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 the EIR/EIS.

3.2 Analysis

Chapters 5 through 22 and Chapters 24 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

Chapter 23, *Tribal Cultural Resources,* does not pertain to NEPA, and the level of analysis that was performed for Chapter 22, *Cultural Resources,* is sufficient for NEPA.

Environmental impacts are discussed for the No Project Alternative/No Action Alternative and the three action alternatives (Alternatives 1, 2, and 3). As described in Section 3.2.1, *Existing Conditions and No Project Alternative/No Action Alternative*, the term *No Project Alternative* is primarily used in this document to represent both the CEQA No Project Alternative and NEPA No Action Alternative unless otherwise noted. BMPs included as integral components of the Project description are discussed in Appendix 2D, *Best Management Practices, Management Plans, and Technical Studies,* 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/No Action Alternative

This section discusses the approach to existing conditions (i.e., the environmental baseline) under CEQA, the No Project Alternative under CEQA, and the No Action Alternative under NEPA.

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 environmental 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 EIR/EIS use an environmental baseline that incorporates water supply facilities and ongoing plans and programs that existed as of January 23, 2017, the date for the Authority's NOP. However, the environmental baseline in this EIR/EIS was updated to capture conditions through the end of 2020, as described below, in order to reflect significant changes in the applicable regulatory operating requirements in 2019–2020 before publication of the RDEIR/SDEIS, to provide a more accurate depiction of the Project's impacts. The 2020 environmental baseline reflects a range of historical hydrologic conditions (e.g., watershed runoff); current physical conditions (e.g., dams); the water rights orders and decisions and water quality criteria from the State Water Resources Control Board (State Water Board); updated municipal, environmental, and agricultural water uses; updated land uses; and relevant laws, regulations, plans, and policies, including updated regulatory operating conditions for the CVP and SWP.

Large-scale, California-focused, long-term planning analyses typically use the CALSIM model to identify potential water system–related impacts. CALSIM II, released in the early 2000s, is a reservoir–river basin planning model developed by the California Department of Water Resources (DWR) and Reclamation to simulate the operation of the CVP and SWP over a range of different hydrologic conditions. Inputs to CALSIM II include water demands (including water rights), stream accretions and depletions, reservoir inflows, irrigation efficiencies, and parameters to calculate return flows, nonrecoverable losses, and groundwater operations. The CALSIM II model simulates river flows, reservoir storage, Delta outflow, and diversions, including Delta exports. The use of CALSIM II allows for comparative changes or effects to the CVP and SWP water resources system associated with adding a new surface storage reservoir located north of the Delta. The CALSIM model is extensively used to simulate statewide water operations in California, has been extensively peer reviewed, and is the only model that simulates statewide reservoir operations, river flow, and Delta operational changes.

The baseline conditions for water supply and delivery in California changed substantially in 2019–2020 before publication of the RDEIR/SDEIS. In 2019, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service issued new biological opinions under the Endangered Species Act for the Coordinated Long-Term Operations of the CVP and SWP (collectively referred to as the ROC on LTO BiOps; U.S. Fish and Wildlife Service 2019; National Marine Fisheries Service 2019), and, in 2020, Reclamation adopted a Record of Decision (ROD) based on the biological opinions (Bureau of Reclamation 2020). In 2020, the California Department of

Fish and Wildlife also issued an Incidental Take Permit under the California Endangered Species Act for Long-Term Operations of the SWP in the Sacramento–San Joaquin Delta (SWP ITP; California Department of Fish and Wildlife 2020). The ROC on LTO BiOps and ROD and the SWP ITP reflect baseline conditions for the CVP–SWP system that are substantially different from those contained in the previous biological opinions issued in 2008 and 2009. These recent substantial changes in the regulatory operating criteria for the SWP and CVP required a complex and time-consuming effort by the Authority and Reclamation to define the modeling to use for evaluating the Project.

At the time the hydrologic modeling was initiated for the RDEIR/SDEIS, there were four options for consideration for the baseline in the CALSIM II modeling. The Authority and Reclamation evaluated these different options and determined that using the CALSIM II 2020 Benchmark model would provide the most realistic representation of CVP and SWP operations and, thus, the most realistic representation of the possible impacts of the Project (Sites Project Authority 2021). Reclamation worked closely with DWR, California Department of Fish and Wildlife, and other water agencies to develop the details and parameters of the CALSIM II 2020 Benchmark model. This model incorporates both ROC on LTO BiOps and actions from the SWP ITP. In development of this model baseline, Reclamation sought review and input from technical staff from multiple federal and state agencies, in order to develop and select model assumptions that best represent CVP and SWP operations for use in evaluating this Project. As a result of these extensive efforts, the CALSIM II 2020 Benchmark represents a CALSIM II modeling baseline that provides the most realistic representation of CVP and SWP operations in the model for the Project.

While the CALSIM II model is readily available and has been used extensively, incorporating the Project into the model was a tremendous effort. Dozens of nodes in the model needed to be changed to add in the physical Project facilities to route water into and out of these facilities. In terms of diversions for the Project, logic in the model was changed to simulate diversions into the Project based on the Project's diversion criteria but also to ensure that diversions did not conflict with the existing uses of the TC Canal and the GCID Main Canal. In terms of releases, logic in the model needed to be modified and, in some cases, developed to simulate demands from Project participants and conveyance capacity through downstream facilities, which then triggers release of water from the Project, and to route those deliveries through downstream facilities and track deliveries to Project participants as "Sites water" through the different nodes in the model to complete Project accounting and understand Project impacts. Logic in the model also needed extensive refinement to simulate Project exchanges with Shasta Lake and Lake Oroville and to ensure these exchanges were completed in the model in compliance with the 2019 ROC on LTO BiOps and 2020 ROD (U.S. Fish and Wildlife Service 2019, National Marine Fisheries Service 2019, Bureau of Reclamation 2020) and 2020 SWP ITP (California Department of Fish and Wildlife 2020). In addition, refinements were needed to some of the subsequent models (e.g., the temperature model) to use the Project's CALSIM II modeling output as their input criteria.

The CALSIM II baseline used in the EIR/EIS was updated between the RDEIR/SDEIS and the Final EIR/EIS to match the most recent Reclamation and DWR 2021 baseline study. The incorporation, testing, and completion of the analysis of the Project in the CALSIM II 2020

Benchmark baseline model, the analysis of the Project in CALSIM II, and all of the downstream modeling took more than 6,300 hours and 14 months for the Project's modeling team to complete. This does not include the time spent by other team members to discuss and agree upon assumptions and methodology and complete secondary quality-control review.

On September 30, 2021, Reclamation requested the reinitiation of consultation for ROC on LTO under the Endangered Species Act, and on October 1, 2021, the U.S. Fish and Wildlife Service and National Marine Fisheries Service agreed to the reinitiation. In litigation challenging the 2019 ROC on LTO BiOps (U.S. Fish and Wildlife Service 2019, National Marine Fisheries Service 2019) and Reclamation's 2020 ROD (Bureau of Reclamation 2020), the federal government defendants requested that the U.S. District Court for the Eastern District of California voluntarily remand the 2019 ROC on LTO BiOps and 2020 ROD without vacating them, and they further requested, along with the State of California (a plaintiff in the litigation), that the Court order an Interim Operations Plan for the coordinated operations of the CVP and SWP.

After release of the RDEIR/SDEIS in November 2021, the Court granted these requests, and currently there is an Interim Operations Plan, adopted in February 2023, that is in place until the end of 2023. *See Pacific Coast Federation of Fisherman's Associations v. Raimondo*, Order Re Interim Operations Plan (Feb. 28, 2023) (E.D. Cal. Case Nos. 1:20-cv-00431-JLT-EPG & 1:20-cv-00426-JLT-EPG). However, this recently issued interim plan is only temporary.[1] Accordingly, the environmental baseline in this EIR/EIS incorporates the 2019 ROC on LTO BiOps, 2020 ROD, and 2020 SWP ITP, which have not been vacated or invalidated. Further, the contents and requirements of the future biological opinions are currently unknown and are speculative at this time. At such time when new biological opinions are issued, the Authority and Reclamation will make a determination of what actions are required or warranted with respect to the Project, including any further environmental review. 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 Project 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, somewhat 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 Alternatives 1, 2, or 3 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

[1] The court's February 28, 2023, order states that the Interim Operations Plan is "specific to the hydrologic conditions through December 31, 2023, and may not be appropriate for the remainder of Water Year 2024 operations or long-term operations; and, shall expire on December 31, 2023."

Alternative and NEPA No Action Alternative; however, the terms are interchangeable. For example, the terms *NAA* or *No Action Alternative*, which are identical to the No Project Alternative, may be used in the presentation of modeled results throughout this document and are 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 2020 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 and the National Marine Fisheries Service (National Marine Fisheries Service 2019, U.S. Fish and Wildlife Service 2019); Reclamation's February 18, 2020, ROD, which takes the BiOps into account and adopts their requirements (Bureau of Reclamation 2020); and DWR's March 31, 2020, SWP ITP (California Department of Fish and Wildlife 2020). These have all established new regulatory requirements to govern water supply operations and delivery in California since analysis of the Project began for the RDEIR/SDEIS. These new 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 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.

Historical land use and water demands, hydrology, and existing water rights and contracts reflected in the CALSIM II model would not be materially different between the No Project Alternative and the environmental baseline. The CALSIM II period of record is a reasonable baseline with regard to drought frequency and duration because droughts have occurred in the past and are reflected in the CALSIM II period of record. CALSIM II allocates water supply to different service areas based on specific hydrologic conditions and regulations and the demand under those hydrologic conditions as governed by water rights or contracts. Although there have been minor changes to water rights issued by the State Water Board and minor changes to CVP/SWP contracts, such as contract assignments and adjustments to contract terms, there have been no new large water rights or CVP/SWP water supply contracts issued in decades. Outside of this Project and other limited projects, such as the Los Vaqueros Reservoir Expansion Phase II, identified in Chapter 31, *Cumulative Impacts*, the Authority and Reclamation are not aware of any new large water right or water right change that would alter the amount of a right or water supply contract. (It is important to note that while the Delta Conveyance Project (DCP) is contemplated, the DCP would result in an additional point of diversion for the SWP but not an increase in the total amount of water the SWP is authorized to divert under its existing water rights.)

Demand, hydrologic conditions, and regulations are factored into the CALSIM II model. As a result, CALSIM II rarely models water supply to meet the maximum demand because hydrologic conditions and regulations seldom allow for full contract deliveries to SWP and CVP water users. In recent years, SWP and CVP water users have regularly received less than their full

contract amount due to limited water availability. (In the CVP and SWP, there exists numerous pre-CVP water right holders, some riparian and some pre- and post-1914 prior appropriation holders. Prior to construction and operation of the CVP and SWP, many pre-CVP right holders protested water rights for the CVP, resulting in settlement contracts and agreements in order for junior CVP and SWP rights to be granted. Those contracts and agreements are largely based on pre-CVP rights to water, and, therefore, the SWP and CVP generally satisfy those senior water contracts and agreements before operating to meet CVP and SWP obligations. Examples of pre-CVP senior water contracts and agreements are the Sacramento River Settlement Contracts, Feather River Settlement Contracts (SWP), Operating Agreement for the Oakdale Irrigation District and South San Joaquin Irrigation District, Friant Dam Riparian Holding Contracts, San Joaquin River Exchange Contract, and San Joaquin River Settlement Contracts. Reclamation implements these contracts according to their provisions.) 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 include 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. For changes to occur as 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.

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). The area where the reservoir would be located contains privately owned parcels in Glenn and Colusa Counties and is mainly designated as residential or foothill agriculture with supporting zoning. The primary uses of these lands are residential, grazing, and agricultural. By virtue of this zoning and land use designations, any future development would be restricted and would ultimately require zoning or land use designation changes reviewed and approved by local governments, none of which are currently reasonably foreseeable. Therefore, it is reasonable to anticipate existing land would continue under its current condition, which is generally rural. Existing effects associated with grazing or existing land uses would continue without the Project, such as disturbance of vegetation and soil.

3.2.2 Regulations and Regulatory Setting

Laws, policies, plans, and regulations potentially 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 31) and informs the environmental baseline for CEQA 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 environmental baseline 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 operations. These methods include previous survey results, desktop reviews, database queries, and modeling that utilized the best available information and science. "Best available science" is defined as the best scientific information and data for informing management and policy decisions. The Authority and Reclamation strived to use the best available science throughout the EIR/EIS. Development of the Project and analysis of its environmental impacts utilized a wide range of relevant data, literature, and tools. The Authority and Reclamation used the best available scientific information to produce analyses of the effects of the Project, drawing on a number of scientific and engineering disciplines that include geology, hydrology, biology, ecology, chemistry, engineering, and climatology. The data, models, and literature are publicly available, and the methodologies used to apply these tools and information are described in the analyses in the various resource chapters and appendices of the EIR/EIS. The data, models, literature, and analyses have been subjected to review either as part of the customary practices of scientific publication or as part of legal and regulatory processes.

On-the-ground field surveys were conducted by DWR during earlier phases of the Project. In many cases, DWR had to obtain court orders to enter private properties. Due to the sensitivity of landowners and earlier commitments to maintain confidentiality of survey data locations, the Authority has not been able to conduct additional surveys on properties that it does not own or otherwise have legal access to enter or inspect. Instead, the Authority has pursued targeted access in recent years to support environmental clearance for geotechnical investigations. The analysis in the EIR/EIS relies in part on the comprehensive surveys conducted by DWR and the data collected for the area of the original Project footprint at that time. The current study area is 21,628 acres and includes 487 county assessor's office parcels. Of these 21,628 acres, 19,237 acres were surveyed by DWR. Although the data was collected in the early 2000s, due to the rural nature of the area and minimal change in land use, the data collected still provides a robust and viable dataset that has been updated based on extensive desktop reviews, database queries, and the best available science approach noted above.

For multiple resources, the quantitative or qualitative analysis of construction generally ranges from 2024 to 2029. Some analyses may evaluate peak year(s) of construction or a particular timeframe within the total construction duration. Operations is assumed to begin in 2030 and would continue for the life of the Project. Operations impacts for the Project are evaluated using multiple quantitative and qualitative tools over different timeframes. For example, CALSIM II is used to evaluate resources related to hydrology (e.g., water quality and aquatic biological resources) and uses hydrologic conditions from 1922 to 2003 with current infrastructure and regulations to model the No Project Alternative and the alternatives. The water year types documented during this period represent a wide range of hydrologic conditions, and this variability is expected to occur during the operation of the Project. In addition, for the purposes of disclosing potential future effects associated with climate change, the 2035 Central Tendency (2035 CT) climate change scenario which extends from 2020 to 2049, was applied. The results from this evaluation were used to modify the 1922 to 2003 hydrology in CALSIM II to represent a range of hydrologic conditions under climate change. These effects are addressed in Chapter 28, *Climate Change*. The methods of analysis section in each resource chapter notes the types of qualitative or quantitative analysis applied, the timeframe evaluated, and the types of models and modeling output used (if appropriate to the impact analysis). Appendix 1A, *Introduction to Appendices and Models*, provides information on the models used in this document.

Modeling output informs the 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 existing conditions. Modeling output does not predict absolute conditions in the future under alternative conditions; 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 Alternatives 1, 2, and 3. 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 system-wide and localized impacts on various resources while meeting the Project objectives and purpose and need.

3.2.5 Determination of Impacts

The thresholds and criteria used for the impact analyses in the EIR/EIS 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 judgment; 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 effects of Alternatives 1, 2, and 3 are compared to the No Action Alternative, which is equivalent to the CEQA existing conditions baseline for the EIR/EIS, 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 *adverse effect* or *substantial adverse effect* is identified if the analysis concludes that it would cause an adverse or substantial adverse change to the environment even with the inclusion of one or more feasible mitigation measures or could not be mitigated.

The impacts and effects of each alternative, including the No Project Alternative, are discussed by resource area and alternative. Each resource area section is structured so that a bold impact statement introduces potential changes that could occur from implementation of each alternative. A discussion of how the resource area would be affected then follows the initial impact statement. Pursuant to NEPA, significance is used to determine whether an EIS or some other level of documentation is required, and once the decision to prepare an EIS is made, the magnitude of the effect is evaluated and no further judgment of significance is required. Therefore, any determinations of significance are for CEQA purposes only.

Direct impacts are those effects that would be caused by the Project and would occur at the same time and place. For example, filling of the reservoir is considered a direct impact, even though it would take time for the reservoir to be filled completely. Indirect impacts are those effects caused by the Project later in time (e.g., impacts from operations) or farther from the Project but are reasonably foreseeable (e.g., impacts downstream of the Project). Direct and indirect impacts may be either permanent or temporary. Direct and indirect impacts are evaluated in each resource chapter and could include, for example, indirect or temporary effects associated with construction and direct or permanent effects associated with operation, depending on the resource evaluated and the potential impact mechanism. These types of impacts and effects are resource-specific, and the methods used to analyze these impacts are described in each of the resource chapters.

For the purposes of CEQA and NEPA, impacts and effects are determined by comparing an alternative to the No Project Alternative, as identified above. The impact analysis also includes a discussion of the similarities and differences between Alternatives 1, 2, and 3 to enable readers to compare the mechanisms, magnitudes, and durations of the impacts associated with Alternatives 1, 2, or 3.

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 Section 2.3, *Overview of Alternatives*. 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*; Chapter 16, *Recreation Resources*; Chapter 17, *Energy*; Chapter 21, *Greenhouse Gas Emissions*; Chapter 28, *Climate Change*; and Chapter 32, *Other Required Analyses* and the supporting appendices of these chapters.

In addition, as noted in Chapter 2, *Project Description and Alternatives*, 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 Alternatives 1, 2, and 3, the impact analyses may be aggregated to reduce redundancy and provide ease of comparisons between alternatives. All alternatives have been co-equally analyzed as required by NEPA, even if alternatives are combined under subheadings.

The analyses contained in the EIR/EIS are inherently conservative (overestimated). Analyses are based on the preliminary design of the Project and on limited access to certain resources (e.g., wildlife, vegetation). As with any large infrastructure project, the Project must and will continue toward final design. Project components will be refined as the Project moves toward final design and as parcels become accessible to survey. The Authority and Reclamation have made intentionally conservative and appropriate assumptions based on reasonable facts and evidence regarding Project construction and design, where needed. In addition, the Authority and Reclamation have made intentionally conservative and appropriate assumptions regarding footprint locations and buffers to evaluate existing resources on various parcels.

3.2.6 Mitigation Measures

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.

Under NEPA, an EIS must identify relevant, reasonable mitigation measures not already included in the proposed action or alternatives to the proposed action that could avoid, minimize, rectify, reduce, eliminate, or compensate for the project's adverse environmental effects (40 Code of Federal Regulations [C.F.R.] § 1508.20). Mitigation measures are presented for each resource to avoid, minimize, rectify, reduce, eliminate, or compensate for adverse environmental effects of Alternatives 1, 2, and 3 as compared to the No Action Alternative. The Authority would be responsible for implementing all mitigation measures identified in this document.

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 (40 C.F.R. §§ 1502.14(f), 1502.16, 1508.8, 1508.20). To aid the reader, each mitigation measure is identified numerically to correspond with the number of the associated impact.

3.3 Additional Analyses

Chapters 28 through 30 address topics that are specific 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

It should be noted that NEPA focuses on the effects of climate change and sea level rise on the Project along with climate change effects that would potentially result from the Project. Climate change effects that would potentially result from the Project or that would worsen environmental impacts of the Project also require evaluation under CEQA.

Similar to the discussion 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 Project operations are evaluated. Appendix 1A contains 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)

3.5 References

3.5.1 Printed References

Bureau of Reclamation. 2020. *Record of Decision: Reinitiation of Consultation on the Coordinated Long-Term Modified Operations of the Central Valley Project and State Water Project*. February 18, 2020. Available: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=42324. Accessed: June 4, 2020.

California Department of Fish and Wildlife. 2020. *Long-Term Operation of the State Water Project in the Sacramento–San Joaquin Delta*. Incidental Take Permit No. 2081-2019-066-00. March 31, 2020. Sacramento, CA. Available: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/State-Water-Project/Files/ITP-for-Long-Term-SWP-Operations.pdf. Accessed: June 4, 2021.

National Marine Fisheries Service. 2019. *Biological Opinion on Long-Term Operation of the Central Valley Project and the State Water Project*. October 21, 2019. Available: https://repository.library.noaa.gov/view/noaa/22046. Accessed: June 4, 2021.

Sites Project Authority. 2021. *Memorandum to Modeling Assumptions File Regarding Modeling Baseline Selection*.

U.S. Fish and Wildlife Service. 2019. *Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the Central Valley Project and State Water Project*. Service File No. 08FBTD00-2019-F-0164. October 21, 2019. Sacramento, CA. Available: https://www.fws.gov/sfbaydelta/cvp-swp/documents/10182019_ROC_BO_final.pdf. Accessed: June 4, 2020.