Delta Plan to achieve reasonable protection of fish and wildlife beneficial uses in the Sacramento/Delta. The Staff Report is functionally equivalent to an Environmental Impact Report under the California Environmental Quality Act (CEQA) but also provides the additional analyses that support the State Water Board's consideration of the action under the Clean Water Act and Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Development of the final Staff Report and final draft Bay-Delta Plan were informed by several opportunities for public comment over multiple years. This common response may address issues that were raised during any of those public comment periods. In September 2023, the State Water Board released the 2023 draft Staff Report evaluating different alternatives for the Sacramento/Delta Update to the Bay-Delta Plan for public review and comment. Following release of the 2023 draft Staff Report, the State Water Board released draft amendments to the Bay-Delta Plan in October 2024 (2024 draft Plan) for public review and comment that incorporated alternatives identified in the 2023 draft Staff Report with revisions based on public comments. The State Water Board released revised draft Plan updates in July 2025 (July 2025 revised draft Plan) but delayed public comment on that version of the Plan pending further updates, though some parties did submit public comments on the July 2025 draft that are part of the State Water Board's response to comments. In December 2025, the State Water Board released Chapter 13, *Revised Proposed Plan Amendments*, as a limited recirculation of the 2023 draft Staff Report (2025 partially recirculated draft Staff Report) together with the December 2025 revised draft Plan for public review and comment. These documents reflect the updated proposed project, referred to as the revised proposed Plan amendments, which brings together in the Bay-Delta Plan program of

implementation a voluntary agreement (VA) pathway that incorporates commitments identified in the Healthy Rivers and Landscapes (HRL) proposal and would apply to specified HRL water rights, and a regulatory pathway based on the proposed Plan amendments that would apply to other water rights and to any HRL water rights no longer covered under the VA pathway. In August 2026, the State Water Board released a final draft Bay-Delta Plan that included refinements to the revised proposed Plan amendments based on public comments received on the December 2025 revised draft Plan. At the same time, the State Water Board released this final Staff Report, including responses to comments previously received on the draft Staff Report. The final Staff Report informs the State Water Board's consideration of adoption of the Sacramento/Delta updates to the Bay-Delta Plan.

With respect to the CEQA impact conclusions, it is important that they be understood in the context of the overall nature of the proposed project, which is intended to be an environmental restoration action. CEQA only considers changes that could negatively impact the existing environment and does not recognize or offset negative changes with improvements that could result from an environmentally beneficial project. Here, the impacts that could potentially result from implementation of the restoration action occur in a system that has been highly altered, and the project would be expected to improve conditions for native fish and wildlife in the Sacramento/Delta watershed over time. However, the project will also result in changes in hydrology and changes in water supply that could result in some potentially significant adverse environmental impacts at certain times and locations that must be analyzed under CEQA. These potentially significant environmental impacts should be viewed in light of the overall purpose and goals of the Sacramento/Delta update to the Bay-Delta Plan.

This common response addresses comments raised regarding the alternatives evaluated in the 2023 draft Staff Report and 2025 recirculated draft Staff Report Chapter 13, *Revised Proposed Plan Amendments*. The State Water Board reviewed and considered all comments related to the alternatives analysis and developed this common response to address recurring comments and common themes. In particular, this common response addresses, but is not limited to, the following topics.

- Adequacy of alternatives analysis
- Description and comparison of alternatives
- Ability of alternatives to meet purposes and goals of the project
- Range of reasonable alternatives
- Comments on stand-alone and modular alternatives
- Commenter proposals
- Environmentally superior alternative

This common response references related common responses, as appropriate, where recurring comments and common content themes overlap with other subject matter areas. For responses to comments regarding the water quality control planning process, please see Common Response 1.2, *Water Quality Control Planning Process*. For additional information on the revised proposed Plan amendments, please see Common Response 1.3, *Revised Proposed Plan Amendments*. For information on the California Environmental Quality Act, please see Common Response 7.1, *General CEQA and Approach to the Analysis*. For responses to comments concerning the Staff Report's economic analysis, including comments related to municipal water supply economic effects, please

see Common Response 8.1, *Economic Analysis and Other Considerations*. Please also see Common Response 11.1, *Tribal Engagement and Tribal Beneficial Uses*, for more information on tribal reserved water rights, tribal beneficial uses, tribal outreach and engagement and tribal concerns with the proposed VAs.

Table of Contents

Common Response 7.24 Alternatives Analysis	1
Introduction.....	1
Overview and Adequacy of Alternatives Analysis	5
Project Purposes and Goals, Ability of Revised Proposed Plan Amendments to Achieve Them.....	8
Description and Comparison of Alternatives	11
Analysis and Modeling of Alternatives	13
Range of Reasonable Alternatives.....	14
Comments on Specific Alternatives.....	16
No Project Alternative	16
Flow Alternatives	16
Proposed VA Alternatives	18
Interior Flows/Fall Delta Outflow Alternative.....	20
Drought Alternatives.....	23
Commenter Proposals.....	25
Environmentally Superior Alternative	25
References Cited.....	26

Overview and Adequacy of Alternatives Analysis

CEQA requires an environmental document to describe a range of reasonable alternatives to a project that “would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” (Cal. Code Regs., tit. 14, § 15126.6, subd. (a); Cal. Code Regs., tit. 23, § 3777, subd. (b)(3).) It need not consider every conceivable alternative to a project, but instead, it “must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.” (Cal. Code Regs., tit. 14, § 15126.6, subd. (a).) The Staff Report includes an adequate description and evaluation of a reasonable range of alternatives that meet the requirements of CEQA and help inform the planning process for Sacramento/Delta updates to the Bay-Delta Plan.

The 2023 draft Staff Report evaluated several alternatives for the Bay-Delta Plan Update, including stand-alone alternatives of various flow scenarios and the proposed VAs and modular alternatives that could be layered onto the stand-alone alternatives.

The stand-alone alternatives included:

- **The Proposed Plan Amendments.** The proposed Plan amendments included inflows from the Sacramento River, its tributaries, and Delta eastside tributaries (the Cosumnes, Mokelumne, and Calaveras Rivers) of 55 percent unimpaired flow, with an adaptive range from 45 percent to 65 percent unimpaired flow, cold water habitat provisions for reservoirs to be operated in a manner that provides needed cold water habitat for salmonids and other measures to protect cold water, inflow-based Delta outflows, Interior Delta flow measures, and monitoring, reporting, and other general provisions.
- **A No Project Alternative (Alternative 1).** The No Project Alternative is the continuation of the Bay-Delta Plan as implemented by Revised State Water Board Decision 1641 (2000) (D-1641), with the existing hydrology and water supply conditions described in 2023 draft Staff Report Chapter 2, *Hydrology and Water Supply*. This alternative recognizes that current conditions include significant flows that are not protected by the regulatory regime and thus may be reduced over time.
- **Low Flow (Alternative 2) and High Flow (Alternative 3) Alternatives.** Collectively referred to as “other flow alternatives,” these would require lower or higher amounts of inflow to the Delta but otherwise would be consistent with the proposed Plan amendments.
- **The Proposed Voluntary Agreements Alternative (Alternative 6).** The proposed VAs included a combination of flow and habitat commitments (described in Chapter 9, *Proposed Voluntary Agreements*, Table 9.3-1) over 8 years (with the possibility of extension), including varying amounts of increased flows on certain tributaries, depending on water year type, and non-flow habitat restoration actions targeted at improving spawning and rearing capacity for juvenile salmonids and other native fishes.

The modular alternatives included:

- **Modular Alternatives for Interior Delta Flows and Fall Delta Outflow (Alternatives 4a, 4b, and 4c).** Alternative 4a (Exclusion of Interior Delta Flow and Fall Delta Outflow Related Amendments) excludes interior Delta flow and fall Delta outflow provisions included in prior National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) Biological

Opinions (BiOps) for operation of the State Water Project (SWP) and Central Valley Project (CVP) and California Department of Fish and Wildlife (CDFW) Incidental Take Permit (ITP) for operation of the SWP. Alternative 4b (Head of Old River Barrier (HORB) Alternative) would require installation of a Head of Old River Barrier or alternative mechanisms to prevent San Joaquin River-origin anadromous fish from being drawn into the Delta export facilities. Alternative 4c (Extended Export Constraint Alternative) would require additional export constraints as a function of San Joaquin River flows (commonly referred to as the San Joaquin River inflow to export ratio or I:E). Alternatives 4a, 4b, and 4c could be adopted in combination with the proposed Plan amendments or other flow alternatives.

- **Modular Drought Alternatives (Alternatives 5a and 5b).** The modular drought alternatives include two variations that could help to address limited water supplies during drought. Alternative 5a (Instream Flow Protection Provision Alternative) would require water diverters (in addition to the Department of Water Resources [DWR] and U.S. Bureau of Reclamation [Reclamation]) to bypass water needed to meet the existing 1995 Bay-Delta Plan water quality objectives during drought circumstances similar to existing Standard Water Right Term 91 (Term 91). Alternative 5b (Shared Water Shortage Provision Alternative) would require all water users to reduce their use during drought conditions. Alternatives 5a and 5b could be adopted in combination with the proposed Plan amendments, other flow alternatives, and/or the proposed VAs.
- **A Modular Alternative for the Protection of Voluntary Agreements Flows (Alternative 6a).** Modular Alternative 6a would identify as part of the program of implementation additional measures to protect the base upon which the proposed VA flows are intended to be added from new or expanded water diversions and could be adopted in combination with the proposed Voluntary Agreements Alternative.

Staff Report Section 7.2, *Description of Alternatives*, provides additional information on the project alternatives evaluated in the document. The environmental analysis of Alternatives 1 through 5 are presented in Section 7.24, *Alternatives Analysis*, building from the impact analyses of changes in hydrology and water supply under the proposed Plan amendments provided in Sections 7.3 through 7.20 of the Staff Report.

In 2022, when the draft Staff Report was nearing completion, the State Water Board received a memorandum of understanding (MOU) for proposed VAs for updating the Bay-Delta Plan from various water users in the watershed, including DWR and Reclamation, as well as CDFW, California Natural Resources Agency (CNRA), and the California Environmental Protection Agency (CalEPA). Consistent with State Water Board Resolution 2018-0059 adopting the 2018 amendments to the Bay-Delta Plan, the State Water Board added consideration of the proposed VAs as an alternative that could provide a possible path forward for updating the Bay-Delta Plan. The proposed VAs include flow commitments and habitat restoration measures on a portion of the Sacramento/Delta tributaries for an 8-year term. The Proposed Voluntary Agreements Alternative (Alternative 6) and modular Alternative 6a are evaluated in Chapter 9, *Proposed Voluntary Agreements*. See Common Response 7.1, *General CEQA and Approach to the Analysis*, for more detail on the analysis of reasonably foreseeable compliance methods and response actions.

The revised proposed Plan amendments bring together in the Bay-Delta Plan program of implementation a VA pathway that incorporates commitments identified in the HRL proposal and would apply to specified HRL water rights, and a regulatory pathway that would apply to other water rights and to any HRL water rights no longer covered under the VA pathway. The analyses in

Chapter 13, *Revised Proposed Plan Amendments*, build upon the analysis of the proposed Plan amendments, the proposed VAs, and the alternatives presented in the 2023 draft Staff Report.

The revised proposed Plan amendments utilize and combine previously evaluated alternatives. The regulatory pathway is built from a combination of the proposed Plan amendments, the Low Flow Alternative (Alternative 2), and the Exclusion of Interior Delta Flow and Fall Delta Outflow Related Amendments alternative (Alternative 4a), and the VA pathway is built from a combination of the VA alternative (Alternative 6) and a variation of the Protection of Voluntary Agreement Flows alternative (Alternative 6a). The State Water Board developed Chapter 13, *Revised Proposed Plan Amendments*, for a limited recirculation to provide clarifying information and further analysis of the revised proposed Plan amendments to ensure that the public has the opportunity for additional meaningful public review and comment. Thus, the revised proposed Plan amendments are presented as the proposed project that is comprised of elements from the range of reasonable alternatives already evaluated.

The current version of Section 13.3, *Revised Proposed Plan Amendments*, describes the revised proposed Plan amendments released with the final Staff Report, including changes from what was described in the 2023 draft Staff Report and December 2025 version of the revised proposed Plan amendments and Chapter 13, *Revised Proposed Plan Amendments*. The proposed Plan amendments, with modifications, are the basis for the regulatory pathway under the revised proposed Plan amendments. Significant changes between the proposed Plan amendments and the revised proposed Plan amendments released with the final Staff Report are described in Common Response 1.3, *Revised Proposed Plan Amendments*, and Section 13.3 of the final Staff Report. These revisions include the addition of water supply adjustments that would apply under the inflow and associated inflow-based Delta outflow requirements at the outset of Plan implementation that lower flow requirements under certain conditions to reduce water supply impacts and allow more water to be stored in reservoirs. These refinements include the potential for modifying the water supply adjustments in the future and retain the possibility of moving up in the range of unimpaired flow under certain conditions. In addition, specific interior Delta flow requirements were removed from the regulatory pathway, specific numeric inflow requirements were moved to the program of implementation, and other changes were made. The revised proposed Plan amendments also include a VA pathway as the alternative implementation pathway for HRL commitments that apply to the HRL water rights identified in Appendix B.1 of the revised Plan. The VA pathway for the current version of the revised proposed Plan amendments is similar to the December 2025 version, with the inclusion of additional provisions for protection of the base flows to which HRL flows are intended to be additive and other changes summarized in Common Response 1.3 and Section 13.3 of the final Staff Report.

Multiple comments on the 2023 draft Staff Report expressed that the presentation of alternatives was confusing, that the alternative title *proposed Plan amendments* should have been presented as a numbered alternative, or that the 2023 draft Staff Report should have identified a preferred project alternative. CEQA does not require the identification of a “preferred alternative,” and the 2023 draft Staff Report did not do so. However, the December 2025 version of Chapter 13, *Revised Proposed Plan Amendments*, and the final Staff Report identify the updated project that the State Water Board will consider for adoption: the revised proposed Plan amendments. Chapter 1, *Executive Summary*, of the 2023 Staff Report, clearly stated that while the Staff Report identified “proposed Plan amendments,” the State Water Board had not yet made a decision on how to move forward with the Sacramento/Delta update to the Bay-Delta Plan, and all alternatives described in the 2023 draft Staff Report, including the proposed Plan amendments and the proposed VAs, were available for

consideration and possible adoption during the public planning process. This is consistent and appropriate and utilizes CEQA properly as a planning tool. CEQA does not require any particular system of naming or numbering alternatives. The State Water Board is responsible for orderly and efficient administration of the state's water resources, including the coordinated consideration of water rights, water quality, and drinking water. (Wat. Code, § 174.) Accordingly, updating a Water Quality Control Plan does not represent a "typical" CEQA project. Alternatives are more complicated than simply reviewing alternate locations or footprints, as would be appropriate when reviewing the construction of a facility. The revised proposed Plan amendments were developed to improve flow and water quality conditions over a large geographic area, and particularly for fish and wildlife beneficial uses in the Sacramento/Delta watershed. It is appropriate for alternatives to explore various approaches, including modular options to address specific problems.

The revised proposed Plan amendments described in Chapter 13, *Revised Proposed Plan Amendments*, of the final Staff Report are the proposed project and reflect the various alternatives and portions of alternatives that the State Water Board is considering for inclusion in this Bay-Delta Plan update. Alternatives that are not part of the revised proposed Plan amendments may be considered by the State Water Board at a future date. Please see Common Response 1.3, *Revised Proposed Plan Amendments*, for additional discussion and response to comments on the revised proposed Plan amendments.

Project Purposes and Goals, Ability of Revised Proposed Plan Amendments to Achieve Them

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. State CEQA Guidelines section 15124, subdivision (b), requires the lead agency to include a statement of the objectives sought by the proposed project. To avoid confusion with the term "objective" as it is used in reference to flow and other water quality objectives, this document uses the term "goals" in place of "objectives," the term used in section 15124. As stated in Section 7.1.3, *Purpose and Goals of the Sacramento/Delta Update to the Bay-Delta Plan*, of the 2023 draft Staff Report, the goals of the Sacramento/Delta update to the Bay-Delta Plan are to:

1. Provide an interconnected flow regime that provides for comprehensive protection for fish and wildlife from upstream natal Sacramento/Delta tributaries, through the Delta, and out to the ocean.
2. Provide flows, water quality, and other habitat conditions in the Sacramento/Delta that are sufficient to recover and maintain the natural production of viable native fish populations residing in and migrating through the Delta.
3. Provide flows of sufficient frequency, timing, magnitude, and duration necessary to achieve functions and processes essential to native fishes, such as improved tributary and in-Delta habitat conditions, improved temperature conditions, improved migratory conditions, and increased floodplain inundation, and promote habitat conditions that favor native fishes over nonnative fishes.
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.

5. Promote transparency in decision-making to the regulated community, tribal nations, environmental justice communities, and other stakeholders.
6. Establish flow objectives to reasonably protect fish and wildlife that take into consideration all of the demands being made and to be made on waters in the Sacramento/Delta and the factors to be considered for establishing water quality objectives in Water Code section 13241. These factors include, but are not limited to, past, present, and probable future beneficial uses and economic considerations.
7. Provide for the development and implementation of a monitoring and evaluation program to inform adaptive management of flows and future changes to the Plan.
8. Provide for and encourage collaboration, coordination, and integration of regulatory, scientific, and management processes related to flows in the Sacramento/Delta.

As also described in Section 7.1.3, *Purpose and Goals of the Sacramento/Delta Update to the Bay-Delta Plan*, the proposed Plan amendments were developed in consideration of the purposes and goals for the Sacramento/Delta Update to the Bay-Delta Plan. The regulatory pathway under the revised proposed Plan amendments would similarly meet the purposes and goals as the requirements would provide for an interconnected flow regime from upstream natal Sacramento/Delta tributaries, through the Delta, and out to the ocean along with recommendations to other entities for habitat restoration and other actions to improve ecosystem functions. The requirements would be expected to improve the frequency, timing, magnitude, and duration of flows that supports functions and processes for the protection of native fishes and would also provide for local cooperative solutions that can provide for better outcomes with lower water supply costs. The requirements also provide for monitoring and special studies measures to inform decision-making. The requirements were designed to provide transparency in decision-making to the regulated community, tribal nations, environmental justice communities, and other stakeholders.

To further advance the project's goals, the starting point for the inflow requirements under the regulatory pathway includes water supply adjustments that would apply to water rights existing as of 2025. As described in Section 13.3, *Revised Proposed Plan Amendments*, the water supply adjustments provide for lowering the required percent of unimpaired flow during all but the wettest hydrologic conditions down to 45 or 35 percent of unimpaired flow, with additional tributary-specific water supply adjustments for three rainfall and municipal supply dominated tributaries (the Mokelumne and Calaveras Rivers and Putah Creek). While the flow-abundance relationships presented in Chapter 3, *Scientific Knowledge to Inform Fish and Wildlife Flow Recommendations*, and Section 13.5, *Beneficial Environmental Effects*, indicate that the population abundance indices of key indicator species of ecosystem health would be expected to be greater at 55 percent of unimpaired flow (see Chapter 3), requiring 55 percent of unimpaired flow with water supply adjustments would also be expected to provide benefits to native fish species, including increases in abundance indices and frequency of exceeding ecological flow thresholds (see Section 13.5). In addition, the water supply adjustments are designed to reduce water supply impacts and allow more water to be stored in reservoirs on initial implementation which would be expected to assist with maintaining cold water supplies for temperature protection of native cold water fish species. The revised proposed Plan amendments include the possibility of moving up in the range of unimpaired flow under certain

conditions and the potential for modifying or removing the water supply adjustments in the future, which could provide additional ecological benefits.

Similar to what is described in Section 9.7.23, *Ability to Achieve Project Purpose and Goals*, the VA pathway provides flow and habitat restoration commitments in the Sacramento/Delta that are intended to provide improved tributary and in-Delta habitat conditions, improved migratory conditions, and increased floodplain inundation, which would promote habitat conditions that favor native fishes over nonnative fishes. The VA pathway provides flexibility for establishing beneficial habitat conditions for native fishes, addressing scientific uncertainty and changing conditions, and developing scientific information that will inform future management of flows. The VA pathway includes monitoring and evaluation provisions to inform adaptive management of flows and future changes to the Plan. As described in Section 13.5, *Beneficial Environmental Effects*, the VA pathway would be expected to provide ecological benefits in the form of increases in the area of different habitat types (spawning, rearing, floodplain), increased food production and other habitat improvements, and some increases in abundance indices of key indicator species under certain hydrologic conditions.

The revised proposed Plan amendments provide for a range of contingencies with the ability to pivot and adjust in response to new information and changed circumstances. The revised proposed Plan amendments, including both the VA pathway and the regulatory pathway as a backstop to the VA pathway that would apply to the HRL water rights in the event the VA pathway is discontinued, provides an approach that considers all of the demands being made and to be made on waters in the Sacramento/Delta and the factors to be considered for establishing water quality objectives in Water Code section 13241. These factors include, but are not limited to, past, present, and probable future beneficial uses and economic considerations. Annual and periodic reviews provide the opportunity to assess and report on progress on implementation of the Bay-Delta Plan and any needed changes to the Plan or its implementation to provide for the reasonable protection of beneficial uses. See Common Response 1.2, *Water Quality Control Planning Process*, for further discussion of the reasonable protection of fish and wildlife beneficial uses, consideration of other beneficial uses, and the discretion to achieve the objectives over time.

The State Water Board appreciates the thoughtful comments provided on the alternatives presented, and the public's meaningful participation. The State Water Board also acknowledges concerns reflected in public comments on the various alternatives, and opinions on whether one approach or another is capable of implementing or able to meet the overall purpose and goals of the project. The revised proposed Plan amendments were developed to improve flow and water quality conditions over a large geographic area, and particularly for fish and wildlife beneficial uses in the Sacramento/Delta. The impacts that could potentially result from implementation occur in a system that has been highly altered, and the project would be expected to improve conditions for native fish and wildlife in the Sacramento/Delta watershed over time. The State Water Board recognizes that providing instream flows for the environment necessarily results in less water available for other uses. Providing balanced protection of all beneficial uses of water is incredibly important and requires careful consideration, and the State Water Board is sensitive to supply impacts. The revised proposed Plan amendments represent a somewhat novel considered approach to achieving both ecological and water management benefits by providing for both a VA pathway and a regulatory pathway, and a program of implementation that is necessarily broad and flexible to allow for adaptation to changing environmental and other conditions. For further discussion of water supply impacts and other water supply actions, see also Common Response 6.3, *Water Supply and Other Water Management Actions*.

Adopting updates to a water quality control plan represents the beginning, not the end, of the State Water Board's process to evaluate and improve water quality conditions in the Sacramento/Delta. Subsequent implementation processes, as well as annual and periodic review processes, will afford the State Water Board flexibility to make adjustments to Bay-Delta Plan implementation, consistent with the flexibility provided in the Plan, without beginning the entire water quality control plan amendment process anew. These processes will include opportunities for public participation and comment.

Description and Comparison of Alternatives

A number of commenters alleged that the alternatives were not adequately described and thus could not be fully analyzed. Some commenters focused on the level of detail in the description of the alternatives, claiming that the Staff Report provided insufficient detail on how alternatives would be implemented. CEQA does not require that alternatives be described at the same level of detail as the project under analysis. Instead, the environmental document must provide sufficient information to allow the public and decisionmakers to make an informed choice. The Staff Report provides extensive and sufficiently detailed descriptions of the objectives and regulatory mechanisms of each of the alternatives. The proposed Plan amendments are described in Chapter 5, *Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta*; Alternatives 1 through 5 are described in Section 7.2, *Description of Alternatives*; and Alternatives 6 and 6a are described in Chapter 9, *Proposed Voluntary Agreements*. The modular alternatives are conceived as adjuncts to the stand-alone alternatives and are described in terms of what each would alter or add to the main alternative. In addition, the combination of alternatives represented in the revised proposed Plan amendments are described in Section 13.3, *Revised Proposed Plan Amendments*.

Some commenters objected to the consideration of modular alternatives. They are, however, a reasonable approach to a complex regulatory task, allowing the public and decisionmakers the opportunity to consider alternative approaches to specific environmental and practical challenges within the framework of the stand-alone alternatives. They are sufficiently described and analyzed to meet CEQA's purpose of providing the public and decision makers with the basis to make informed choices.

The State Water Board received numerous comments that requested a direct comparison of alternatives in the Staff Report. Some comments stated that it was difficult to assess how the alternatives compare to one another, particularly how the Voluntary Agreements compare to the proposed Plan amendments and to the Low and High Flow Alternatives. Some of these concerns may stem from the incorrect assumption that stand-alone alternatives would be mutually exclusive, and, as discussed in more detail below, commenters had strong and various opinions on the merits of both the proposed Plan amendments and the Voluntary Agreements. As explained in more detail below, the 2023 draft Staff Report contained sufficient description and detail on the possible alternatives to allow for meaningful public review and comment. In addition, a draft of the specific regulatory text for potential updates to the Bay-Delta Plan was subsequently released in October 2024 (2024 draft Plan) and incorporated alternatives identified in the 2023 draft Staff Report with revisions based on public comments. Following a public comment period on the 2024 draft Plan, revised draft Plans were released in July and December 2025.

The alternatives, moreover, are analyzed in sufficient detail. Chapter 6, *Changes in Hydrology and Water Supply*, presents Sacramento Water Allocation Model (SacWAM) results of potential instream

flow changes for Sacramento/Delta tributaries in increments of ten, from 35 percent up to 75 percent unimpaired flow (referred to as *scenarios* or *flow scenarios*), representative of the proposed Plan amendments and the Low and High Flow Alternatives. The scenarios represent a range of tributary inflows in recognition that tributaries may have unique needs and conditions, and allow for adjustments up or down within a given numeric range in order to meet those needs. Model results are presented for changes in hydrology under various scenarios, including changes in stream flows and reservoir levels, and changes in Sacramento/Delta water supply. The proposed Plan amendments and the Low and High Flow Alternatives are then compared to baseline conditions in the environmental analysis in Chapter 7, *Environmental Analysis*, of the Staff Report in order to evaluate the potential environmental impacts. Appendix F, *Impact Summary Tables for Alternatives 1, 2, and 3*, compares impacts of the Low and High Flow alternatives with the proposed Plan amendments.

Because the proposed VAs were received after much of the Staff Report had been prepared, the proposed VAs were analyzed for potential environmental impacts separately in Chapter 9, *Proposed Voluntary Agreements*. The CEQA analyses in the Staff Report for all alternatives rely on the same baseline which is described in Section 7.1.5.2, *Baseline, Evaluation Approach, and Modeling Tools*, of the Staff Report. The modeled representation of the baseline is described in Section 6.2.1, *Baseline Assumptions*. Section 9.3.6, *Points of Comparison for VA Flow Assets*, describes the different points of comparison for the VA flow assets, including the Staff Report baseline, the 2019 BiOps condition (which is very similar to the 2024 BiOps/Record of Decision (ROD) base that is the base for the VA flows identified in the revised proposed Plan amendments) used to model the additive VA flow commitments, and the 2008-2009 BiOps condition used as the point of reference in the benefit analyses of the 2017 Scientific Basis Report and the Scientific Basis Report Supplement. In addition, please refer to Common Response 6.2, *Baseline and No Project Alternative*, for a response to comments and more information about the project baseline. Therefore, since the proposed Plan amendments and all alternatives were analyzed in comparison to the same Staff Report baseline, the Staff Report included the information necessary to compare modeling results, impacts, effects, and benefits among all alternatives.

California water resource management is complex, and the project covers a broad range of compliance methods across a large area of the state. As a result, the impact analyses are necessarily broad and cover a wide range of foreseeable compliance measures and responses that could also be considered alternative means of compliance. Many of the environmental effects of the alternatives presented in Section 7.24, *Alternatives Analysis*, Chapter 9, *Proposed Voluntary Agreements*, and Chapter 13, *Revised Proposed Plan Amendments*, are already assessed in detail in the primary analyses in Sections 7.3 through 7.20, and in Sections 7.21 and 7.22 for compliance methods and response actions that involve construction. The alternatives analyses build from the primary environmental analysis and focus on identifying any new or changed environmental impacts of each alternative as applicable. The revised proposed Plan amendments are essentially a combination of various alternatives previously evaluated. Although commenters requested a comparison of alternatives, impacts were already narratively compared within the impact analyses in Chapter 13 of the 2025 partially recirculated draft Staff Report. However, in response to these comments, the final Staff Report includes a new alternatives analysis discussion in Section 13.7.1, *Approach*, and a tabulated comparison of impacts in Appendix H4, *Impact Summary Table for Alternatives*.

Analysis and Modeling of Alternatives

A number of commenters alleged that the impacts of the alternatives were not fully analyzed, for example because all of the alternatives were not modeled or analyzed quantitatively. Commenters questioned why model results were provided for one modular alternative (Alternative 4a) but not for others, arguing that modeling should have been completed to understand impacts in combination with the stand-alone alternatives.

CEQA does not require that alternatives be considered at the same, or greater, level of detail as the project under analysis. Nor does CEQA require that analysis of alternatives include cumulative impacts. It is sufficient to provide a qualitative approach discussing how the alternative's impacts would compare to the proposed project's impacts. As explained in Section 7.24, *Alternatives Analysis*, the environmental impacts of each of the modular alternatives are evaluated in isolation compared with existing conditions to properly characterize changes that could occur from each modular alternative, as distinguished from impacts of the stand-alone alternatives. Discussion of the impacts of each modular alternative in combination with the proposed Plan amendments, other flow alternatives, and proposed VAs is also provided. The draft Staff Report takes a similar approach to considering alternatives' beneficial effects and their ability to meet the project objectives.

Such an approach is particularly appropriate when the alternative is a relatively small change or addition to the proposed project, such as the modular alternatives (Alternatives 4a-c, 5a-b and 6a). For example, as compared to the proposed Plan amendments, Section 7.24.6.2, *Shared Water Shortage Provision (Alternative 5b)*, explains that Alternative 5b would redistribute which water users would reduce use in order to meet existing Bay-Delta Plan water quality objectives during a drought, without changing those objectives. It therefore would not change overall hydrology or water supplies. The differences between impacts of the proposed Plan amendments and impacts of Alternative 5b would be redistributing effects to varying degrees based on specific hydrologic and water right conditions versus changing overall effects on water supplies. The scope of the Staff Report's quantitative analysis is broad, not based on specific water rights; therefore, qualitative analysis is the available tool for considering how impacts of Alternative 5b would differ from the proposed Plan amendments. Further, there are currently no available modeling tools to evaluate specific water right effects which are highly complex and interdependent on many factors, thus the Staff Report relies on the best available tools and information.

Similarly, as another example, Alternative 4b would be additive to the proposed plan amendments or another flow alternative and add a requirement to install and operate the Head of Old River Barrier in the spring to increase survival of out-migrating juvenile salmonids and in the fall to enhance adult migration. As explained in Section 7.24.5.2, *Head of Old River Barrier Alternative (Alternative 4b)*, of the Staff Report, this requirement would not affect water supplies upstream of the Delta. Moreover, because the proposed Plan amendments would have limited exports during the times in which HORB would be in operation due to export limits proposed as part of the previously proposed Plan amendments, the alternative would have limited adverse impacts within the Delta and in export areas. Again, a qualitative approach is sufficient and appropriate.

Commenters also objected to the analysis of alternatives on the grounds that the Staff Report "emphasized" or "dismissed" certain alternatives. The Staff Report, however, considered all the alternatives at the appropriate level of detail, although its quantitative or qualitative approach varied as discussed above. The Staff Report discusses each alternative's potential adverse environmental impacts, its beneficial effects on the environment, and its ability to meet the project's

objectives. Any statement in the discussion of one these analyses—for example, a statement that a given alternative would not achieve the project’s objectives as well as the proposed Plan amendments—is not a “dismissal,” it is information for the public and decision makers to consider. At the same time, the use of quantitative analysis for an alternative is not “emphasis,” it is the appropriate analysis given the nature of the alternative and the available tools.

Range of Reasonable Alternatives

Various commenters objected to the range of reasonable alternatives evaluated in the Staff Report, some arguing that it was too narrowly focused on flow, and others objecting to its inclusion of approaches other than flow. Taken together, the flow alternatives, modular alternatives, and VA proposal considered in the 2023 draft Staff Report and the revised proposed Plan amendments considered in Chapter 13, *Revised Proposed Plan Amendments*, make up a reasonable range of alternatives. This range presents the public and decision makers with both voluntary and default/regulatory pathways and different combinations of flow and non-flow implementation actions for achieving the objectives. Within the regulatory pathway, it demonstrates the effects of multiple degrees of regulation (the various flow ranges), along with various particular means of achieving objectives. The High Flow Alternative represents a balance that is more protective of habitat and fish populations, though with higher reservoir storage and cold water pool concerns, while the Low Flow Alternative demonstrates a scenario in which the Bay-Delta Plan makes more water available to agricultural and municipal users (and species dependent on agricultural land use patterns). For each of these alternatives, the Staff Report analyzes the approach’s effectiveness in achieving the project’s objectives and its significant adverse impacts on the environment, in comparison to the proposed Plan amendments.

Other commenters suggested that the range of alternatives should focus less on instream flows and include more non-flow habitat restoration. The State Water Board has consistently acknowledged and incorporated flow and non-flow measures into Bay-Delta Plan provisions to address aquatic ecosystem needs in the Delta and tributaries. Non-flow measures are reflected in every alternative presented in the Staff Report, as described further in Common Response 1.3, *Revised Proposed Plan Amendments*.

The flow scenarios all provide a framework to incorporate both flow and complementary ecosystem projects such as physical habitat restoration into adaptive implementation and local cooperative solutions. Some complementary ecosystem projects may also serve as an implementation mechanism for the proposed cold water habitat objective. Specifically, provisions for adaptive implementation of the numeric inflow requirements are provided to optimize flows to benefit native fish and wildlife while also minimizing water supply impacts, and for the numeric inflow requirements to be implemented in a coordinated fashion with the cold water habitat and inflow-based Delta outflow requirements. The environmental analyses evaluate a complete range of impacts in the event that water users do not utilize adaptive implementation, as well as the potential impacts from adaptive implementation, including habitat restoration and other non-flow measures. The impacts of a full range of flow scenarios with cold water storage targets are analyzed in Sections 7.3 through 7.20. The impacts of physical habitat restoration and other ecosystem projects are analyzed in Section 7.21, *Habitat Restoration and Other Ecosystem Projects*. In addition, the VA pathway includes implementation of non-flow habitat restoration actions targeted at improving spawning and rearing capacity for juvenile salmonids, estuarine species, and other native fish and

wildlife on a portion of the Sacramento/Delta tributaries for an initial 8 years (with the possibility to extend the term). Alternative 4b, requiring installation of the Head of Old River Barrier as further discussed below, is within State Water Board's water rights authorities to require the CVP and SWP to take actions to avoid impacts from their pumping operations in the Delta. Alternatives that only include widespread non-flow measures without associated increases in flow would not meet the purpose and goals of the project nor provide for reasonable protection of fish and wildlife beneficial uses, since the science (as discussed in Chapter 3, *Scientific Knowledge to Inform Fish and Wildlife Flow Recommendations*, and Chapter 4, *Other Aquatic Ecosystem Stressors*) indicates a combination of flow and habitat are needed; alternatives including such measures are therefore not a part of the required reasonable range. However, as described above, non-flow measures are reflected in every alternative presented in the Staff Report.

Some comments use the term "physical solutions doctrine" when referring to non-flow measures, apparently applying the phrase to any instance where construction projects or physical habitat restoration are suggested, regardless of whether it settles a water right dispute. The "physical solution doctrine" is a specific legal remedy used by courts to resolve water rights disputes between senior and junior water rights "A water diverter can be compelled to employ a physical solution through which competing water demands can be met and the constitutional goal of promoting maximum beneficial use of the State's water will be served." (State Water Board Decision 1631 (1994)) The Staff Report does not use this term and instead refers to "non-flow" measures or actions, or "physical habitat restoration."

The range of alternatives could not, and is not required to, include every possible flow level between high-flow and low-flow, or between the levels of the proposed Plan amendments and the other alternatives, or outside the range analyzed. Similarly, CEQA does not require the consideration of multiple versions of aspects of an alternative, such as the precise application of inflow-to-export ratio or Delta Cross Channel (DCC) closure periods included in Alternatives 4a and 4c. Nor does CEQA require the inclusion of every combination of features, such as flow objectives and adaptive flow adjustments, or combinations of various levels of flow and non-flow habitat restoration. CEQA does not require the Staff Report's range to include an alternative that provides the greatest possible protection to a given resource— either habitat or agriculture. Instead, the Staff Report, in keeping with CEQA, considers a range of alternatives that represent different approaches to the reasonable protection of fish and wildlife beneficial uses while considering other beneficial uses and environmental impacts.

Some commenters claimed that the Staff Report's range of alternatives was not reasonable because it included alternatives that would not meet the project's purpose and goals. The alternatives in a reasonable range are those that "would feasibly attain *most* of the basic objectives of the project." (Cal. Code Regs., tit. 14, § 15126.6, subd. (a); Cal. Code Regs., tit. 23, § 3777, subd. (b)(3) (emphasis added)). An alternative may be a part of a reasonable range even if does not meet every purpose and goal.

Multiple commenters argued that the project purpose and goals are too narrowly focused on fish and wildlife protections. To the contrary, the purpose and goals expressly recognize the need to "take into consideration all of the demands being made and to be made on waters in the Sacramento/Delta and the factors to be considered for establishing water quality objectives in Water Code section 13241. These factors include, but are not limited to past, present, and probable future beneficial uses and economic considerations." The range of alternatives, as described above,

includes alternatives that strike different balances between fish and wildlife protections, other beneficial uses, and economic considerations.

Comments on Specific Alternatives

The State Water Board received comments that criticized or supported some of the alternatives for various reasons, and comments that suggested variations or modifications of the alternatives. The discussion below summarizes each alternative and some of comments received, followed by a discussion in response.

No Project Alternative

Alternative 1, No Project Alternative, is the continuation of the Bay-Delta Plan as implemented by D-1641, with the existing hydrology and water supply conditions described in the 2023 draft Staff Report Chapter 2, *Hydrology and Water Supply*. This alternative recognizes that current conditions include significant flows that are not protected by the regulatory regime and thus may be reduced by expanded use. Therefore, the No Project Alternative anticipates that Delta inflows and Delta outflows would be expected to be reduced over time to levels below baseline conditions. See also Common Response 6.2, *Baseline and No Project Alternative*, for more discussion.

Flow Alternatives

The proposed Plan amendments include inflows from the Sacramento River, its tributaries, and Delta eastside tributaries (the Cosumnes, Mokelumne, and Calaveras Rivers) of 55 percent unimpaired flow, with an adaptive range from 45 percent to 65 percent unimpaired flow, cold water habitat provisions for reservoirs to be operated in a manner that provides needed cold water habitat for salmonids or other measures, inflow-based Delta outflows, Interior Delta flow measures, and monitoring, reporting, and other general provisions. As discussed above, even though this alternative was titled *Proposed Plan Amendments*, all alternatives described in the draft Staff Report would be available for consideration and adoption during the public planning process. Alternative 2, Low Flow Alternative, takes the same approach as the proposed Plan amendments except that the new numeric inflow objective for the Sacramento/Delta tributaries would require between 35 and 45 percent unimpaired flow. Alternative 3, High Flow Alternative, takes the same approach as the proposed Plan amendments except that the new numeric inflow objective for the Sacramento/Delta tributaries would require between 65 and 75 percent unimpaired flow.

Multiple comments advocated adoption of the High Flow Alternative, citing the Delta Flow Criteria Report's identification of 75 percent unimpaired flow as recommended for fish protection. Commenters questioned why this flow requirement was not part of the proposed Plan amendments and why an alternative of the 75 percent unimpaired flow with water supply adjustments (WSAs) was not considered. As stated in the Staff Report, the Delta Flow Criteria Report acknowledged that it may not be possible to attain all of the identified flow criteria in all years and maintain adequate storage for temperature management for the various runs of Chinook salmon and other sensitive species. The report also noted that there are many other important beneficial uses that these waters support such as municipal, industrial, agricultural, hydropower, recreation, and environmental uses such as wetlands and refuge water supplies that must be considered when determining regulatory flow requirements.

Although the required Delta inflows would be higher under the High Flow Alternative compared with the proposed Plan amendments and would provide ecosystem benefits, 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. The Delta Flow Criteria Report acknowledged that the identified flow criteria should be tempered by the additional need to maintain cold water resources in reservoirs on tributaries to the Delta until improved passage and other measures are taken that would reduce the need for maintaining cold water supplies in reservoirs. Reservoir storage results presented in Chapter 6, *Changes in Hydrology and Water Supply*, and Appendix A1, *Sacramento Water Allocation Model Methods and Results*, suggest that carryover storage levels would be greatly reduced under the High Flow Alternative (particularly the 75 scenario) in numerous reservoirs in the Sacramento/Delta watershed. Without adequate carryover storage, there would be significant challenges in maintaining suitable downstream water temperatures to support native cold water fish species such as Chinook salmon and steelhead. Temperature modeling results presented in Appendix A6, *Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, and American Rivers*, specifically suggest significant challenges in maintaining suitable water temperatures on the Sacramento, Feather, and American Rivers under the High Flow Alternative.

Some commenters requested that the Staff Report analyze Alternative 3 from the 2024 Environmental Impact Statement for the Long-Term Operations (LTO) of the CVP and SWP ("LTO Alternative 3"). LTO Alternative 3 was a non-governmental agency (NGO) proposed alternative in a different permitting process specific to the operations of the CVP and SWP (collectively referred to as the Projects) and would involve varying operational requirements to achieve flows as high as 65% of unimpaired flow depending on storage levels. State Water Board staff met with the commenters to discuss this suggestion but could not find a feasible implementation mechanism to incorporate this approach that was within the State Water Board's regulatory authorities and the scope of the Plan, and was consistent with water right priorities and other applicable requirements. The LTO is focused narrowly on CVP and SWP operations relative to the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) and does not address many topics that the State Water Board and the Bay-Delta Plan must account for, including: other water users in the system; the water right priorities of all of the users and their relative responsibilities for bypass flows given those priorities; methods for integrating required inflows with required inflow-based Delta outflows and required reservoir management conditions consistent with water right priorities; and other considerations. Further, LTO Alternative 3 was also not carried forward by Reclamation in their proposed project for the LTO. The regulatory pathway for the revised proposed Plan amendments includes provisions with similar purposes as LTO Alternative 3. These are designed to protect cold water resources while providing for increased instream flows without impacting critical health and safety water supplies and other critical supplies. Specifically, as described in Common Response 1.3, *Revised Proposed Plan Amendments*, the revised proposed Plan amendments include water supply adjustments upon initial implementation to preserve water in storage in drier conditions and reduce water supply impacts; provisions for temperature management strategies and annual temperature management plans that include provisions for carryover storage; and curtailment exceptions for health and safety and other critical purposes. Modifications to WSAs and cold water habitat implementation measures, or other approaches, can be considered in the future as part of the State Water Board's periodic review processes.

Additional commenters proposed combining habitat restoration requirements with various flow scenarios, such as 55 or 75 percent of unimpaired flow. As discussed above, non-flow measures are reflected in every alternative presented in the Staff Report. The flow scenarios all provide a framework to incorporate both flow and complementary ecosystem projects such as physical habitat restoration into adaptive implementation and local cooperative solutions. Some complementary ecosystem projects may also serve as an implementation mechanism for the proposed cold water habitat objective.

Other commenters objected to any iteration of the flow scenarios, claiming they would interfere with water rights and would be infeasible due to conflicting requirements under the ESA. The State Water Board does not agree. The applicability of the federal ESA to a project does not prevent the State from exercising its independent jurisdiction to regulate diversions of water for the reasonable protection of beneficial uses. The State Water Board has authority to determine what species need for their reasonable protection and to adopt standards under Porter-Cologne to achieve that protection. These standards may differ from agreements reached among other entities, even where those agreements are pursuant to ESA or even CESA. The cold water habitat objective is narrative in order to provide sufficient flexibility for implementation options, and is intended to be complementary with other existing requirements to the extent possible. See Common Response 1.1, *General Comments*, regarding consistency with other laws, policies, and agreements, including a general discussion of federal and state ESAs. See also Common Response 1.2, *Water Quality Control Planning Process*, for further discussion of water rights and State Water Board authorities to implement the Bay-Delta Plan.

Comments received on the proposed Plan amendments and other flow alternative were considered and used in drafting the revised proposed Plan amendments. Please see Common Response 1.3, *Revised Proposed Plan Amendments*, regarding the revised project.

Proposed VA Alternatives

Alternative 6, Proposed Voluntary Agreements, is described in Section 9.3, *Description of the Proposed Voluntary Agreements*, of the 2023 Staff Report. The VAs include a combination of proposed flow and non-flow habitat restoration measures included as part of the HRL proposal on a portion of the Sacramento/Delta tributaries over eight years (with the intent to extend the term), including varying amounts of increased flows, depending on water year type, and non-flow habitat restoration actions targeted at improving spawning and rearing capacity for juvenile salmonids, estuarine species, and other native fish and wildlife. The proposed VA flows were originally intended to be additive to the Delta outflows required by D-1641 and resulting from the 2019 BiOps. At the request of the HRL proponents this was changed to the 2024 BiOps/ROD given that the 2024 BiOps/ROD are very similar to the 2019 BiOps.

Numerous commenters objected to the proposed VA alternative for not providing enough flow to reasonably protect fish and wildlife beneficial uses, leading to further ecosystem collapse and fisheries extinction. The Scientific Basis Report Supplement (Appendix G2 to the Staff Report) provides an analysis of the benefits of the VA pathway, and Staff Report Section 9.7.6.2 and Section 13.7.6.2, both titled *Aquatic Biological Resources*, provide the analysis of the impacts of the VA pathway on aquatic biological resources. See also Common Response 1.2, *Water Quality Control Planning Process*, for details on the reasonable protection of fish and wildlife beneficial uses and consideration of other beneficial uses.

Numerous commenters supported the VA Alternative as the only alternative that would protect all beneficial uses of water, suggesting that the regulatory pathway should not be included in the revised proposed Plan amendments. However, as discussed above and elsewhere throughout the Staff Report, the proposed Plan amendments, and thus the regulatory pathway of the revised proposed Plan amendments, are supported by evidence to provide for the reasonable protection of fish and wildlife beneficial uses. The State Water Board recognizes that providing instream flows for the environment necessarily results in less water available for other uses. Providing balanced protection of all beneficial uses of water requires careful consideration, and the State Water Board is sensitive to supply impacts. The revised proposed Plan amendments thus bring together in the Bay-Delta Plan program of implementation a VA pathway that incorporates HRL commitments and would apply to HRL water rights and a regulatory pathway that would apply to other water rights and to HRL water rights in the event the VA pathway is discontinued. The inclusion of the regulatory pathway in the revised proposed Plan amendments as a regulatory backstop provides an important backstop to the VA pathway in the event it is not implemented or is not effective. The Scientific Basis Report Supplement found that the VAs would be expected to result in benefits for fish and wildlife, although there are uncertainties in the magnitude of those benefits and whether they would result in population-level improvements. To address the uncertainty, the VAs include supplemental science and monitoring activities that would monitor and evaluate the effectiveness of the VAs to inform a State Water Board decision on whether to continue, modify, or terminate the VA pathway.

As part of the water quality control planning process, the State Water Board must establish water quality objectives and a program of implementation that, in its judgment, will provide for the reasonable protection of beneficial uses and the prevention of nuisance. When formulating these water quality objectives and program of implementation, the State Water Board must consider a number of factors including but not limited to: consideration of past, present, and probable future beneficial uses of water; the environmental characteristics of the hydrographic unit being considered; water quality conditions that could reasonably be achieved through the coordinated control of all factors affecting water quality in the area; and economic considerations. (Wat. Code, § 13241.) These factors, taken together, support the revised proposed Plan amendments' combination of the VA and regulatory pathways and other provisions. See Common Response 1.2, *Water Quality Control Planning Process*, for additional discussion on the rationale and support for reasonable protection of fish and wildlife beneficial uses, the consideration of other beneficial uses, and discretion to achieve reasonable protection over time.

Modular Alternative 6a would identify additional measures to protect the base upon which the VA flows are intended to be added from new or expanded water diversions. Specifically, any new point of diversion of water or expanded point of diversion of water would not be authorized to divert water during the January through June time period unless Delta outflows were at levels determined in the State Water Board's 2017 Scientific Basis Report, or future equivalent analyses, to provide conditions expected to result in the recovery of a wide array of native fish and wildlife species. The Delta above Collinsville already is included in the State Water Board's list of Fully Appropriated Streams (FAS) from June 15 through August 31. This FAS listing would also be proposed to be expanded to include September through December except during high-flow events defined as the wettest 5 percent of historical hydrologic conditions. This alternative could also include an exception for *de minimis* diversions.

One commenter expressed support for Alternative 6a and recommended applying a similar approach further across the Plan. Other commenters drew similarities between Alternative 6a and the designation of fully appropriated streams, raising issues related to process and the impacts to

state-filed water right applications with senior priority dates. Additionally, several commenters opposed 6a due to the limitations it would place on future water resilience projects, the protection of flows beyond those resulting from the 2019 BiOps and D-1641, and the disconnect between the short-term VAs and long-term CVP and SWP operations.

HRL commitments are in addition to base flows, including flows required by D-1641, other regulatory requirements, and other non-regulatory flows that would be present absent HRL flow commitments. Because the HRL flows are intended to be additive to required flows under D-1641 and resulting flows under the 2024 BiOps/ROD, additional mechanisms are needed to protect the base upon which the HRL flows are intended to be additive from diversion. The revised proposed Plan amendments do not include the specific measure proposed in Alternative 6a; however, to fulfill the intent of Modular Alternative 6a, a provision is included in the revised proposed Plan amendments for protection of the VA pathway flow base. To help ensure that water quality conditions, including existing flows, together with other measures in the watershed, continue to support and maintain natural production of viable native fish populations, in future water right actions the revised proposed Plan amendments state that the State Water Board would consider imposing requirements, based on the record established during the administrative proceeding, including any hearing, to ensure that the use of water is consistent with and supports the salmon protection, fish viability, inflow, inflow-based Delta outflow, and interior Delta flow objectives.

The revised proposed Plan amendments also include a new LTO base flow balancing provision to require there be a commensurate increase in HRL flow commitments to replenish substantial reductions in Delta outflow from base conditions to which HRL flows were assumed to be additive in the scientific and environmental analyses supporting approval of the VA pathway due to substantive changes in water project operations or other operational changes. The affected HRL participants would submit an interim plan for Executive Director approval that documents the change in Delta outflow and the commensurate increase in Delta outflow that would be provided. If the timing or magnitude of the commensurate increase in Delta outflow differs from what would have been provided absent the change, the affected HRL participant is required to submit scientific and technical information demonstrating that the proposed outflows along with other measures are anticipated to provide ecological benefits comparable to what would have occurred absent the change in operations. For more information on the protection of base flows provisions, see Section 4.4.9.1 of the revised proposed Plan amendments.

The revised proposed Plan amendments also specify that new water supply projects, including new water right applications and water right change petitions, would be subject to the regulatory pathway without water supply adjustments. However, increased diversions from new water supply projects that are subject to the regulatory pathway will not be included in determination of the base flows to which the HRL flow commitments are required to be additive.

Interior Flows/Fall Delta Outflow Alternative

As discussed in Chapter 5, *Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta*, the Bay-Delta Plan includes objectives in the interior Delta to protect fish and wildlife from impacts related to the operations of the SWP and CVP that limit exports and require closing of the DCC at specified times. As described in more detail in Chapter 5 and Section 7.1, *Introduction, Project Description, and Approach to Environmental Analysis*, the proposed Plan amendments (and other flow alternatives) would add additional restrictions on exports as a function of San Joaquin River flows (I:E), DCC gate requirements, Old and Middle Rivers (OMR) reverse flow constraints, and fall Delta outflow

requirements that are based on constraints from prior NMFS and USFWS BiOps for the operations of the SWP and CVP and prior SWP ITP.

Alternative 4 includes three modular alternatives that could modify the interior Delta flow and fall Delta outflow provisions of the proposed Plan amendments or the other flow alternatives.

Alternative 4a would exclude new interior Delta flow and fall Delta outflow components of the proposed Plan amendments and other flow alternatives. Alternative 4b would require installation and seasonal operation of the Head of Old River Barrier for an interim period (10 years) and would require associated monitoring and experimental studies to further assess its effectiveness.

Alternative 4c would expand and extend existing export constraints. These alternatives could be combined with the proposed Plan amendments or either the High Flow or Low Flow Alternative.

Several commenters opposed the inclusion of Alternative 4a, arguing that the removal of interior Delta flow and fall Delta outflow components would shift the protection of the public trust and beneficial uses to different agencies under different legal authorities. Other commenters claim that Alternative 4a is unnecessary as an alternative because the ESA and CESA permits are already legal obligations of the Projects and their inclusion in the Plan amendments would thus have no effect. The State Water Board has the authority and responsibility to develop water quality objectives for the reasonable protection of fish and wildlife and other beneficial uses of water and to implement objectives within the State Water Board's authorities as appropriate. Those authorities include actions needed to avoid and address water quality impairments and administration and continuing oversight over water rights and needed conditions on those rights, including conditions to provide for the reasonable protection of fish and wildlife from diversion activities (e.g., entrainment, impingement, adverse flow conditions, impacts to water quality). These provisions are directly within the State Water Board's authorities and responsibilities to ensure the reasonable protection of fish and wildlife, which may call for additional measures beyond those needed to comply with the ESA or CESA.

Some commenters suggested that the State Water Board consider various iterations of Interior Flow requirements including expanded I:E ratios, removal of the wet conditions offramps, or reversion to requirements contained in the 2008 and 2009 BiOps. As discussed above, the Staff Report includes the required range of reasonable alternatives.

Multiple comments suggested that Alternative 4b, installing the HORB, would not be effective in advancing the project's purposes. Comments noted that studies of prior HORB installations did not show the benefits described in the draft Staff Report. However, multiple studies show positive effects of installation on the survival of emigrating juvenile Chinook salmon in the spring (discussed in Section 3.4.5.3, *Juvenile Through-Delta Emigration*). Buchanan et al. (^2021) demonstrated that juvenile steelhead survival from the Head of Old River to Chipps Island increased when the HORB was installed and San Joaquin River inflows were higher, as represented by the five-day mean daily inflow (^Buchanan et al. 2021). Furthermore, comparisons of release studies conducted under similar inflow conditions in spring 2016 showed higher survival rates when the barrier was present than when it was absent, indicating that installation of the HORB improves juvenile steelhead survival. Alternative 4b would account for uncertainty by requiring HORB only for a 10-year interim period, during which there would be independently-reviewed monitoring and experimental studies to assess its effectiveness. It would also allow DWR and Reclamation to propose other measures to the State Water Board for approval that would achieve equivalent or better protection to migrating fish than HORB. Several comments suggested that rather than installation of the HORB, requiring adequate flows in the San Joaquin River would be a more effective approach to reduce the impacts of

exports from the Delta. However, flows in the San Joaquin River are outside the scope of this Plan update. See Common Response 1.2, *Water Quality Control Planning Process*, for more information on the relationship with the 2018 Lower San Joaquin River/Southern Delta (LSJR/SD) Update to the Bay-Delta Plan.

Commenters called for quantitative analysis and modeling of Alternative 4c before consideration. One commenter suggested extending the current agricultural salinity objectives in the Plan and D-1641 beyond August 15 to protect fall run salmon and other beneficial uses. As indicated in Common Response 1.1, *General Comments*, and Common Response 1.3, *Revised Proposed Plan Amendments*, the current updates to the Bay-Delta Plan are focused on the reasonable protection of fish and wildlife and have not evaluated changes to agricultural salinity objectives or extending those objectives to address other beneficial uses. Further, as discussed above, the Staff Report includes adequate analysis of a reasonable range of alternatives.

Some commenters expressed support for Alternative 4c, citing the potential benefits to Bay-Delta fish species, including salmonids and sturgeon. However, other commenters strongly objected to this alternative and argued that there is no scientific evidence that more natural flows in the Delta would meaningfully benefit native fish. Sufficient evidence, including the 2017 Scientific Basis Report, supports the benefit of natural Delta flows and the inclusion of Alternative 4c as a part of the range of alternatives. However, the revised proposed Plan amendments do not contain provisions to implement modular Alternatives 4b and 4c. The State Water Board could consider those in a future Bay-Delta Plan update. Chapter 5, *Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta*, of the 2023 draft Staff Report identified the possible inclusion of new narrative and numeric interior Delta flow objectives, including provisions based on prior BiOp and ITP constraints including: expansion of numeric SWP and CVP export constraints based on San Joaquin River flows (referred to as the San Joaquin River I:E); new limitations on Old and Middle River reverse flows; and modification of Delta Cross Channel Gate closure requirements for consistency with current NMFS BiOp requirements.

Consistent with Alternative 4a, the expansion of the San Joaquin River I:E and new Old and Middle River reverse flow limitations have been removed from the revised proposed Plan amendments as explicit interior Delta flows objectives. In addition, the proposed substantive changes to the closure periods for the DCC objective have been removed from the revised proposed Plan amendments. However, updates are retained to the current interior Delta flow objectives to replace outdated decision-making processes and related non-substantive updates. The narrative interior Delta flows objective was also retained. In addition, Chapter 5, *Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta*, of the 2023 draft Staff Report identified the possible inclusion of a fall Delta outflow objective. Consistent with Alternative 4a, an objective for fall Delta outflow is not included in the revised proposed Plan amendments.

While specific interior flow requirements are no longer included, the revised proposed Plan amendments include a new narrative interior Delta flow objective that is implemented through compliance by the SWP and CVP with the numeric interior Delta flow objectives and implementation measures required pursuant to ESA and CESA requirements for the operations of the CVP and SWP export facilities.

Drought Alternatives

Alternatives 5a and 5b, the Modular Drought Alternatives, assess different approaches to addressing limited water supplies for meeting existing Bay-Delta Plan flow-based water quality objectives and related requirements during dry periods, such as declared drought emergencies. Alternative 5a (Instream Flow Protection Provision) would build upon current curtailments under standard water right Term 91 by requiring other water users to contribute to meeting the existing Bay-Delta Plan objectives in order of water right priority before the Projects are required to release previously stored water to meet those objectives. Alternative 5b (Shared Water Shortage Provision) would require all water users in the Sacramento/Delta watershed to conserve water during times of drought in order to contribute toward meeting the Bay-Delta Plan objectives. As modular alternatives, these could be combined with the proposed Plan amendments or either the High Flow or Low Flow Alternative.

In the past, most water users in the watershed have not had any limitations on their diversions to ensure that the Bay-Delta Plan objectives are met, and water quality objectives have been met primarily by the Projects pursuant to D-1641. Prior to adoption of D-1641, the State Water Board held a water rights hearing to determine responsibility for meeting the objectives in the 1995 Bay-Delta Plan and resolve other related issues. As part of that process, DWR and Reclamation agreed to maintain interim responsibility for ensuring that the 1995 Bay-Delta Plan objectives were met for an undefined period of time unless and until DWR or Reclamation requested that the State Water Board convene a hearing to consider allocating responsibilities to other parties. (State Water Board Order WR 2001-05.) Alternatives 5a and 5b would have expanded the parties responsible for meeting the flow objectives from the 1995 Bay-Delta Plan, which continue to be applicable, during droughts. While the State Water Board has not elected to include Alternatives 5a or 5b in the revised proposed Plan amendments, it may consider these or other approaches in the future.

Commenters incorrectly suggested that Alternative 5a would be infeasible because it is not within the authority of the State Water Board. Alternative 5a would follow the approach of Term 91, a term in certain water users' water rights, that provides for the State Water Board to curtail water diversions when the Projects are required to release previously stored water to meet Delta flow and water quality requirements and other in-basin (within the Delta watershed) non-Project demands. The alternative would apply a similar procedure to more water users than are currently covered. The decision in a court case, *El Dorado Irrigation District v. State Water Resources Control Board* (2006) 142 Cal.App.4th 937, held that the State Water Board can, following appropriate procedures, include Term 91 in the permits of other appropriators so as to more fairly allocate the responsibility of meeting objectives among the various water users throughout the Delta watershed. That same reasoning would apply to Alternative 5a. The alternative is thus feasible and an appropriate part of the reasonable range.

There were several questions as to the scope and purpose of Alternative 5a. The alternative would advance the project objectives by helping to maintain cold water storage in Project reservoirs and would reduce the need for temporary urgency change petitions (TUCPs) during drought periods by requiring less releases of previously stored water by the Projects to meet existing Bay-Delta Plan objectives. It would do so by requiring more senior water rights holders than the current water rights holders who have Term 91 in their permits (older than approximately 1965) within the plan area to bypass natural and abandoned flows needed to meet Delta flow-dependent water quality objectives in order of priority during drought periods. The Projects would still be required to curtail their diversions of natural and abandoned flows before these water rights, but they would not be

required to release previously stored water before more senior water rights are curtailed, preserving more water in storage for cold water and to meet objectives. This concept is in keeping with the water right priority system. Water rights that are presently subject to Term 91 would continue to be subject to Term 91 during and outside of drought periods.

Multiple commenters took issue with Alternative 5b, stating that it needs refinement and additional information on implementation. As discussed above, the alternatives are described at the level of detail CEQA requires. One commenter suggested specifically limiting agricultural water use during droughts. As discussed above, the Staff Report's range of alternatives meets CEQA's requirements. Another commenter questioned Alternative 5b's ability to avoid environmental impacts during drought, citing the use of TUCPs to circumvent responsibilities. Please see Common Response 1.3, *Revised Proposed Plan Amendments*, for a discussion on TUCPs and their interaction with the revised proposed Plan amendments.

The revised proposed Plan amendments do not include Modular Alternatives 5a or 5b, although the State Water Board could consider those in a future Bay-Delta Plan update. The Bay-Delta Plan does specify that to implement the Sacramento/Delta updates to the Bay-Delta Plan, as necessary the State Water Board will issue water right curtailments based on water right priorities for appropriative rights and pre-1914 appropriative and riparian claims of right, including adjudicated rights, when it is determined that water is not available at water right priorities. In order to inform the curtailments, the State Water Board will develop an implementation methodology to determine when water is not available at water right holders' priorities of right. A draft version of this methodology will be developed through a public process within one year of approval of the current Plan amendments by the California Office of Administrative Law (OAL). The initial version of the methodology will then be finalized in coordination with the implementation regulation. Within two years of approval of the current Plan amendments by OAL, the State Water Board will adopt curtailment regulations that identify specific curtailment procedures and requirements.

Commenters asserted that Alternatives 5a or 5b would violate water right priority and would penalize water rights holders that have already implemented conservation and fish flow releases. Neither drought alternative proposes to shift responsibility for meeting flow requirements from junior rights holders to seniors. Both alternatives would expand the number of diverters obligated to meet the existing flow requirements for the 1995 Bay-Delta Plan objectives. This would not alleviate junior users from such responsibility. Alternative 5b would specify that all water users have an obligation to contribute toward meeting water quality and flow objectives. Under this alternative, all water right holders and claimants would be required to reduce their consumptive use of water by a specific percentage (e.g., 20 percent) to contribute toward instream flows under drought conditions. The flow contributions would be required to remain instream and would be unavailable for diversion by other users. By applying the conservation rule equally across all water rights, no junior water right holder would get any increased water from the reduced diversion by a senior water right diverter. This preserves the priority system but also would apply the public trust doctrine and reasonable use that applies to all water rights. The rule of water right priority is not absolute, nor is the State Water Board without power to act contrary to that rule in appropriate circumstances. (*El Dorado Irrigation Dist. v. State Water Resources Control Bd.*, *supra*, 142 Cal.App.4th at p. 965.)

Commenter Proposals

Multiple commenters proposed alternatives to the Plan amendments, asserting that these versions of the project should have been included in the Staff Report's range of alternatives. Under CEQA, a reasonable range of alternatives need not include proposals that fail to meet project objectives; are infeasible; or fail to reduce or avoid the project's significant impacts (Cal. Code Regs., tit. 14, § 15126.6, subd. (c)).

A reasonable range of alternatives also does not include proposals that are outside the scope of the project under analysis. For example, commenters suggested that water-use efficiency and/or alternative water supplies should be considered; these are actions that water users and other agencies may take in response to reduced Sacramento/Delta supply, not as a means of achieving objectives adopted in the Plan amendments. Mandating such actions is not part of the Bay-Delta Plan. Other commenters proposed broad policies such as increasing the cost of water to users or constructing projects such as desalination plants or multi-state water delivery systems, which are beyond the State Water Board's direct authority and thus infeasible.

Environmentally Superior Alternative

Several commenters suggested that the proposed VAs or another alternative is the environmentally superior alternative and therefore must be adopted.

CEQA requires a discussion of the environmentally superior alternative. "If the environmentally superior alternative is the 'no project' alternative, the [environmental document] shall also identify an environmentally superior alternative among the other alternatives." (Cal. Code Regs., § 15126.6, subd. (e)(2).) The designation of an environmentally superior alternative is strictly informational, and CEQA does not define "environmentally superior alternative," nor limit the factors that a lead agency may consider in selecting an environmentally superior alternative. (See *ibid.*)

Fundamentally, the Plan amendments are intended to improve aquatic habitat conditions in the Sacramento/Delta watershed from current impaired and declining conditions. Section 7.24.7, *Environmentally Superior Alternative*, provides information on the environmentally superior alternative based on the information contained in the 2023 draft Staff Report. It explains that the proposed Plan amendments would provide more environmental benefits than the other alternatives evaluated in the 2023 draft Staff Report. However, focusing on potential adverse environmental impacts related to hydrology and water supply, the proposed VAs could be viewed as the environmentally superior alternative, although the improvements in flows would be more limited than under the proposed Plan amendments. The proposed VAs also provide some environmental benefit through physical habitat restoration.

The revised proposed Plan amendments include a regulatory pathway based on the proposed Plan amendments with modifications and a VA pathway that includes implementation of the HRL commitments. With this combined project, they would provide the types of environmental benefits identified for both the proposed Plan amendments and the proposed VAs. The revised proposed Plan amendments would also reduce water supply impacts that would occur under the proposed Plan amendments at the outset of Plan implementation.

The regulatory pathway under the revised proposed Plan amendments provides a necessary backstop to HRL commitments. The VA pathway is being implemented in an experimental framework for a period of eight years. The State Water Board anticipates considering whether to continue, modify, or terminate the VAs after eight years. However, the State Water Board could also consider modifying or terminating the VA pathway before the eighth year if the VA pathway is not being fully implemented or does not provide reasonable protection of beneficial uses or will jeopardize the continued survival of native fishes. The backstop will help ensure that the environmental benefits of the revised proposed Plan amendments are realized under all of the scenarios.

For these reasons, the revised proposed Plan amendments are the environmentally superior alternative, even though the improvements in flows would be more limited than under the proposed Plan amendments at the outset of Plan implementation.

References Cited

^Buchanan, R.A., E. Buttermore, and J. Israel. 2021. Outmigration Survival of a Threatened Steelhead Population Through a Tidal Estuary. *Canadian Journal of Fisheries and Aquatic Sciences* 78: 1869-1886.

State Water Resources Control Board. 1994. Mono Lake Basin Water Right Decision 1631. September 28.
https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1631.pdf.