Chapter 3 Environmental Analysis

3.1 Introduction

This chapter is designed to help readers understand how the environmental impact analysis was conducted for the environmental resources and topics evaluated in the subsequent chapters of this RDEIR/SDEIS.

3.2 Analysis

Chapters 5 through 27, which address topics that are covered by both CEQA and NEPA, are organized according to the following framework.

- Environmental setting
- Methods of analysis
- Impact analysis and mitigation measures

Environmental impacts are discussed for the No Project Alternative/No Action Alternative and the three action alternatives (Alternatives 1, 2, and 3). As described further in Section 3.2.1, the term No Project Alternative is primarily used in this document to represent both the CEQA No Project Alternative and NEPA No Action Alternative. Best management practices included as integral components of the Project description are discussed in Chapter 2, *Alternatives Description*, Table 2-18, and are incorporated by reference into the methods of analysis and impact analysis for each environmental topic as appropriate. The impact analysis for each environmental topic includes the assumptions considered and the applicable thresholds of significance. Where feasible, mitigation measures are proposed for impacts determined to be significant to reduce the level of impact.

3.2.1 Existing Conditions and No Project Alternative

This section discusses the existing conditions (i.e., environmental baseline) under CEQA 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. Pursuant to Section 15125(a) of the CEQA Guidelines, the baseline generally consists of the physical conditions that exist at the time a Notice of Preparation (NOP) is published for an EIR. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture of a project's impacts, the existing conditions baseline may be defined by referencing historical conditions or conditions that are expected to occur when the project commences its operations. A CEQA lead

agency may also use a future conditions baseline (i.e., beyond the date when project operations commence), but if the agency relies solely on such a future baseline it must demonstrate that use of an existing conditions baseline would be uninformative or misleading. 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."

The impact analyses in this RDEIR/SDEIS use an existing conditions baseline that incorporates water supply facilities and ongoing plans and programs that existed as of the January 23, 2017, date for the Authority's NOP. However, regulatory operating requirements (i.e., Coordinated Long-Term Operations of the CVP and Incidental Take Permit for the Long-Term Operation of the SWP) have changed since January 2017, and an updated baseline is necessary to provide the most accurate picture of the Project's impacts. Therefore, the existing conditions baseline under CEQA has been updated to capture conditions through 2020. The 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 baseline, CEQA requires analysis of the No Project Alternative, which represents existing environmental conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not implemented. The purpose of the No Action Alternative is to allow the public and the decision-makers to compare the impacts of approving the project with the impacts of not approving the project. For ongoing activities, the No Project Alternative represents the continuation of existing facilities, plans, programs, and operations into the future, assuming that the Project is not implemented.

NEPA has no baseline requirement but similar to CEQA it requires analysis of the No Action Alternative, which represents a projection of current and reasonably foreseeable future conditions, including the continuation of preexisting, ongoing plans, programs and operations, without any of the action alternatives being implemented. Like the CEQA No Project Alternative, the NEPA No Action Alternative is intended to provide a comparative analysis of the impacts of the proposed action and the impacts of not proceeding with the action. The term *No Project Alternative* is primarily used in this document to represent both the CEQA No Project Alternative and NEPA No Action Alternative. The term NAA or No Action Alternative, which is identical to the No Project Alternative, may be used in the presentation of modeled results throughout this document and is noted where appropriate in resource method sections.

The reasonably foreseeable future conditions under the No Project Alternative would not be materially different from the conditions under the CEQA existing conditions baseline. This is because the existing, ongoing plans and programs that serve as the basis for the existing conditions baseline would reasonably be anticipated to continue to be implemented into the future. This includes the Biological Opinions issued on October 21, 2019, by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for the Reinitiation of Consultation on the Coordinated Long-Term Operations of the Central Valley Project and the State Water

Project, Reclamation's February 18, 2020, Record of Decision based on those Biological Opinions, and the California Department of Water Resource's March 31, 2020, Incidental Take Permit for the Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta. These have all established new regulatory requirements that govern water supply operations and delivery in California. These new requirements have been incorporated into the existing conditions baseline in order to present the most accurate and up-to-date picture of how the proposed Project, if approved and implemented, would affect baseline water supply, water quality, and fisheries conditions. These new requirements are also reasonably anticipated to continue into the future, 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.

In addition, historical land use and water demands, hydrology and existing water rights and contracts reflected in the CALSIM model would not be materially different between the No Project Alternative and the existing conditions baseline. The maximum water supplied to a service area, as identified by water rights and contracts, is not expected to change under the No Project Alternative because it represents the maximum water needed by a service area to meet demand over time. CALSIM allocates water supply to different service areas based on specific hydrologic conditions and regulations and the demand under those hydrologic conditions as specified by water rights or contracts. CALSIM rarely provides the maximum amount of water supply to meet the maximum demand because hydrologic conditions and regulations seldom allow for these types of deliveries to different users. Generally, SWP and CVP water users receive less than their full contract amount due to limited water availability. The difference between the existing conditions and the No Project/No Action Alternative assumed water demands is minimal in most areas because the existing conditions assumptions included full use of most CVP and SWP contract amounts for most agricultural uses and CVP and SWP municipal and industrial users that divert water from the Delta, when hydrological conditions allow. This would be the same under existing conditions and the No Project Alternative.

Finally, the physical environmental setting and land uses in Glenn and Colusa Counties, where the reservoir would be located, are not expected to materially change under the No Project Alternative. These two counties have shown limited growth over the last 20 years (approximately 14% for Colusa County and approximately 6% for Glenn County) and are expected to show little to slight growth through 2030 as a result of implementing general plans (approximately 7% for Colusa County and approximately 3.5% for Glenn County; see Chapter 25, *Population and Housing*, Table 25-2).

Disclosure of the potential future effects associated with climate change are addressed in Chapter 28*, Climate Change*. Each of the alternative model runs performed include assumptions associated with sea level rise and other potential climate change variables and potential effects are disclosed.

3.2.2 Regulations and Regulatory Setting

Laws, policies, plans, and regulations applicable to the Project are described in Appendix 4A, *Regulatory Requirements*. Information contained in this appendix is considered in various resource chapters (i.e., Chapters 5 through 30) and inform the existing conditions for these

resources. For example, the federal Endangered Species Act is described in Appendix 4A, as it is applicable to Chapter 9, *Vegetation and Wetland Resources*; Chapter 10, *Wildlife Resources*; and Chapter 11, *Aquatic Biological Resources*.

3.2.3 Study Areas

The introduction of each resource chapter identifies a study area relevant to the existing conditions and the analysis of impacts and effects of that chapter. Study areas are determined in consideration of variables such as the type of resource, the presence or absence of a particular resource, the nature of construction or operational disturbance, the presence or absence of sensitive receptors for a particular resource, and the regulating entities or agencies with jurisdiction over a resource. The study area generally includes the locations of Project components and footprints; however, certain Project components or geographies may be included or excluded from the study area, as appropriate.

3.2.4 Methods

The resource chapters include a description of the methods used to identify and assess the potential environmental impacts that would result from Project construction and operation. These methods included desktop reviews, database queries, and modeling that utilized the available information. Modeling output was used in evaluations for environmental topics such as surface water and groundwater resources, water quality, aquatic biological resources, air quality, greenhouse gases, and transportation. Models are used to assist in comparing the potential impacts between alternatives by using current and anticipated conditions. Modeling output does not predict absolute conditions in the future; rather, the output is intended to show the types of changes under alternative conditions that could occur for comparative purposes.

Multiple models and methods were used as part of an analytical framework to characterize and evaluate the changes in water operations in the CVP and SWP systems under each alternative. The analytical framework, tools, and analyses were formulated for evaluating the benefits and impacts of implementing and operating each of the alternatives. The framework provides for iteratively refining operations criteria to minimize both the systemwide and localized impacts on various resources while meeting the Project objectives and purpose and need. Appendix 1A, *Introduction to Appendices and Models*, provides information on the models used in this document, and each methods of analysis section of the resource chapters specifies the type of models and modeling results used, if appropriate to the impact analysis.

3.2.5 Determination of Impacts

The thresholds and criteria used for the impact analyses in this RDEIR/SDEIS for determining significance are specified in each resource chapter. These criteria were developed in consideration of current regulations, standards (e.g., CEQA Appendix G Environmental Checklist Form), and/or consultation with state and federal agencies; professional judgement; knowledge of the Project design and the area that would be affected; and the context and intensity of the environmental effects. Under CEQA, the impacts of the alternatives are compared to the existing conditions baseline and the No Project Alternative and are classified as follows:

- No impact—No change in the environment would result from implementing the alternative.
- Less-than-significant impact—No substantial adverse change in the environment would result from implementing the alternative.
- Less than significant with mitigation—The implementation of one or more mitigation measures would reduce the impact from an alternative to a less-than-significant level.
- Significant impact—A potentially substantial adverse change in the physical conditions of the environment would result from implementing the alternative based on the evaluation of project effects using specified significance criteria. Mitigation measures are proposed, when feasible, to reduce effects on the environment.

Under NEPA, the impacts of the action alternatives are compared to the No Action Alternative, which is equivalent to the CEQA existing conditions baseline for this RDEIR/SDEIS, and are classified as follows:

- An effect is considered *beneficial* if it would provide benefit to the environment as defined for that resource.
- A finding of *no effect* is identified if the analysis concludes that the alternative would have no effect or would not affect the particular resource in any adverse way.
- A finding of *no adverse effect* is identified if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- A finding of *substantial adverse effect* is identified if the analysis concludes that it would cause a substantial adverse change to the environment even with the inclusion of one or more feasible mitigation measures or could not be mitigated.

Several resource chapters provide an analysis of Alternative 1A and Alternative 1B, which are both considered under Alternative 1. This information is provided for the purposes of the operational impact analysis and is based on modeled results. The model results represent two different operation options under Alternative 1 as a result of the different participation for Reclamation, as described in Chapter 2, Section 2.3. The chapters with operational discussions of Alternatives 1A and 1B are: Chapter 5, *Surface Water Resources*; Chapter 6, *Surface Water Quality*; Chapter 7, *Fluvial Geomorphology*; Chapter 11, *Aquatic Biological Resources*, and the supporting appendices of these chapters.

In addition, as noted in Chapter 2, all Project components are the same between Alternatives 1 and 3. Therefore, in some chapters, the impact analyses for Alternatives 1 and 3 are combined under subheadings. If the impact mechanisms and types of impacts are similar across all three action alternatives, the impact analyses maybe aggregated to reduce redundancy and provide ease of comparisons between alternatives.

3.2.6 Mitigation Measures

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 the NEPA regulations (40 C.F.R. § 1508.20). To aid the reader, each mitigation measure is identified numerically to correspond with the number of the associated impact.

When significant impacts are identified, feasible mitigation measures are 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 is subsequently determined by evaluating the impact remaining after the application of the mitigation and reaching one of two conclusions: (1) the mitigation reduces 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 is determined to be significant and unavoidable. No mitigation measures are needed or proposed when an impact is determined to be beneficial or less than significant. Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance.

The Authority would be responsible for implementing all mitigation measures identified in this document, except for where Reclamation would retain authority under federal law.

3.3 Additional Analyses

Chapters 28 through 30 address topics that are unique to NEPA. Therefore, the organization and terminology in these chapters are slightly different from that in Chapters 5 through 27, according to the following framework.

- Affected environment
- Methods of analysis
- Environmental consequences

Similar to the discussion above in Section 3.2.4, *Methods*, the approaches for the analysis of effects related to climate change, Indian Trust Assets, and environmental justice included desktop reviews, database queries, and modeling. Modeling was used to analyze socioeconomic and climate change impacts. A range of potential impacts of future climate and sea-level conditions on the Project operation are evaluated. See Appendix 1A, *Introduction to Appendices and Models*, for more information on these models. The environmental consequences analysis discloses the effects of the alternatives on a particular resource. NEPA determinations consist of those identified in Section 3.2.5, *Determination of Impacts*.

3.4 Other Required Analyses

Other CEQA and NEPA analyses are addressed in Chapter 31, *Cumulative Impacts*, and Chapter 32, *Other Required Analyses*. These chapters describe and evaluate the following:

- Cumulative impacts (CEQA and NEPA)

- Growth-inducing impacts (CEQA only) and indirect impacts (NEPA)
- Relationship between short-term uses and long-term productivity and irreversible or irretrievable resource commitments (NEPA only)
- Significant irreversible environmental impacts (CEQA only)
- Mitigation measures with the potential for environmental effects (CEQA only)