Master Response 2 Alternatives Description and Baseline

Overview

This master response addresses recurring commenter topics and themes and includes a description of the RDEIR/SDEIS-evaluated alternatives and any refinements made to the alternatives in the Final EIR/EIS (including Alternative 3 as the preferred alternative). Topics of discussion in this master response include but are not limited to:

- Merits of the Project and alternatives
- The adequacy of the Project description and alternatives description
- Alternative 3 and the Authority's proposed project and Reclamation's preferred alternative
- Identification of the environmentally superior alternative under CEQA and the environmentally preferable alternative under NEPA
- CEQA and NEPA purposes and use of the existing conditions baseline and the No Project Alternative/No Action Alternative and activities included or excluded
- The adequacy and timing of the completion of the NEPA and CEQA analysis
- Refinements to Project facilities that would make the Project more affordable for the Storage Partners
- Refinements to Project operations, including storage, releases, increase in bypass flow criteria at Wilkins Slough, and coordination with SWP and CVP and exchanges

This master response includes, for ease of reference, a table of contents on the following page to help guide readers in finding where the topics of their concern are addressed. The table of contents is based on general recurring and common themes found in the comments that were received.

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Merits of the Project and Alternatives

Many commenters used the RDEIR/SDEIS public review period to state opinions about the Project and alternatives. These comments encompassed a range of opinions, from support to opposition. Some of the commenters cited multiple reasons for opposing the Project and/or alternatives, and others expressed doubts regarding the economic feasibility or public benefits of the Project. These comments relate to the merits of the Project—not to potentially significant environmental impacts analyzed in the RDEIR/SDEIS. Comments expressing support or opposition of the Project are part of the administrative record to be considered by the decision makers.

As described in the Executive Summary, Sites Reservoir would be an offstream reservoir and would be used to capture water from major storms and store the water until it is most needed during dry periods. Multiple commenters expressed the opinion that there is no water available in the Sacramento River system to fill Sites Reservoir because in their opinion water rights have been overallocated or water right holders are often unable to receive their full allocation. However, the Project would only divert water during the time of the year when the Sacramento River is *not* fully appropriated, which is from September 1 to June 14. Further, the Project would only divert water when the Delta is in "excess conditions" as determined by Reclamation and California Department of Water Resources (DWR) and as defined in the 2018 Addendum to the Coordinated Operation Agreement. The term "excess conditions" identifies when there is water in the system in excess of the needs of the SWP and CVP. This term is not intended to imply that there is "excess water" or water is being wasted to the ocean. Finally, diversions to Sites Reservoir would only occur when there are flows available above those needed to meet applicable laws, regulations, biological opinions (BiOps), incidental take permits (ITPs), existing water rights, and court orders in place at the time of diversion. It should also be noted that the Authority's water right application was submitted to the State Water Resources Control Board (State Water Board) Division of Water Rights on May 11, 2022 (application number A025517X01) and included a water availability analysis that demonstrates that there is a reasonable expectation of water available for the Project.

Please see Master Response 3, *Hydrology and Hydrologic Modeling*, for the modeled representation of existing water in the system.

Adequacy of the Project and Alternatives Description

Some commenters expressed their opinions that the RDEIR/SDEIS violates CEQA and/or NEPA based on the claim that the document fails to use an accurate Project description because the overall Project design is not yet final, there is not enough detail about Project components, and major Project components that will have significant environmental impacts have not been designed or fully designed. Some commenters stated that the Project description was not stable or lacked consistency between the Draft EIR/EIS and RDEIR/SDEIS. In addition, some commenters expressed concern that the Project description is not accurate because the modeling of operations in the RDEIR/SDEIS, which is the basis for the analysis of potential environmental impacts throughout the document, did not include specific mitigation measures.

As represented in the Final EIR/EIS (and included in the RDEIR/SDEIS), the Authority and Reclamation prepared a project-level analysis of the construction and operation of the Project. The lead agencies will make the final decisions regarding the selection of an alternative (and, therefore, an operational scenario) based on the whole of the record, including the content of the Final EIR/EIS. To achieve project-level review in an EIR/EIS, generally referred to as "site-specific" review under NEPA, the document must include sufficient detail in both the Project description and the impact or effects analyses so that the environmental consequences of an action can be properly understood and evaluated by both the decision makers and the public. Both CEQA and NEPA contemplate that such review is necessarily limited by the "rule of reason" and by what can feasibly be achieved under the circumstances of a particular project or action.

The Project description and alternatives description and analysis for the Project fulfill the requirements for project-level review under CEQA and NEPA. Section 15124 of the CEQA Guidelines identifies the content to include in the project description and notes that the project description "should not supply extensive detail beyond that needed for evaluation and review of the environmental impact." The content that makes a complete project description as required by CEQA is as follows:

- The precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic; the location of the project shall also appear on a regional map.
- A statement of the objectives sought by the proposed project.
- A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals (if any) and supporting public service facilities.
- A statement briefly describing the intended uses of the EIR.

NEPA requires that the EIS have sufficient information to make a comparison between the alternatives (40 Code of Federal Regulations [C.F.R.] §§ 1502.12–23), including the following:

- The purpose and need to which the agency is responding.
- The proposed action and alternatives with sufficient detail to make a comparison of the impacts and merits.
- A description of the affected environment which is no longer than necessary to understand the effects of the alternatives.
- The environmental consequences of the proposed action and its reasonable alternatives with potential mitigation measures.
- Clear identification of what information is incomplete or unavailable.
- Cost-benefits analysis if relevant to the choice of the alternatives.

The EIR/EIS includes information and data on the location, design, schedule, and operation for all Project components for each of the alternatives evaluated based on the current level of design

detail. Where design detail was not available for facilities such as the transmission corridors and roads, broader corridors were used to capture the maximum envelope of impacts. This corridor approach also is intended to provide flexibility to avoid resources as the design is refined. Figures 1-1, 1-2, and 1-3 in Chapter 1, *Introduction*, show the regional vicinity and local vicinity of the Project. Each physical facility and operational component of the alternatives is described in Chapter 2, *Project Description and Alternatives*. Figures in Chapter 2 provide additional detail regarding facility footprints and depict the location and boundaries of Alternatives 1, 2, and 3. Chapter 2 also provides information regarding construction routes, operational criteria, and details that fully describe the alternatives. Chapter 1 provides the statement of objectives for the Project in Section 1.4, *CEQA Objectives and NEPA Purpose and Need*. Chapter 2 contains technical, economic, and environmental characteristics of Alternatives 1, 2, and 3, considering engineering proposals in multiple sections including, but not limited to, the following sections:

- Section 2.5, *Elements Common to Alternatives 1, 2, and 3*
  - Section 2.5.1, *Facilities*
  - Section 2.5.2, *Operations and Maintenance Common to Alternatives 1, 2, and 3*
  - Section 2.5.3, *Construction Considerations Common to Alternatives 1, 2, and 3*
  - Section 2.5.4, *Project Commitments and Best Management Practices*
- Section 2.6, *Alternative 1 Specific Elements*
- Section 2.7, *Alternative 2 Specific Elements*
- Section 2.8, *Alternative 3 Specific Elements*

In addition, the Authority and Reclamation prepared two complementary appendices to Chapter 2, which provide additional detail on the Project and alternatives. Appendix 2C, *Construction Means, Methods, and Assumptions*, is a 158-page appendix, including figures, containing engineering details and construction means, methods, and assumptions associated with each alternative. Appendix 2D, *Best Management Practices, Management Plans, and Technical Studies*, is an appendix describing BMPs, management plans, and technical studies to be implemented during construction and/or operations. BMPs included as integral components of the Project description are discussed in Appendix 2D and are incorporated by reference into the methods of analysis and impact analysis for each environmental topic as appropriate. In addition, multiple subsections in Chapter 2 (e.g., Section 2.5.1.7, *New and Existing Roadways*, and Section 2.5.1.3, *Administration/Operations and Maintenance/Storage Buildings*) discuss the supporting public service facilities that would be associated with the Project and are subsequently evaluated in the resource chapters. Therefore, Chapter 2 and Appendices 2C and 2D, as outlined above, provide sufficient detail regarding the Project for decision makers to understand the alternatives being evaluated.

Preferred Alternative and Environmentally Preferable Alternative

The EIR/EIS evaluates the potential environmental effects of the following:

- No Project Alternative.
- Alternative 1: 1.5-MAF reservoir, Terminal Regulating Reservoir (TRR) East, bridge, release to the CBD, and Reclamation investment of up to 7% of Project costs.
- Alternative 2: 1.3-MAF reservoir, TRR West, South Road, partial release to the CBD, discharge to the Sacramento River, and no Reclamation investment.
- Alternative 3: 1.5-MAF reservoir, bridge, TRR East, release to the CBD, and Reclamation investment of up to 25% of Project costs.

In September 2020, the Authority designated Alternative 1, based on VP-7 of the Sites Project Value Planning Alternatives Appraisal Report, as the Authority's preferred alternative for the purposes of the RDEIR/SDEIS analysis. Accordingly, Chapter 2, *Project Description and Alternatives*, of the RDEIR/SDEIS identified Alternative 1 as the preferred alternative. However, since the RDEIR/SDEIS, Reclamation and the Authority have worked together to make minor adjustments in the modeling of how Reclamation would utilize the water supplied to it from the Project. The modeling done to incorporate the Project refinements shows that these refinements do not result in additional impacts to those described in the RDEIR/SDEIS. These adjustments include the enhanced opportunity for cold-water pool management in Shasta Lake, enhanced frequency and amount of spring pulse flows in the upper Sacramento River, and better ability to maintain stable river flows in the upper Sacramento River in the fall. These adjustments work to improve the anadromous fish benefits of the Project, as demonstrated in the modeling results in Chapter 11, *Aquatic Biological Resources*, and in Appendix 11H, *Salmonid Population Modeling (SALMOD)*. In addition, in November 2021, Congress passed and the President signed the Infrastructure Investment and Jobs Act providing over $1 trillion in federal funding for infrastructure projects. This new law provides for a substantial increase in federal spending on infrastructure projects throughout the country. Considering both the additional anadromous fish benefits of the Project and the increased availability of federal funding for infrastructure projects, in March 2022 the Authority changed its preferred alternative to Alternative 3, which has the same physical Project facilities as Alternatives 1A and 1B, but would involve additional federal investment in the Project, at a range of between 7% and 25%.

CEQA directs a lead agency to identify an environmentally superior alternative from among the alternatives evaluated. The CEQA Guidelines (§ 15126.6 (e)(2)) require that if "the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." It should be noted that the identification of the preferred alternative is independent of the identification of the environmentally superior alternative and that CEQA does not require an agency to select the environmentally superior alternative (CEQA Guidelines §§ 15042 and 15043). Chapter 32, *Other Required Analyses*, includes a discussion of the Environmentally Superior/Environmentally Preferable Alternative. Chapter 32 of the Final EIR/EIS identifies the environmentally superior alternative.

NEPA does not require a preferred alternative to be identified in a Draft EIS, although the agency must identify a preferred alternative in the Final EIS (40 C.F.R. § 1502.12(e)). Consistent with the NEPA regulations, Reclamation's preferred alternative is Alternative 3. In addition, the NEPA regulations require the identification of one or more "environmentally preferable"

alternatives. Consistent with the NEPA regulations, Reclamation will identify the environmentally preferable alternative in the Record of Decision (40 C.F.R. § 1505.2(b)).

Baseline Existing Conditions/No Project Alternative/No Action Alternative

Some commentors expressed concern that the baseline existing conditions in the RDEIR/SDEIS were not accurate. Chapter 3, *Environmental Analysis*, Section 3.2.1, *Existing Conditions and No Project Alternative/No Action Alternative*, describes the baseline existing conditions and the No Project Alternative/No Action Alternative used in the EIR/EIS.

CEQA's Definition of Environmental Baseline and the No Project Alternative

Under CEQA, the lead agency assesses the significance of the impacts of a proposed project by comparing those impacts against the environmental baseline, which generally consists of the physical conditions that exist at the time a Notice of Preparation (NOP) is published for an EIR. As discussed in Chapter 3, where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture of a project's impacts, the environmental baseline may be defined by referencing historical conditions or conditions that are expected to occur when the project commences its operations. In defining the baseline, the goal is "to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts" (CEQA Guidelines § 15125, subd. (a)). The RDEIR/SDEIS and Final EIR/EIS use existing conditions in 2020 to define the CEQA environmental baseline. This 2020 environmental baseline reflects a range of historical hydrologic conditions (e.g., watershed runoff); current physical conditions (e.g., dams); current regulatory operating conditions of the CVP and the SWP; the water rights orders and decisions and water quality criteria from the State Water Board; current municipal, environmental, and agricultural water uses; current land uses; and relevant current laws, regulations, plans, and policies.

In addition to defining the environmental baseline, CEQA requires analysis of the No Project Alternative, which represents existing environmental conditions and what would be reasonably expected to occur in the foreseeable future if the Project were not implemented. Because the existing conditions present in the 2020 environmental baseline are assumed to continue, the No Project Alternative is assumed to be the same except for climate conditions as a result of climate change, as described in detail in Chapter 28, *Climate Change*.

NEPA's Definition of the No Action Alternative

NEPA has no baseline requirement, but it requires analysis of the No Action Alternative. "No action" represents a projection of current conditions and reasonably foreseeable actions to the most reasonable future responses or conditions that could occur during the life of the project without any action alternatives being implemented, including the continuation of preexisting and ongoing plans, programs, and operations. The No Action Alternative should not automatically be considered the same as the existing condition of the affected environment because reasonably foreseeable future actions may occur whether or not any of the project action alternatives are

chosen. When the No Action Alternative is different from the existing condition, as projected into the future, the differences should be clearly defined.

Commonalities and Assumptions of the No Project Alternative, No Action Alternative, and Environmental Baseline

The No Project Alternative under CEQA and the No Action Alternative under NEPA are used to compare conditions without the Project to conditions with the Project. This comparison between the No Project Alternative/No Action Alternative and the Project/Action Alternatives provides decision makers an understanding of the environmental effects of the Project/Action Alternative and what could happen in the absence of approving a project. The Authority and Reclamation utilized the latest publicly available information available and modeling to represent the 2020 CEQA environmental baseline, No Project Alternative/No Action Alternative, and the Project.

The reasonably foreseeable future conditions under the No Project Alternative/No Action Alternative would not be materially different from the conditions under the 2020 CEQA environmental baseline, except for climate change effects, which are discussed further below and are described at length in Chapter 28, *Climate Change*, of this Final EIR/EIS. This is because the existing, ongoing plans and programs that serve as the basis for the environmental baseline would reasonably be anticipated to continue to be implemented into the future. This includes the ROC on LTO BiOps issued on October 21, 2019, by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) for the Reinitiation of Consultation on the Coordinated Long-Term Operations of the CVP and SWP (National Marine Fisheries Service 2019, U.S. Fish and Wildlife Service 2019); Reclamation's February 18, 2020, ROD based on those BiOps (Bureau of Reclamation 2020); and DWR's March 31, 2020, ITP for the Long-Term Operation of the SWP (California Department of Fish and Wildlife 2020). These have all established new regulatory requirements that govern water supply operations and delivery in California. These requirements have been incorporated into the environmental baseline in order to present the most accurate and up-to-date picture of how the Project, if approved and implemented, would affect water supply, water quality, and fisheries conditions. These new requirements are also reasonably anticipated to continue into the future, such as the initiation of the consultation of the USFWS and NMFS 2019 BiOps for the long-term operations of the CVP (U.S. Fish and Wildlife Service 2019, National Marine Fisheries Service 2019), and it is not reasonably foreseeable at this juncture to speculate about what future requirements, if any, might be adopted in their place and, if so, when.

The 2020 CEQA environmental baseline includes the regulatory framework and implementation of State Water Board Water Right Decision 1641 and Water Right Order 90-5 and the use of allocated water supplies based on the existing regulatory framework. As described in Chapter 3, *Environmental Analysis*, the water supplied to a service area, as identified by water rights and contracts, is represented in the CALSIM II model. The difference between the existing conditions and the No Project Alternative assumed water demand is minimal in most areas because the existing conditions assumptions in CALSIM II included full use of most CVP and SWP contract amounts for most agricultural users and full use of most CVP and SWP municipal and industrial users that divert water from the Delta when allowed by hydrological conditions. As a result, the CALSIM II model seeks to meet as much of the user demand as possible, up to their contract amounts, and considering hydrologic conditions and regulations. To see changes

between the existing conditions and the No Project Alternative, there would need to be a new large water right, a water right change, or a new water supply contract. The Authority and Reclamation are not aware of any new large water right, water right change, or new water supply contract in process. For these reasons, the environmental baseline and the No Project Alternative would not be materially different. More information about the modeling assumptions and specifications are available in the following appendices:

- Appendix 5A1, *Model Assumptions*
- Appendix 5A5, *CALSIM II Model Delivery Specifications*

In addition, Chapter 5, *Surface Water Resources*, Section 5.4.1.2, *Summary of Water Supply Delivery Results*, and Tables 5-30 and 5-31 describe the modeled water deliveries and supplies. For information regarding how the baseline existing conditions are represented in the modeling, please see Master Response 3, *Hydrology and Hydrologic Modeling*.

The 2020 CEQA environmental baseline, No Project Alternative, and No Action Alternative all reflect the same range of historical hydrologic conditions; current physical conditions; current regulatory operating conditions of the CVP and the SWP; the water rights orders and decisions and water quality criteria from the State Water Board; current municipal, environmental, and agricultural water uses; current land uses; and relevant current laws, regulations, plans, and policies. As a result, the 2020 CEQA environmental baseline, No Project Alternative, and No Action Alternative all represent the same existing conditions for the purpose of determining the impact of the Project. Climate change is not included in the No Project Alternative, as described in the following section.

For the sake of clarity and conciseness, "No Project Alternative" is used to represent the No Project Alternative/No Action Alternative and 2020 CEQA environmental baseline in the Final EIR/EIS. There may be instances where the "No Action Alternative" or "NAA" may have been retained but do not indicate any difference in the conditions represented.

Why Climate Change Is Analyzed Separately from the No Project Alternative

As described in Chapter 28, *Climate Change*, climate change is not evaluated as part of the No Project Alternative, but rather as separate evaluations and modeling runs contained in Chapter 28. The evaluation of climate change is consistent with the CEQ guidance *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* released on August 5, 2016 (Council on Environmental Quality 2016), and with CEQA (14 Calif. Code Regs., § 15064.4). Consistent with this guidance, Chapter 28 does the following:

- Shows effects of climate change in isolation to allow for analysis of future climate change effects on the Project using two climate change scenarios (i.e., 2035 CT and WSIP 2070).
- Compares flow and volume indicators of Project performance under scenarios with and without climate change (Chapter 28, Section 28.4, *Surface Water Resources, the Project,*

and Climate Change) and uses the differences to analyze changes in Project performance with a future changing climate.

- Describes key climate impacts on study area resources and discusses how the Project could help mitigate those impacts.

The EIR/EIS analyzes climate change impacts on resources and the Project performance with climate change for all relevant resource areas in the resource chapters.

Long-Term Operation of the CVP and SWP—Biological Opinions and Incidental Take Permit

Some commenters stated the baseline is inaccurate or inadequate because it includes the USFWS- and NMFS-issued 2019 BiOps for the long-term operations of the CVP, which are subject to reinitiation of consultation pursuant to 50 C.F.R. Section 402.16 and are being litigated in U.S. District Court and/or the California Department of Fish and Wildlife (CDFW)-issued ITP related to the operations of the SWP. In September 2021, Reclamation requested reinitiation of consultation with USFWS and NMFS to assess the effects of anticipated modifications to the CVP operations that may cause effects to listed species or designated critical habitats not analyzed in the USFWS and NMFS BiOps dated October 21, 2019. To address the review of agency actions required by Executive Order 13990 and to voluntarily reconcile CVP operating criteria with operational requirements of the SWP under the California Endangered Species Act (CESA), Reclamation and DWR anticipate proposals to modify CVP and SWP operations and associated biological effects analyses that would result in new BiOps for the CVP and a new ITP for the SWP. Until the new BiOps and NEPA requirements are completed, the CVP will continue to operate pursuant to the ROD as modified by temporary interim measures, as required by ongoing drought conditions or as ordered in conjunction with any ongoing litigation. Federal defendants and the State of California (State) requested an interim operations plan through September 30, 2022, which the U.S. District Court granted. Federal defendants and the State then requested an extension of the interim operations plan with minor modifications, which the Court granted. The current extension of the interim operations plan is temporary and expires on December 31, 2023.

Any resolution of the pending litigation on the 2019 BiOps and how it may affect the Project is speculative. Reinitiation of consultation by Reclamation for the long-term operations of the CVP and the new ITP for the SWP long-term operations may result in modifications to CVP/SWP operations in the future. The Authority and Reclamation have used the most current decisions regarding operations of the CVP and SWP for the 2020 environmental baseline and for the reasonably foreseeable future conditions.

CALSIM II has been consistently utilized for evaluating long-term planning efforts for the CVP and SWP. The most recent planning documents for CVP and SWP operations (2019 USFWS and NMFS BiOps and 2020 SWP ITP, respectively) relied on CALSIM II for the analysis (National Marine Fisheries Service 2019, California Department of Fish and Wildlife 2020).

When the Notice of Preparation was published for the RDEIR/SDEIS (2017) and, in 2020, when the modeling analysis was conducted for the RDEIR/SDEIS, CALSIM II was the only systems operation model that was jointly supported by DWR and Reclamation. As such, at the time of

analysis, CALSIM II was the best tool available to evaluate Sites operations in the CVP and SWP systems. Since publication of the RDEIR/SDEIS, a jointly supported CALSIM 3 model has become available. For a discussion of the selection of CALSIM II and the modeling assumptions and baseline, please refer to Chapter 3, *Environmental Analysis.* The Authority intends to develop a CALSIM 3 model with Sites operations for future use and to support permitting and long-term operations, but it will take a substantial amount of time and effort to integrate the Project into the new CALSIM 3 model, and it is not feasible to do so for this EIR/EIS.

Bay-Delta Water Quality Control Plan and Updates

The No Project Alternative cannot include the 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (Bay Delta Plan) (State Water Resources Control Board 2006, 2018), revised water quality objectives, and reservoir operations cannot be modeled to meet the revised water quality objectives, because the State Water Board does not intend to complete the Bay-Delta Plan until 2025, and the associated modeling has not been released. Several subsections in Master Response 1, *CEQA and NEPA Process, Regulatory Requirements, and General Comments*, describe the status and relationship of multiple external processes related to the Bay-Delta Plan updates. Given that the Bay-Delta water quality objectives and criteria are still under development and are not expected to be finalized for several years, and the outcome of the multiphased process is presently uncertain, the inclusion of future projections of the Bay-Delta Plan updates, framework, and voluntary agreements would be speculative. Potential implementation of the Bay-Delta Plan and voluntary agreements are considered in Chapter 31, *Cumulative Impacts*. Furthermore, the Project would not be solely responsible for implementing the revised water quality objectives, as it is assumed the revised water quality objectives would be implemented on a Sacramento River watershed-wide level. The Project cannot assign implementation of the water quality objectives to other water rights holders in the Sacramento River watershed. The State Water Board is the agency with the authority to condition water rights and may choose to do so to implement revised water quality objectives. The Bay-Delta Plan is discussed in Chapter 31, *Cumulative Impacts*, of the Final EIR/EIS.

Adequacy of the Impact Analysis

Multiple commenters stated that the RDEIR/SDEIS is inadequate without providing supporting evidence or pointing to significant environmental impacts or specific deficiencies in the RDEIR/SDEIS analysis. Commenters also asked that the RDEIR/SDEIS be “withdrawn,” stating generally that the RDEIR/SDEIS is inadequate without providing a legal basis for formally withdrawing the NOP/NOI.

Under CEQA, the adequacy of the RDEIR/SDEIS findings and conclusions is governed by the substantial evidence standard. “Substantial evidence” means “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.” (14 Calif. Code Regs., § 15384, subd. (a).) Substantial evidence includes facts, reasonable assumptions based on facts, and expert opinion supported by facts. (14 Calif. Code Regs., § 15064, subd. (f)(5)(6).) It does not include argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, evidence that is not credible, or evidence of economic or social impacts

that do not contribute to or are not caused by physical impacts. *Ibid.* The RDEIR/SDEIS is supported by substantial evidence in the record, and specific and supported comments alleging otherwise are addressed either individually or in other master responses.

Under NEPA, the adequacy of the effects analysis in the RDEIR/SDEIS is determined through consideration of the purpose and focus of an EIS. A purpose of an EIS is to inform decision makers and the public of the impacts resulting from implementing the proposed action and alternatives (40 C.F.R. § 1500.1). The focus of the EIS is to disclose the significant impacts of the proposed action and alternatives with less attention given to impacts found to be minor or inconsequential (40 C.F.R. § 1502.1). The impact analysis provided in the RDEIR/SDEIS was based on a wide range of information sources that are typically compiled and evaluated for water-based projects similar to the scope and complexity of the Project. This approach included considering the assessment methods and conclusions contained in other environmental compliance documents similar to the RDEIR/SDEIS, including prior NEPA analyses; compiling, reviewing, and applying information contained in a broad range of sources including scientific literature and other studies; and considering information available from other federal, state, and local agencies. Once compiled, this information was then considered as part of the overall assessment methodology for each resource considered in the RDEIR/SDEIS. Therefore, the effects analysis in the RDEIR/SDEIS is consistent with NEPA.

The Authority and Reclamation have prepared the Final EIR/EIS based on the information contained herein, including Volume 3, *Responses to Comments*. Chapter 3, *Environmental Analysis*, describes how the environmental impact analysis was conducted. The impact analyses contained in this document meet the requirements of CEQA and NEPA because they fully disclose the potentially significant impacts and substantial adverse effects, respectively, of the alternatives, including the preferred alternative, and the proposed mitigation measures. The Final EIR/EIS evaluates over 115 potential impacts (e.g., Impact HYDRO-1) resulting from Project construction or operation on over 25 resource topics (e.g., surface water resources).

Each resource chapter (i.e., Chapters 5 through 30) contains an introduction, existing conditions/setting section, methodology describing the qualitative and/or quantitative methods and significance thresholds used to evaluate impacts, and the impact analysis comparing the potential effects of the alternatives to No Project Alternative/No Action Alternative as required by CEQA and/or NEPA. The Final EIR/EIS includes multiple summary tables, including Table ES-2 in the Executive Summary. The introductions of the resource chapters include summary tables of impacts and mitigation measures for Project construction and operations impacts and provide decision makers with information that enables them to consider the environmental consequences of each alternative (14 Calif. Code Regs., § 15151 and 40 C.F.R. § 1502.16).

For CEQA purposes, a discussion of the environmentally superior alternative is contained in Chapter 32, *Other Required Analyses*, based on the analyses contained in the resource chapters. Pursuant to 40 C.F.R. Section 1505.2(b) of the CEQ regulations, Reclamation will identify the environmentally preferable alternative in the ROD.

The degree of specificity in Chapters 5 through 31 corresponds to that involved in the underlying activities of each alternative, which are described in Chapter 2, *Project Description and*

Alternatives; Appendix 2C, *Construction Means, Methods, and Assumptions*; and Appendix 2D, *Best Management Practices, Management Plans, and Technical Studies* (14 Calif. Code Regs., § 15146 and 40 C.F.R. § 1502.2). In establishing standards of adequacy for an EIR, the courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure (14 Calif. Code Regs., § 15151). NEPA contains similar standards, including using high-quality information and accurate scientific analysis while concentrating on the issues that are truly significant to the action in question, rather than amassing needless detail (40 C.F.R. § 1500.1(b)).

Some commenters stated that the impact analysis in the RDEIR/SDEIS is not accurate because the modeling of operations in the RDEIR/SDEIS did not include specific mitigation measures. As required by CEQA and NEPA, significant environmental effects of the Project are disclosed in the RDEIR/SDEIS, and, where appropriate, mitigation measures are identified. The impact analysis of the Project compares the impacts from the Project alternatives, including mitigation measures, to the 2020 CEQA baseline and No Project Alternative. The affected environment and the environmental impacts of the Project are described in the EIR/EIS from Chapters 5 to 32. The impact analyses in these chapters evaluate potential direct and indirect impacts of the Project and are used to provide a comparison between the alternatives and the No Project Alternative.

Use and Incorporation of Mitigation Measures

Multiple commenters expressed general dissatisfaction with the proposed mitigation; they suggested that it was insufficient to make up for the severity of the potential impacts. The concept of mitigation as defined by CEQA does not equate to general compensation to make an agency, individual, or entity whole as a result of an approval of a project. Furthermore, the concept of mitigation under NEPA, as described in the CEQ regulations, is folded into the stated policy of NEPA: "Federal agencies shall to the fullest extent possible use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment and use all practicable means, consistent with the requirements of [NEPA] and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment" (40 C.F.R. § 1500.2). Mitigation under CEQA is focused on avoiding or mitigating significant effects on the environment, which means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project. (14 Calif. Code Regs., §§ 15126.2, 15126.4, and 15382.) Accordingly, the CEQA Guidelines define mitigation as including the following: (14 Calif. Code Regs., § 15369.5.)

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by providing substitute resources or environments.

Under CEQA, the need for mitigation measures arises out of the substantive policy of CEQA that public agencies should not approve preferred alternatives that would cause significant environmental impacts without first adopting any feasible mitigation measures and considering any feasible alternatives that would substantially lessen such significant effects. (Public Resources Code 21002, 21081; 14 Calif. Code Regs., §§ 15002, subd. (a)(3), 15021, subd. (a)(2).) This can be met through the adoption of feasible mitigation measures, the approval of a feasible alternative other than the preferred alternative, or a combination. The key is the feasibility of both the mitigation measures and alternatives. As such, in formulating mitigation measures, the lead agency must be cognizant of any limitations on its own regulatory powers or those of other agencies with potential mitigation responsibilities.

As described in Chapter 3, *Environmental Analysis*, mitigation measures are proposed, where feasible, to avoid, minimize, rectify, reduce, or compensate for significant and potentially significant impacts of the alternatives, in accordance with Section 15126.4 of the CEQA Guidelines and NEPA regulations (40 C.F.R. § 1508.20). When "potentially significant" impacts (CEQA) or "adverse" or "substantial adverse" effects (NEPA) were identified in the RDEIR/SDEIS, feasible mitigation measures were formulated to eliminate or reduce the intensity of the impacts and focus on the protection of sensitive resources.

Under CEQA, the effectiveness of a mitigation measure was subsequently determined by evaluating the impact remaining after the application of the mitigation and reaching one of two conclusions: (1) the mitigation reduced the impact to a less-than-significant level, or (2) no feasible mitigation exists to reduce the impact to a less-than-significant level, and, therefore, the impact was determined to be significant and unavoidable. No mitigation measures were needed or proposed when an impact was determined to be less than significant. Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance.

Consistent with the description of mitigation measures in Chapter 3, *Environmental Analysis*, although NEPA does not impose a substantive obligation on federal agencies to adopt mitigation, analyzing proposed mitigation is consistent with NEPA's intent that mitigation be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated. As described in the CEQ regulations, federal agencies can use mitigation to reduce the potential adverse environmental effects of their actions in several ways. As per 40 C.F.R. Section 1508.20, mitigation includes the following:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures were not proposed when an effect was concluded to have no adverse effect. The mitigation measures are identified within each resource chapter (Chapters 5 through 30) and are presented in Table ES-2 in the Executive Summary. Implementation of these mitigation measures will be required by the Authority as a condition of Project approval. When the CEQA lead agency requires implementation of mitigation as a condition of approval, it is required to adopt a mitigation monitoring or reporting program when it prepares its findings on significant impacts identified in an EIR. Such a program must address how it will monitor all of the mitigation measures that were adopted or made conditions of project approval (CEQA Guidelines § 15097). The Authority will adopt a mitigation monitoring and reporting program (MMRP) as part of its CEQA findings at Project approval and will implement this MMRP to ensure that the mitigation measures are implemented.

Mitigation measures can be incorporated into the Project, eliminating the mitigation measure but retaining the substance of the requirement. For example, Mitigation Measure FISH-2.1 was required to reduce potential life stage effects on salmonids by increasing the bypass flow requirement at Wilkins Slough based on peer-reviewed scientific information. As described further in the *Minimum Bypass Flows in the Sacramento River at Wilkins Slough* section of this master response, the Final EIR/EIS Project description now incorporates the requirements of Mitigation Measure FISH-2.1, which have been refined and made more restrictive. The bypass flow requirement at Wilkins Slough has been incorporated as an element of the Project because it has been developed as an integral component of how the Project is proposed to operate in terms of its water diversion criteria, rather than as a separate measure that is applied distinctly from the Project operations and its diversion criteria. The modeling performed for the Final EIR/EIS also includes the increased bypass flow requirement, and the analysis in Chapter 11, *Aquatic Biological Resources*, has been updated to reflect the inclusion of the increased bypass flow requirement. Overall, this eliminates the need for Mitigation Measure FISH-2.1 as mitigation in the Final EIR/EIS.

Timing of CEQA and NEPA Analyses and Lead Agency Decisions

Both NEPA and CEQA require environmental review be completed early in the planning process. For example, under CEQA, an EIR "should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design" (CEQA Guidelines, § 15004, subd. (b)). Similarly, under NEPA, an agency is required to evaluate the consequences of its action at an early stage in the project's planning process. According to the CEQ NEPA regulations, "[a]gencies shall integrate the NEPA process with other planning at the earliest possible time to ensure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts" (40 C.F.R. § 1501.2). NEPA allows selection of alternatives with incomplete or unavailable information if the information cannot be obtained (40 C.F.R. § 1502.21). Therefore, project-specific review can be completed at the earliest possible stage that the environmental impacts of a project can be meaningfully evaluated.

The public review process for the RDEIR/SDEIS provided an opportunity for formal public comment on the Project and Project alternatives. Comments received on the RDEIR/SDEIS have

resulted in further refinement of the Project and alternatives. All comments received on the RDEIR/SDEIS are considered in the decision-making process to fine-tune the original Project to further meet the lead agencies' goals and objectives and purpose and need and to continue to further avoid, reduce, or minimize the Project's potentially significant adverse impacts/effects. This evolving process is the intent of CEQA and NEPA.

A greater level of detail for the Project description is not necessary for the lead agencies, decision makers, or the public to reasonably consider and understand the environmental impacts of the Project and is not feasible for inclusion before the selection of an alternative is required. Design engineering for the Project proceeds along routine and regimented percent complete milestones in order to meet professional engineering standards and requirements, such that design can be certified complete. The Project's current design is between 10% and 30% complete. As noted above, where design detail was not available for facilities such as the transmission corridors and roads, broader corridors were used to capture the maximum envelope of impacts. This corridor approach also is intended to provide flexibility to avoid resources as the design is refined. Engineering details are being developed, but these design details do not provide additional information necessary for the decision maker to reasonably consider the Project and compare the impacts and merits of the alternatives.

Timing of U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife Decisions

The USFWS and NMFS have authority under the federal Endangered Species Act to determine whether the Project meets the regulatory standard of Section 7, and the CDFW, a CEQA responsible agency, has authority to determine if the Project meets the regulatory standards of CESA for the Authority's purposes. These regulatory agencies will exercise their authority for an independent permitting decision regarding the Project.

Potential Future CEQA and NEPA Compliance Actions

As final design of the Project is completed, it is possible that additional changes may occur after certification of the EIR and issuance of a ROD through the permitting process and post-permitting process, which may result in additional CEQA and/or NEPA compliance needs. CEQA and NEPA both allow for modifications to a project after the lead agency has approved a project. CEQA allows for such modifications through the consideration of addenda to an EIR, supplemental EIRs, or subsequent EIRs, depending on the type of modification to the project and potential environmental impacts (CEQA Guidelines §§ 15162, 15163, and 15164). Under NEPA, supplemental environmental assessments or EISs may be prepared if the lead agency makes substantial changes to the proposed action that are relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts (40 C.F.R. § 1502.9(d)). The possibility for future CEQA and/or NEPA compliance does not conflict with publication of the RDEIR/SDEIS or Final EIR/EIS.

Refinements to Project Facilities

This section describes refinements to Project facilities made as part of the design process. The section identifies why the refinements were made and the resource-related details regarding each of those refinements. If changes are needed in a specific resource chapter, they can be found within Volume 1 of the Final EIR/EIS.

Removal of Emergency Release Structures

Two emergency release structures have been eliminated from Alternatives 1 and 3: Emergency Release Structure 1 located adjacent to Saddle Dam 3 and Emergency Release Structure 2 located adjacent to Saddle Dam 5, which are identified and described in Chapter 2, *Project Description and Alternatives*, of the RDEIR/SDEIS and evaluated in the resource chapters. Alternative 2 as described and evaluated in the RDEIR/SDEIS does not include these emergency release structures.

As described in Chapter 2, *Project Description and Alternatives*, Section 2.5.2, *Operations and Maintenance Common to Alternatives 1, 2, and 3*, under *Emergency Release,* Sites Reservoir would be designed to meet DSOD requirements, including the following:

- Ability to reduce the depth of water in the reservoir by 10% of the reservoir depth within 7 days. Reservoir depth is defined as the elevation difference between the maximum normal operating water surface elevation (WSE) and the top of dead pool elevation.
- Ability to drain the reservoir to dead pool within 90–120 days.

Under all alternatives, the reservoir would be designed to release emergency drawdown flows into Stone Corral Creek and Funks Creek.

Removal of the two emergency release structures would generally eliminate emergency drawdown release flows in Hunters Creek and downstream agricultural lands. Emergency drawdown releases for all alternatives would be primarily through Sites Dam and Stone Corral Creek and the I/O Works to Funks Reservoir and TRR East. Only an emergency spill from overtopping Saddle Dam 8B would affect Hunters Creek and downstream lands.

Chapter 2, *Project Description and Alternatives*, of the RDEIR/SDEIS describes the reservoir spillway at Saddle Dam 8B. The length of the spillway crest section would be determined from flood routing analyses. The crest elevation would be based on the size of the reservoir and normal operating WSE. The crest elevation would allow storage of the probable maximum flood (PMF) without spilling and have a sufficient capacity to enable controlled emergency spill release to Hunters Creek if needed. Pending approval from DSOD, the size of the spillway would accommodate the peak outflow of a PMF event or the steady-state flow if an over-pumping event occurred, both estimated to produce flows of approximately 3,900 cubic feet per second (cfs). The design and size of the spillway were developed with the assumption that a PMF overflow event and an over-pumping event have a very low probability of occurring simultaneously.

As described in Chapter 5, *Surface Water Resources*, Section 5.6, *Impact Analysis and Mitigation Measures*, Sites Reservoir, as an offstream reservoir, will receive very little inflow

from local creeks and would instead be filled by controlled diversions from the Sacramento River. Conditions that would require emergency spill releases would only have the potential to occur during years of very heavy precipitation when Sites Reservoir is already at capacity, and a localized storm in Sites Reservoir watershed creates a significant rise in the reservoir's WSE. The probability of an event requiring such an emergency release remains very small because inflow is controlled through pumping. Diversions to Sites Reservoir would not occur once the reservoir reaches a stage that is near capacity, and additional precipitation events are forecasted to occur. Further, should water diversions continue in a highly unlikely scenario, the Authority would be able to prepare for any necessary flood warnings to the public downstream of the reservoir (BMP-25, *Preparation of an Emergency Action Plan for Reservoir Operations*, in Table 2D-1 in Appendix 2D, *Best Management Practices, Management Plans, and Technical Studies*). Finally, the drainage area contributing to Sites Reservoir is considered low elevation and therefore rarely contains accumulating snow during the winter. Thus, there is no potential for additional water volume from snowmelt or rain-on-snow hydrological events. In the rare case that over-pumping occurred for more than 10 days, as described in Chapters 2 and 5, it would be released as described above.

Elimination of the Saddle Dam 3 and 5 emergency release structures from Alternatives 1 and 3 results in cost savings to the overall Project. There would be no material change to impact determinations made in the RDEIR/SDEIS as a result of this Project modification and a potential reduction in some impacts, as described below.

Resource-Related Details

Most of the construction methods and impacts described in the RDEIR/SDEIS would remain the same or be slightly reduced for Alternatives 1 and 3 without the two emergency release structures. Construction means, methods, and impacts would be more similar to those described for Alternative 2 evaluated in the RDEIR/SDEIS. For example, less materials (e.g., concrete) would be needed and fewer trips would be required if these two structures are not built. This is because the materials would no longer be needed. Less materials and fewer trips would result in a decrease in construction-related impacts disclosed in the RDEIR/SDEIS for Alternative 1 or 3, such as for air quality, greenhouse gases (GHG), and traffic.

Temporary disturbance footprints would be slightly reduced in areas where there is no overlap with other activities or disturbance as compared to the evaluation of Alternatives 1 and 3 in the RDEIR/SDEIS. It is estimated the reduction in temporary acres disturbed would be approximately 18 acres, primarily in annual grasslands. Permanent disturbance footprints would also be reduced in areas that have no overlap with other structures because the two structures would not be built. It is estimated the reduction in permanent acres disturbed would be approximately 10 acres, primarily in annual grasslands. Therefore, a reduction in temporary and permanent disturbance would result in a decrease in construction- and operations-related impacts disclosed in the RDEIR/SDEIS for Alternative 1 or 3 related to vegetation, wetlands, wildlife, and agriculture.

As described for Alternative 2 in Chapter 5, *Surface Water Resources*, Section 5.6, *Impact Analysis and Mitigation Measures*, the reservoir would be designed to release flows into Hunters Creek, Stone Corral Creek, and Funks Creek, but not through Saddle Dams 3 and 5. The

potential emergency drawdown releases in the vicinity of Saddle Dams 3 and 5 to Hunters Creek Fork (1,100 cfs from Saddle Dam 3 and 1,100 cfs from Saddle Dam 5) would be eliminated from Alternatives 1 and 3. Spills from Saddle Dam 8B would be the only release to Hunters Creek. Removal of the structures would generally avoid flooding impacts in Hunters Creek associated with emergency drawdowns that were described in Chapter 5 and would decrease Project operations and maintenance costs, while still meeting DSOD requirements.

Emergency spill flow due to PMF or over-pumping at Saddle Dam 8B could still cause flooding impacts in Hunters Creek, albeit the likelihood of such an event is low (as disclosed previously in the RDEIR/SDEIS). The emergency spill flows in Hunters Creek from the overtopping of Saddle Dam 8B at the PMF or maximum Project diversion (3,900 cfs) would be just over the 1-in-200-year flood event of 3,850 cfs (U.S. Geological Survey 2022).

In Stone Corral Creek, emergency drawdown release flows would increase under Alternatives 1 and 3 as compared to what was described and evaluated in the RDEIR/SDEIS. Resulting flows in Stone Corral Creek would be approximately 4,700 cfs (2,500 cfs from Sites Dam as described in the RDEIR/SDEIS and an additional 2,200 cfs release through Sites Dam to Stone Corral Creek to compensate for the removal of the Saddle Dam 3 and 5 emergency drawdown structures). This is greater than the 2,500 cfs identified in the RDEIR/SDEIS, but still below the 100-year discharge for Stone Corral Creek of 7,870 cfs in the No Project Alternative. Previously, the emergency drawdown flows in Stone Corral Creek were 2,500 cfs, which is between the 2-year flood event of 1,840 cfs and the 5-year flood event of 3,160 cfs (U.S. Geological Survey 2021). Removal of the emergency drawdown structures at Saddle Dams 3 and 5 would increase the emergency drawdown release flows in Stone Corral Creek to approximately 4,700 cfs, which is closer to the 25-year event of approximately 5,000 cfs and less than the 100-year discharge of 7,870 cfs (U.S. Geological Survey 2021) that exist with the No Project Alternative. The Project continues to provide a flood protection benefit for the areas downstream of Sites Reservoir (specifically on the floodplains of Stone Corral Creek where flooding has historically occurred) with the removal of the emergency release structures. As an offstream reservoir, Sites Reservoir would be filled by controlled diversions from the Sacramento River and would receive relatively little inflow from the local creeks. By the time the rainy season begins (i.e., when a 100-year flood could occur), Sites Reservoir would have more than enough capacity to handle typical storm events from the local creeks, even at full operating capacity. Emergency spill releases would only have the potential to occur during years of very heavy precipitation when Sites Reservoir is already at capacity, and a localized storm in the Sites Reservoir watershed creates a significant rise in the reservoir's WSE. The probability of an event requiring emergency spills remains very small without the emergency release structures because inflow is controlled through pumping. Diversions to Sites Reservoir would not occur once the reservoir reaches a stage that is near capacity, and additional precipitation events are forecasted to occur.

The removal of the emergency release structures would not result in a change to the evaluations or impact conclusions contained in the RDEIR/SDEIS related to the following resources: surface water quality, groundwater quality, vegetation and wetlands, wildlife, aquatic biological resources, geology and soils, minerals, land use, recreation, energy, transportation and navigation, noise, cultural resources, Tribal cultural resources, visual resources, population and housing, public services, hazards and wildfire, and climate change. The removal would reduce

the overall footprint and reduce construction-related activities because the structures would not be constructed, and the reservoir would continue to manage emergency releases under Project conditions per DSOD requirements and continue to provide flood protection benefits to the areas downstream. Therefore, the removal of emergency release structures from the Project description does not result in new impacts requiring additional analysis.

Sloped I/O Tower

The vertical, free-standing I/O tower evaluated in the RDEIR/SDEIS for Alternatives 1, 2, and 3 has been redesigned as a sloped I/O tower. The sloped I/O tower would be supported by the reservoir slope for all alternatives. The purpose of the I/O tower is to allow flows into and out of the reservoir through the use of ports around the tower's perimeter. The number and elevation of ports and the gates would be the same as what was described for the vertical I/O tower in Chapter 2, *Project Description and Alternatives*. The ports, gates, or valves allow for operational flexibility, including managing the temperature and quality of water released from the reservoir. The sloped I/O tower would also have movable fish screens for the exclusion of adult fish similar to that of the vertical I/O tower. Construction means and methods of the sloped I/O tower would be similar to the vertical I/O tower (see Chapter 2, Section 2.5.1.4, *Sites Reservoir and Related Facilities*, under *Inlet/Outlet Works*). However, the sloped I/O tower would eliminate the need for significant seismic reinforcement and therefore provide cost savings. There would not be a measurable change in the size or location of the I/O tower footprint.

Resource-Related Details

The sloped I/O tower would be located in the inundation area and in the same location as the vertical I/O tower evaluated in RDEIR/SDEIS Chapter 2, *Project Description and Alternatives*, Figures 2-24 and 2-25. Therefore, there would be no changes in acres temporarily disturbed or permanently disturbed by the construction or operation of the sloped I/O tower as disclosed in Chapters 5 through 27.

The sloped I/O tower would include the same features (e.g., ports) and functions (e.g., flows into and out of the reservoir) as described above and in Chapter 2, *Project Description and Alternatives*. The design of the I/O tower (i.e., whether vertical or sloped) does not affect the operation of the I/O tower, and the sloped I/O tower would operate the same way as described in Chapter 2. Therefore, the evaluation of surface water quality within the reservoir under operating conditions and the water quality of discharge water would remain the same as described in Chapter 6, *Surface Water Quality*.

The modifications to the design of the I/O tower would not result in a change to the evaluations or impact conclusions contained in the RDEIR/SDEIS related to the following resources: surface water quality, groundwater quality, vegetation and wetlands, wildlife, aquatic biological resources, geology and soils, minerals, land use, agriculture and forestry, recreation, energy, transportation and navigation, noise, cultural resources, Tribal cultural resources, visual resources, population and housing, public services, hazards and wildfire, and climate change. The footprint would remain in the footprint evaluated in these chapters, and the reservoir would continue to manage emergency releases under Project conditions per DSOD requirements.

One I/O Tunnel

The I/O tunnels described in Chapter 2, *Project Description and Alternatives*, of the RDEIR/SDEIS consisted of two 23-foot-diameter I/O tunnels that would extend approximately 3,110 feet from the I/O tower through the ridge on the right abutment of Golden Gate Dam for Alternatives 1, 2, and 3. They would daylight on the other side of the ridge and connect through four pipes to the transition manifold. The two I/O tunnels have been reduced to one tunnel of the same length and approximately 32 feet in diameter for Alternatives 1, 2, and 3. The single tunnel would be located in the same alignment as the two tunnels and underground but would be slightly larger. The single tunnel would reduce the need for materials and labor and would result in cost savings to the Project.

Resource-Related Details

The single I/O tunnel would be located in the same area as the two I/O tunnels described in the RDEIR/SDEIS (Chapter 2, *Project Description and Alternatives*, Figures 2-24 and 2-25). Therefore, acreage of temporary and permanent disturbance for the single I/O tunnel would either be the same or slightly smaller than that for the two I/O tunnels described in Chapter 2 and disclosed in Chapters 5 through 27. In general, construction means and methods for the single tunnel would be similar to those described for the two tunnels (Chapter 2, *Project Description and Alternatives*, Section 2.5.1.4, *Sites Reservoir and Related Facilities*). However, fewer materials would be required (i.e., less concrete), and fewer trips and employees would be needed.

The modifications of the design of the I/O tunnel would not result in a change to the evaluations or impact conclusions contained in the RDEIR/SDEIS related to the following resources: surface water quality, groundwater quality, vegetation and wetlands, wildlife, aquatic biological resources, geology and soils, minerals, land use, agriculture and forestry, recreation, energy, transportation and navigation, noise, cultural resources, Tribal cultural resources, visual resources, population and housing, public services, hazards and wildfire, and climate change. The temporary and permanent footprint would either be the same or smaller, thus resulting in no change or a potential reduction in impacts disclosed. The operation of the I/O tunnel would remain the same as was previously analyzed. Potential impacts associated with construction, such as air quality, GHG emissions, and noise and traffic impacts, would be reduced because less materials would be required, and fewer trips and employees would be needed.

Refinements to Project Operations

This section describes refinements to Project operations. Some of these refinements were made as design proceeded and some in response to comments. The section identifies why the refinements were made and provides resource-related information regarding each of those refinements. Changes to specific resource chapters or appendices can be found within Volume 1 or Volume 2 of the Final EIR/EIS. The refined modeling, further described in Master Response 3, *Hydrology and Hydrologic Modeling*, and throughout Volumes 1 and 2 of the Final EIR/EIS, represents operations for a comparative analysis to the No Project Alternative. Operations continue to be refined, but have been developed to maintain flexibility while addressing public comments received on the RDEIR/SDEIS and comments from state and federal resource agencies that would provide permits for the construction and operation of the Project. Where

operational detail was not available, operational parameters were used. Operational details are being developed parallel to the preparation of the Final EIR/EIS, but these operational details do not provide additional information necessary for the decision makers to reasonably consider the Project and compare the impacts and merits of the alternatives. Refinements in operations are described below and summarized in Table MR2-1. In some cases, operations refinements represent a change in expected operations, whereas in other cases refinements represent model improvements to better reflect the refinements in operations.

The modeling done to incorporate the Project refinements show that these refinements do not result in additional impacts to those described in the RDEIR/SDEIS. New model results have been incorporated into Volumes 1 and 2 of the Final EIR/EIS. The modeled representation of operations was modified in the Final EIR/EIS to respond to comments regarding the use of exchanges as well as represent refined operational criteria (e.g., diversion criteria). For more information regarding CALSIM II and modeling modifications, please see Master Response 3, *Hydrology and Hydrologic Modeling*.

Table MR2-1. Operational Criteria Comparison between RDEIR/SDEIS and Final EIR/EIS

Location (Listed from North to South)	RDEIR/SDEIS with Mitigation Included	Final EIR/EIS
Modeling of Shasta Lake Exchanges	Operated to improve Shasta Lake cold-water pool	Operated to improve Shasta Lake cold-water pool, fall flow stability, and spring pulse actions
Operational Dead Pool	120 TAF, although reservoir could be drawn lower for TCCA water supply during drought conditions	60 TAF
Bend Bridge Pulse Protection	Protection of all qualified precipitation-generated pulse events (i.e., peaks in river flow rather than scheduled operational events) from October to May based on the detection of fish presence and migration during the beginning of the flow event. For each event where fish presence and migration are detected, diversions from the Sacramento River would cease for 7 days.	Similar except the following: (1) a qualified precipitation-generated pulse event is determined based on forecasted flows; (2) hourly gage monitoring at Bend Bridge gage detects the predicted flow of 8,000 cfs, and migrating anadromous fish are detected at RBDD, and (3) pulse protection may cease earlier than 7 days if flows at Bend Bridge exceed 29,000 cfs and Project diversions subtracted from Bend Bridge flows continue to be at least 25,000 cfs.
Minimum Bypass Flows in the Sacramento River at the RBPP	3,250 cfs minimum bypass flow at all times; rate of diversion controlled by fish screen design	No change
Minimum Bypass Flows in the Sacramento River at the Hamilton City Pump Station	4,000 cfs minimum bypass flow at all times; rate of diversion controlled by fish screen design	No change

Location (Listed from North to South)	RDEIR/SDEIS with Mitigation Included	Final EIR/EIS
Minimum Bypass Flows in the Sacramento River at Wilkins Slough	Chapter 2: In addition to the minimum bypass flows in the Sacramento River at RBPP and the Hamilton City Pump Station, a minimum bypass flow of 8,000 cfs in the Sacramento River at Wilkins Slough would be in place in April and May and 5,000 cfs during the rest of the year. Mitigation Measure FISH-2.1: 10,700 cfs in March through May; 5,000 cfs all other times	10,700 cfs October 1 through June 14; 5,000 cfs September (not diverting from June 15 through August 31)
Fremont Weir Notch Protections	No more than 1% reduction in flow over weir when spill over the weir is less than 600 cfs. No more than a 10% reduction in flow over weir when spills over the weir are between 600 cfs and 6,000 cfs. No restriction when flows over the weir are greater than 6,000 cfs.	No longer included. Revised minimum bypass flows in the Sacramento River at Wilkins Slough and Bend Bridge pulse protection provide sufficient protections for Fremont Weir Notch.
South-of-Delta delivery water year–type restrictions	Releases to south-of-Delta participants limited to Below Normal, Dry, and Critically Dry Water Years, based on January–December SWP contract years using the D-1641 Sacramento Valley 40-30-30 water year index	Releases to south-of-Delta participants may occur in all years and would occur between July 1 and November 30.
Sacramento River Fully Appropriated Stream	Diversions allowed at any time of the year when all other diversion criteria were met.	Diversions allowed only when the Sacramento River is not fully appropriated (September 1 through June 14).
Excess conditions, as determined by DWR and Reclamation and defined in 2018 COA Addendum	Delta must be in excess for Sites Reservoir diversions.	No change
Freeport, Net Delta Outflow Index, X2, and Delta Water Quality	Operations consistent with all applicable laws, regulations, biological opinions and incidental take permits, and court orders in place at the time that diversion occurs	No change

Note: cfs = cubic feet per second; COA = Coordinated Operation Agreement; D-1641 = State Water Resources Control Board Revised Water Right Decision; DWR = California Department of Water Resources; EIR/EIS = environmental impact report/environmental impact statement; RBDD = Red Bluff Diversion Dam; RBPP = Red Bluff Pumping Plant; RDEIR/SDEIS = revised draft environmental impact report/supplemental draft environmental impact statement; Reclamation = Bureau of Reclamation; SWP = State Water Project; TAF = thousand acre-feet; TCCA = Tehama-Colusa Canal Authority.

Exchanges

To support timing of releases and deliveries to Storage Partners north and south of the Delta, exchanges with local Storage Partners may occur. This type of exchange is most likely to occur with GCID, but could also occur with other Sacramento River Settlement Contractors and Reclamation. Instead of diverting all or a portion of its water from the Sacramento River, the local Storage Partner would receive a portion of its water from Sites Reservoir. A portion of the local agencies' supply would be left in the Sacramento River (i.e., not diverted by that contractor or agency) and used for other Storage Partners.

Exchanges of water may also occur with the CVP and SWP reservoirs, including Shasta Lake and Lake Oroville. Exchanges have the potential to assist the CVP and SWP in meeting their regulatory obligations and their authorized purposes, including to protect, restore, and enhance fish, wildlife, and associated habitats; provide water supply; and generate power. Exchanges would only be conducted when they would be neutral or net beneficial to CVP and SWP operations and not affect the ability of the CVP or SWP to meet applicable laws, regulations, BiOps and ITPs, contractual deliveries, and court orders in place at the time.

To help Reclamation achieve operational objectives without additional burden or negative effects to the existing CVP system, the Authority is considering the following actions to coordinate operations with Reclamation towards common goals. These actions would be pursued regardless of Reclamation's investment level; however, it is expected that increased federal benefits would be achieved with increased level of federal investment in the Project.

- **Shasta Lake Exchanges –** Exchanges with Shasta Lake would be formulated to target cold-water pool preservation and anadromous fish benefits. The exchanges would use Storage Partners' share of Sites Reservoir storage, including but not limited to the CVP share of the storage, in a manner to meet CVP deliveries and obligations as much as possible via Sites Reservoir to preserve water stored in Shasta Lake. These coordinated operations would be shaped in a way to minimize effects on Project deliveries to Storage Partners. Water exchanged in Shasta Lake would be released for Storage Partners' diversions north or south of the Delta or would be used for in-basin uses. The following outcomes would be targeted:
    - Cold-Water Pool Maintenance – Exchanges intended to maintain the cold-water pool in Shasta Lake would occur in years when temperature management would improve if the exchanges occur. Under this exchange, water would be released from Sites Reservoir in the spring and summer to meet CVP needs, including Sacramento River Settlement contract deliveries, CVP water service and/or repayment contracts, or Central Valley Project Improvement Act refuge needs in the Sacramento Valley that could physically receive water from Sites Reservoir and/or Reclamation's Delta obligations. By reducing releases from Shasta Lake in the spring and summer, the storage and cold-water pool in Shasta Lake would be preserved for use later in the year, typically during critical months of the cold-water pool management season (August and September) and into the fall. In late summer and fall (i.e., August through November) of that same calendar year, Reclamation would release an equivalent amount of water from Shasta Lake and/or the CVP share of Sites

Reservoir for Storage Partners. These releases would be subject to other limitations and regulations, including State Water Board actions.

- Fall-Run Redd Maintenance – Exchanges with Shasta Lake may also occur to minimize fall-run Chinook salmon redd dewatering. Under this exchange, water released from Shasta Lake from the fall through the winter to maintain inundation and prevent fall-run redd dewatering would be used downstream to meet Storage Partners' needs. Sites Reservoir would subsequently release an equivalent amount of water to meet CVP needs in the spring and summer. Fall-run redd maintenance flows could also be achieved by releasing previously exchanged water stored in Shasta Lake similar to the cold-water pool maintenance action described above. For example, in Wet and Above Normal Water Years, if Shasta Lake storage is high due to exchanged water, Reclamation may choose to meet the Fall X2 requirement by releasing water from Shasta Lake instead of reducing Delta exports. The water that can be pumped instead of what would have been reduced to meet Fall X2 could be delivered to Storage Partners.
- Spring Pulse Assistance – Exchanges with Shasta Lake and/or Storage Partners may also assist Reclamation in making spring pulse flows for the benefit of juvenile salmon outmigration in the lower Sacramento River. When Reclamation is implementing a spring pulse release from Shasta Lake and to prevent reduction in the pulse flow, water would be released from Sites Reservoir during the pulse period to meet other CVP needs, such as contractual deliveries to Sacramento Valley Settlement and water service contractors. During spring pulse flow times when the Authority may otherwise divert flows from the Sacramento River, Reclamation may transfer water stored in Sites Reservoir to the other Storage Partners in lieu of diversions. Spring pulse flow assistance could also be achieved by releasing previously exchanged water stored in Shasta Lake similar to the cold-water pool maintenance action described above. CVP needs, including deliveries to Sacramento River Settlement Contractors, can be made via Sites Reservoir to maintain water in Shasta Lake that might help achieve additional pulse flows (either an additional pulse or increased volume) from March through May.

Sites Reservoir exchanges with Folsom Lake were considered in the RDEIR/SDEIS as a potential benefit but were not included in the CALSIM II modeling. Therefore, they are no longer included as part of the operations of the Project in the Final EIR/EIS, and modeling results have not changed. Please refer to Master Response 3, *Hydrology and Hydrologic Modeling*, for further descriptions of Shasta Lake and Lake Oroville exchanges.

Reduction in Operational Dead Pool Volume

For the RDEIR/SDEIS, Sites Reservoir operational dead pool was assumed and modeled at 120 TAF. However, the reservoir was allowed to be drawn lower than this for TCCA water supply during drought conditions. The Project description and CALSIM II modeling (see Master Response 3, *Hydrology and Hydrologic Modeling*, for adjustments made to modeling) now allow an operational dead pool of 60 TAF.

The effects of this new operational dead pool have been incorporated in the modeling in the Final EIR/EIS and are considered in all relevant resource chapters. For example, reduction in operational dead pool potentially could affect water quality during periods of low storage by increasing evapoconcentration, allowing the thermocline and aerated water to extend closer to the bottom of the reservoir, increasing reservoir release temperatures and reducing available outlet elevations. Evapoconcentration effects are incorporated into Chapter 6, *Surface Water Quality*, of the Final EIR/EIS and below under the *Storage and Releases* section. Water temperature effects associated with Sites Reservoir release temperatures are described in Chapter 6 and Chapter 11, *Aquatic Biological Resources*, of the Final EIR/EIS. While lower reservoir storage could cause release temperature to increase, based on the CE QUAL W2 and blending model results, the temperature impact determinations would remain unchanged because of the small effect on Sacramento River temperatures. Effects of low storage on the thermocline, aeration, and outlet port selection are described in Master Response 4, *Water Quality*. None of these effects would result in additional significant impacts with the existing mitigation measures beyond what is described in the RDEIR/SDEIS.

Diversion Criteria for Excess Conditions

As described above under *Merits of the Project and Alternatives*, Sites Reservoir would only divert water from the Sacramento River when the Delta is in excess conditions. Excess is defined in the 2018 Addendum to the Coordinated Operation Agreement (U.S. Department of Interior and California Department of Water Resources 2018:Appendix B) as "periods when it is mutually agreed [by DWR and Reclamation] that releases from upstream reservoirs plus unregulated flows exceed Sacramento Valley in-basin uses plus Delta exports." Water released from Shasta Lake is water developed under the CVP water rights. These releases are not available for diversion by the Project. This includes releases from Shasta Lake for downstream temperature management. Several adjustments have been made in the Project description and modeling that affect when Sacramento River diversions can occur for the purpose of adding water to Sites Reservoir.

Bend Bridge Pulse Protection

Refinements have been made to the Bend Bridge pulse protection criteria. They are no longer based on a 3-day trailing average of flows at Bend Bridge. Instead, they will be based on a predicted storm-related flow event likely using information from the National Oceanic and Atmospheric Administration’s California Nevada River Forecast Center. When a forecasted storm event in which a 3-day forecasted average of Sacramento River flow at Bend Bridge is projected to exceed 8,000 cfs, and the 3-day forecasted average combined tributary flow upstream of Bend Bridge (Cow Creek, Cottonwood Creek, and Battle Creek) is projected to exceed 2,500 cfs, a pulse protection event is anticipated. Diversion restrictions would begin when the average hourly flows in the Sacramento River at Bend Bridge exceed 8,000 cfs, and the average hourly flows in the tributaries upstream of Bend Bridge (Cow Creek, Cottonwood Creek, and Battle Creek) cumulatively exceed 2,500 cfs, provided that the previous day was not already in a pulse protection event. Revised diversion criteria retain the detection of an outmigration pulse of anadromous fish at Red Bluff Diversion Dam as a criterion, and the pulse protections are expected to be more protective of salmonoids. Implementation of that criterion will be developed in the Project’s Adaptive Management Program and will be implemented when the relationship between flow pulses and fish pulses is determined to be sufficiently

predictable to be used to guide operations. Until such time that the criterion for detecting a fish pulse is developed in coordination with CDFW, USFWS, and NMFS, the pulse protection will be implemented based on the flow criteria only.

In the RDEIR/SDEIS, pulse protection was required to last for 7 days upon initiation. The Project description and CALSIM II modeling have been modified to allow pulse protection to end once the 3-day average flow at Bend Bridge exceeds 29,000 cfs, provided Project diversions subtracted from Bend Bridge flows continue to be at least 25,000 cfs. Pulse flows of those levels would provide flow continuity between the upper and lower Sacramento River (i.e., below Wilkins Slough) and are expected to enhance survival of migrating juvenile winter-run, spring-run, fall-run, and late fall–run Chinook salmon and steelhead through the middle reaches of the Sacramento River (Michel et al. 2021, Hassrick et al. 2022, Steel et al. 2020), as fish movement is thought to occur in response to increased flow and turbidity associated with the beginning of a precipitation-generated high-flow event (Poytress et al. 2014, Cavallo et al. 2015). This cap was added to the pulse protection measure because once flows have reached this level, flows are adequate for ecological benefits, and high flows will likely persist beyond 7 days.

Minimum Bypass Flows in the Sacramento River at Wilkins Slough

For the RDEIR/SDEIS, minimum flow requirements in the Sacramento River at Wilkins Slough were 8,000 cfs for April and May and 5,000 cfs for all other months for all alternatives. Chapter 11, *Aquatic Biological Resources*, of the RDEIR/SDEIS evaluated and disclosed potential operational impacts on aquatic biological resources using multiple models and other lines of evidence. Based on the impact analysis contained in Chapter 11, impacts related to downstream migration survival of juvenile Chinook salmon and steelhead were determined to be potentially significant. As required by CEQA, a mitigation measure was proposed for these potentially significant impacts. Mitigation Measure FISH-2.1: *Wilkins Slough Flow Protection Criteria* was proposed to reduce the potentially significant impacts identified as a result of operation of Alternative 1, 2, or 3. The mitigation measure was developed in response to the potential impact identified through modeling of the Project and alternatives. This inclusion of the measure as mitigation does not mean that the RDEIR/SDEIS failed to use a stable or accurate Project description. Subsequent to the release of the RDEIR/SDEIS, the minimum flow requirements in the Sacramento River at Wilkins Slough that condition diversions to Sites Reservoir under Alternatives 1, 2, and 3 have been increased. In the Final EIR/EIS, the refinements include modification to the minimum bypass Wilkins Slough flow criteria, which now requires that diversions to Sites Reservoir may not cause flow at Wilkins Slough to decline below 10,700 cfs from October 1 to June and 5,000 cfs for September (there will be no diversion from June 15 to August 31 because the Sacramento River is fully appropriated). This incorporation of higher flow requirements into the Project description eliminates the need for Mitigation Measure FISH-2.1, and new modeling results indicate the corresponding Impacts FISH-2, FISH-3, FISH-4, and FISH-5 remain less than significant.

Fremont Weir Notch Protections

For the RDEIR/SDEIS, specific operational criteria were incorporated in CALSIM II to ensure diversions to Sites Reservoir would not interfere with achieving the intended purpose of the Fremont Weir Notch Project. Following consultation with various agencies, these criteria have been removed. The Project would operate to avoid effects on the Yolo Bypass Fremont Weir Big

Notch Project's (Big Notch Project) ability to achieve its juvenile entrainment and adult passage performance goals for salmonids in the Sacramento River. The Bend Bridge pulse protection measure and minimum bypass flows requirement at Wilkins Slough are expected to prevent substantial changes in flows, thus preventing substantial changes in juvenile salmonid entrainment into the Big Notch and adult salmonid passage over the Big Notch under Alternatives 1, 2, and 3, as compared to the No Project Alternative. However, as described in Appendix 2D, Section 2D.6.5, *Effects on Fremont Weir Big Notch*, the Adaptive Management Plan for the Project recognizes there is uncertainty about the performance of the Big Notch as it is currently not operational, and, thus, uncertainty on the effects of the Project on the Big Notch Project's ability to achieve its performance goals. Monitoring will be conducted, in cooperation with the State, to determine whether the Project reduces the ability of the Big Notch Project to achieve its performance goals. If there is an adverse effect to the Big Notch Project's ability to achieve its performance goals, a science-based adaptive management approach will be employed to determine how to adjust Project diversions or employ other non-flow measures to ensure the Project does not inhibit the Big Notch Project in meeting its performance goals.

Releases to South-of-Delta Participants in All Year Types

For the RDEIR/SDEIS, releases from Sites Reservoir to south-of-Delta California were assumed not to move through the Delta during Wet and Above Normal Water Year types due to limited demand and conveyance capacity. The Project now also assumes releases of water for south-of-Delta California purposes during Wet and Above Normal Water Year types. The effect is minimal because the CVP and SWP generally make full use of conveyance capacity during these year types, allowing little opportunity for conveyance of Sites water.

Diversion Period Restrictions

While diversion at the existing RBPP and existing GCID Hamilton City Pump Station may occur year-round, diversions to Sites Reservoir will only be allowed during September 1 through June 14. This restricted diversion timeframe is consistent with the Authority's water right application to divert water when the Sacramento River is not already fully appropriated. The modeling included in the RDEIR/SDEIS, which allowed year-round diversions, showed that diversion to Sites Reservoir between June 15 and August 31 was generally minimal due to lack of the diversion criteria being met and had no effect on impact assessment. Diversions to Sites Reservoir analyzed in the Final EIR/EIS are now restricted to September 1 through June 14.

Other Criteria

All other criteria and system operations that could affect when excess conditions occur (and therefore when diversions to Sites Reservoir storage could occur) remain the same as described in the RDEIR/SDEIS. These include system operation requirements such as meeting Delta flow and water quality standards, providing Delta exports to CVP and SWP contractors, allowing diversions for senior water right holders in the Sacramento River watershed, and implementing protocols for operation of existing reservoirs. Similarly, inputs from the Trinity River and San Joaquin River have not been modified. Multiple criteria that are specific to Sites Reservoir operations also remain unchanged. These include RBPP diversion capacity and bypass flow, Hamilton City diversion capacity and bypass flow, and the GCID Main Canal maintenance window. Although bypass flows for RBPP and Hamilton City are unchanged, the increased flow

requirement at Wilkins Slough generally is more stringent and overrides the effect of the bypass flows.

Storage and Releases

The refinements to Project operations, particularly the increased flow requirement for the Sacramento River at Wilkins Slough, cause a small reduction in the average volume of water diverted to Sites Reservoir storage, which translates to a small reduction in Sites Reservoir releases (ranging from an overall average reduction of 1.5% for Alternative 3 to 5.4% for Alternative 1B). Simulated Sites Reservoir storage has changed relative to RDEIR/SDEIS values, with lower carryover storage during dry conditions (average reduction in carryover storage during Critically Dry Water Years ranges from 14.9% for Alternative 3 to 5.6% for Alternative 1A). In contrast, storage may increase during Wet Water Years. For Wet Water Years, the largest increase in storage relative to the RDEIR/SDEIS was 10.3 % in January for Alternative 3. The increases in storage compared to the RDEIR/SDEIS are associated with a relatively large increase in December diversions during Wet Water Years due to removing the Fremont Weir diversion criterion. Overall, less water is diverted in the simulated Sites Reservoir storage relative to the RDEIR/SDEIS due to the refinements of Project operations. These changes are a result of expanded exchanges and coordinated operations with Shasta Lake to improve cold-water pool preservation and provide increased spring pulse flows and fall flow stability. Therefore, the operations of Sites Reservoir are more active and result in lower storage levels on average. The addition of the flow requirement for the Sacramento River at Wilkins Slough is also a factor resulting in lower levels of storage in Sites Reservoir overall.

Due to the Wilkins Slough flow requirement, there is now a 4-year period (1931–1934) in the CALSIM II results with almost no diversion to storage. For Alternative 3, the modeled storage drops from approximately 270 TAF in 1930 to approximately 40 TAF in 1934 due to water supply releases and evaporation. The pattern is similar for the other alternatives, although minimum storage is not quite as low, and peak evapoconcentration is not as high. The slightly more active use of storage under Alternative 3 usually results in less evapoconcentration, but not during these particular years. This long period of evapoconcentration without refilling results in an estimated 2.4-fold increase in concentrations by 1934, with most of the increase occurring after the reservoir reaches operational dead pool. In the RDEIR/SDEIS, evapoconcentration was estimated to cause no more than an approximately 1.5-fold increase in concentration.

The new evapoconcentration estimates are incorporated into Chapter 6, *Surface Water Quality*, of the Final EIR/EIS. As described in Chapter 6 and Master Response 4, *Water Quality*, the increase in evapoconcentration would not result in additional significant impacts beyond what is described in the RDEIR/SDEIS.

Coordination with SWP and CVP and Exchanges

As described in Impact FISH-2, there are likely multiple opportunities that would arise in real-time operations to coordinate operations and exchanges between Sites Reservoir and Shasta Lake that could benefit anadromous fish. These are discussed above and in the Project description and are reflected in the modeling for this document (see Master Response 3, *Hydrology and Hydrologic Modeling*). The Authority and Reclamation acknowledge that, due to the unique conditions in each year, additional opportunities for exchanges and coordination of real-time

operations will exist. The purpose of the operations plan and adaptive management of the Project is to manage the exchanges associated with Sites Reservoir between the other system operators and reservoirs.

The Authority will develop an operating agreement with DWR and Reclamation such that operation of the CVP and SWP will continue to occur, and Sites Reservoir will operate in coordination with the CVP and SWP. The Authority's water right would be junior to the CVP and SWP. Sites Reservoir diversions would therefore occur only after those more senior water rights of the CVP and SWP have been satisfied. Sites Reservoir operations in the Delta would also be junior to the CVP and SWP. In addition, Sites Reservoir is diverting to storage only when the Delta is in excess condition, as determined by DWR and Reclamation, and therefore would not impinge on CVP and SWP operations. Water may be released from Sites Reservoir for export through the Delta during the transfer window, July to November. As demonstrated by the modeling, releases are maximized through the Delta during Below Normal, Dry, and Critically Dry Water Years. Potential impacts associated with transfers and exports are identified and described in the modeling and throughout the impact analysis.

All water released from Sites Reservoir, Lake Oroville, or Shasta Lake as part of an exchange operation would be specifically tracked. The water would be tracked from the time it is initially exchanged to its ultimate point of delivery. Currently, there is a metering and tracking system in place for existing diversions to Sites Reservoir (e.g., at RBPP and Hamilton City).

Reservoir Operations Plan

Several comments suggest that the modeling does not have merit without an operations plan. As described in Chapter 2, *Project Description and Alternatives*, Section 2.5.2.4, *Operations and Management Plans*, the Authority has developed Version 1 of a Reservoir Operations Plan in parallel to the development of the RDEIR/SDEIS. The purpose of the Reservoir Operations Plan is to compile operations-related items from other documents in one location. The contents of the Reservoir Operations Plan are primarily pulled from the RDEIR/SDEIS and the Authority's Principles of Storage. The Reservoir Operations Plan is a living document and at this stage is for illustrative purposes. Future versions of the plan will be modified as needed based on the final alternative selected and on the requirements established by the permitting and water rights processes for the Project.

The alternatives description in Chapter 2 and the modeled representation of the alternatives provides planning-level details, such as timing and volume of diversions, timing and volume of releases, temperature of releases, and timing and volume of exports, among other numerous factors that could be refined under the specific operating conditions of Sites Reservoir and the system. These factors are disclosed throughout the document and provide decision makers with an understanding of the magnitude and level of potential impact of an alternative when compared to the No Project Alternative and the differences between alternatives under operating conditions. The Reservoir Operations Plan does not include operational details beyond those modeled and evaluated in the RDEIR/SDIES or the Final EIR/EIS. Text has been added to Chapter 2 to clarify the timing of the preparation of the Reservoir Operations Plan.

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