Chapter 4
Framework for the Environmental Analysis

This chapter describes the overall framework and approach to resource impact evaluations presented in this Draft Environmental Impact Report (EIR). This chapter provides an overview of what readers will find in Draft EIR chapters and describes the key elements and analytical framework common to the respective analyses. The analysis framework described here provides readers with context to aid them during review of the document. Specifically, this chapter presents an overview of the following.

- The overall organization and content of the resource-specific analyses in the Draft EIR that meet CEQA (Pub. Resources Code § 21000 *et seq*.) content requirements.
- How resource analyses address environmental setting information, study areas for analysis, baseline assumptions for comparing the proposed project and alternatives to determine the magnitude of impact; evaluation timeframes; construction, operational, and maintenance impacts; determination of whether the magnitude of the impact is significant; alternative comparisons; and mitigation measures where the impact is determined to be significant.
- Assumptions for the analyses' level of detail.
- Approach to evaluating the study area, seismic risks, and climate change effects.

Resource-specific information about the approach and methodology for evaluating project alternatives is provided in this Draft EIR's respective resource chapters.

4.1 Organization of the Draft EIR

This Draft EIR begins with several introductory chapters and contains appendices that provide important foundations for analyses; they give detail about the history and purpose of the Delta Conveyance Project (project) (i.e., Chapter 1, *Introduction*, and Chapter 2, *Purpose and Project Objectives*), details of the proposed project and the alternatives considered (i.e., Chapter 3, *Description of the Proposed Project and Alternatives*), how alternatives were screened (i.e., Appendix 3A, *Identification of Water Conveyance Alternatives*), and the intended use of this document (Chapter 1).

Resource chapters are generally organized into sections as described below.

- **Summary Comparison of Alternatives.** This section of a resource chapter provides an overview of key impact conclusions by project alternative so readers can ascertain the comparative magnitude of impact across alternatives.
- **Environmental Setting.** This section of a resource chapter describes existing conditions at the time of the Notice of Preparation (NOP) (i.e., January 15, 2020) for each resource in a defined study area, which is the area in which impacts may occur. Study area boundaries vary for each resource topic depending on impact mechanisms and the extent of the area in which impacts are expected to occur for a resource. Unless otherwise noted, the existing conditions described in the *Environmental Setting* section are used as the CEQA baseline when comparing alternatives to determine the magnitude of impact.

- **Applicable Laws, Regulations, and Programs.** The applicable laws, regulations, and programs considered in the assessment of project impacts are provided in the *Methods for Analysis* subsection or the impact analysis, as appropriate, in Chapters 7–32. Applicable laws, regulations, and programs associated with state and federal agencies that have a review or potential approval responsibility have also been considered in the development of CEQA impact thresholds or are otherwise considered in the assessment of environmental impacts. A listing of some of the agencies and their respective potential review and approval responsibilities, in addition to those under CEQA, is provided in Chapter 1, Table 1-1. A listing of some of the federal agencies and their respective potential review, approval, and other responsibilities, in addition to those under NEPA, is provided in Chapter 1, Table 1-2.
- **Environmental Impacts.** This section of a resource chapter describes the direct, indirect, and cumulative environmental impacts associated with a particular resource that may result from construction, operation, or maintenance of the project and is organized into subsections, as described below.
    - **Methods for Analysis.** This subsection of a resource chapter describes the resource-specific methodology used to identify and assess potential environmental impacts that may result from implementing project alternatives.
    - **Thresholds of Significance.** This subsection of a resource chapter describes a threshold of significance as an identifiable qualitative, quantitative, or performance-level threshold, where exceedance of the threshold would be determined to be a significant environmental impact, and being under the threshold would likely be considered a less-than-significant impact.
    - **Impacts and Mitigation Approaches.** This subsection of a resource chapter describes direct and reasonably foreseeable indirect environmental impacts associated with the No Project Alternative and project alternatives, explains the CEQA significance conclusions, and identifies mitigation measures that could be used to reduce or avoid potentially significant environmental impacts. For each resource, specific measures are proposed when feasible and necessary to avoid, reduce, minimize, or compensate for significant environmental effects of the project alternatives. This is consistent with CEQA's specific requirement that, whenever possible, agency decision makers adopt feasible mitigation to reduce a project's significant impacts to a less-than-significant level (CEQA Guidelines § 15126.4). For each resource, the potentially significant environmental impacts associated with mitigation measures are discussed and analyzed. The approach in this Draft EIR also includes terminology relevant to an Environmental Impact Statement (EIS) to aid in coordination efforts with federal environmental impact analysis.
    - **Cumulative Analysis.** This subsection of a resource chapter discusses whether there is a cumulative significant environmental impact from the project's effects in combination with those of closely related past, present, and reasonably foreseeable probable future projects and determines if the proposed project or any project alternative makes a cumulatively considerable contribution to any cumulatively significant impacts. *Cumulatively considerable* means that "the incremental effects of the individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines § 15130(a)).

In this Draft EIR, the following four resource chapters have a slightly different chapter structure or approach to impact analysis.

- Chapter 5, *Surface Water*
- Chapter 6, *Water Supply*
- Chapter 30, *Climate Change*
- Chapter 31, *Growth Inducement*

These four chapters may describe potential changes to a resource where change to that resource alone is not considered an environmental impact under CEQA. Additionally, these resource chapters do not determine the level of significance of change. However, these chapters are important to this Draft EIR because they provide a basis for understanding impact assessments associated with other resource chapters in this document. In some cases, these resource topics are related to resources not considered part of the physical environment under CEQA or instances where CEQA specifically directs they are not within the scope of the environmental impact analyses required. Nevertheless, these topics remain important to the California Department of Water Resources (DWR) and, in the interest of full disclosure, are presented as part of this EIR.

In addition, the two chapters listed below, which are part of this EIR, are expected to be included as part of the U.S. Army Corps of Engineers (USACE) EIS for compliance with NEPA.

- Chapter 17, *Socioeconomics*
- Chapter 29, *Environmental Justice*

4.1.1 Approach to CEQA Analysis

CEQA requires preparation of an EIR when there is substantial evidence in light of the whole record that supports a fair argument that an agency action, such as approval and implementation of the proposed project, may have a significant impact on the environment. This Draft EIR discloses and presents analysis of the potential environmental impacts[1] of the alternatives and describes ways to mitigate or avoid potentially significant effects. Pursuant to CEQA Guidelines Section 15126.6(a), this Draft EIR describes a range of reasonable alternatives that would feasibly attain all or most of the basic project objectives and, where possible, avoid or substantially lessen significant environmental impacts.

Typically, environmental impacts are examined for a specific project and alternatives so that, to the extent possible, once the EIR is certified, no further CEQA analysis is required. To accomplish this for the project, this Draft EIR relies on information in two Engineering Project Reports (EPRs), *Volume 1: Delta Conveyance Final Draft Engineering Project Report—Central and Eastern Options* and *Volume 1: Delta Conveyance Final Draft Engineering Project Report—Bethany Reservoir Alternative,* developed by the Delta Conveyance Design and Construction Authority at the direction of DWR (Delta Conveyance Design and Construction Authority 2022a, 2022b). Refer to Section 4.2, *Analysis Level of Detail*, for a discussion of the analytical detail provided in this Draft EIR.

[1] For the purposes of this Draft EIR, any use of *impact* or *significant impact* for the purposes of CEQA conclusions refers to environmental impacts, not impacts generally.

A comprehensive summary of significance conclusions for each project alternative and recommended mitigation is provided in the *Executive Summary*. Where project alternatives share common features, this Draft EIR has condensed information to be more concise and avoid repetition.

4.1.1.1 Description of Environmental Setting

The environmental setting section in each resource chapter identifies and characterizes existing conditions for the resource and describes historical changes and trends affecting the resource based on the best available information. Published information, aerial photography, modeling analyses, and personal communications with resource specialists were used to characterize existing conditions.

Where possible, this information was supplemented through site-specific assessment(s). In an effort to conduct further studies and to gather additional relevant information, DWR has gained access to most relevant public and some private properties and has attempted to gain access to other public and private properties; however, several areas were not accessible, and other methods of data collection were used to assess existing conditions.

In addition, the Governor's March 2020 Executive Order N-33-20 ordered all California residents to stay at home because of the coronavirus disease 2019 (COVID-19) pandemic, precluding field studies. Executive Order N-33-20 was further modified on August 28, 2020; however, field studies remained limited in scope. In some cases, if data from 2020 (i.e., when the NOP was published or immediately following) were not available or would not be an accurate reflection of typical conditions because of the COVID-19 pandemic, the most recent official data were determined to be the accurate reflection of conditions existing at the time the NOP was published and were used as a proxy when characterizing existing conditions.

4.1.1.2 Baseline Assumptions and Alternative Comparisons

Following CEQA Guidelines Section 15125(a) requirements and case law, the CEQA baseline for this Draft EIR used to assess the significance of impacts of the project alternatives is the existing conditions at the time of the NOP (January 15, 2020), unless otherwise noted. Each project alternative is evaluated to determine the potential for a physical effect on the environment compared to existing conditions. The existing conditions assumptions for this Draft EIR are defined further in Appendix 3C, *Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions*; these generally include environmental conditions, facilities, and ongoing programs that existed at the time of the NOP that could affect or could be affected by implementation of the project alternatives. For a full copy of the NOP, refer to Appendix 1A, *July 2020 Delta Conveyance Project Scoping Summary Report and December 2020 Addendum A.*

The comparison of existing conditions vs. the proposed project and project alternatives discloses near-term impacts associated with implementing the project alternatives and is the basis for the CEQA significance conclusions in Chapters 7–32 of this Draft EIR.

Several other comparisons (listed below) are also presented in each resource chapter or, where not directly relevant to CEQA impact analysis and conclusions, in appendices.

- Existing conditions in 2020 vs. No Project Alternative in 2040.[2]
    - As explained in Chapter 3 and Appendix 3C, the No Project Alternative in 2040 includes predictable changes that would be reasonably expected to occur in the foreseeable future if the project were not approved. This includes a conservative climate change and sea level rise assumption, which is further described in Section 4.1.1.7, *Consideration of Seismic Risks and Climate Change on Project Alternatives*, and Chapter 30. This also includes the potential environmental impacts that may occur if project participants were to expand their local water supply sources in lieu of water supplied through the project.

Additionally, the Draft EIR includes appendices that present the following longer-term analyses in future years.

- Existing conditions in 2020 vs. No Project Alternative in 2040
- No Project Alternative (2040) vs. project alternatives in 2040

These longer-term analyses are presented in the following appendices.

- Appendix 5B, *Surface Water 2040 Analysis*
- Appendix 6A, *Water Supply 2040 Analysis*
- Appendix 7A, *Flood Protection 2040/2072 Analysis*
- Appendix 8C, *Groundwater 2040 Analysis*
- Appendix 9L, *Water Quality 2040 Analysis*
- Appendix 12C, *Fish and Aquatic Resources 2040 Analysis*
- Appendix 13F, *Terrestrial Biological Resources 2040 Analysis*
- Appendix 15C, *Agricultural Resources 2040 Analysis*
- Appendix 16B, *Recreation 2040 Analysis*
- Appendix 20C, *Delta Conveyance 2040 Traffic Analysis*
- Appendix 22B, *Energy 2040 Analysis*
- Appendix 23F, *Air Quality and Greenhouse Gases 2040 Analysis*
- Appendix 24E, *Noise and Vibration 2040 Analysis*
- Appendix 26A, *Public Health 2040 Analysis*

These appendices were prepared for resource chapters where discussion is based on modeled analysis results that address potential changes when conveyance facilities are fully operational and also consider changes as a result of climate change and sea level rise by 2040. Details about how climate change and sea level rise were addressed in water modeling are included in Appendix 5A, *Modeling Technical Appendix*.

These longer-term analyses were performed outside of CEQA requirements to provide information about possible future environmental conditions once conveyance facilities are operational. Because these analyses are provided for informational purposes, no CEQA significance conclusions are

[2] Because the No Project Alternative in 2040 is the only No Project scenario being analyzed, it is referred to throughout this document as *No Project* or *No Project Alternative*.

presented for potential impacts, and no mitigation measures are recommended to reduce potential impacts.

Because the proposed project and project alternatives would be operational far into the future, DWR provided a comparison of conditions in a longer-term (50-year) future timeframe as well.

- Existing conditions (2020) vs. No Project Alternative (2070)
- No Project Alternative (2070) vs. proposed project alternative (2070)

The 2070 analyses qualitatively discuss the potential for longer-term operational changes and impacts based on trends and conditions for water demands and supply in California, as well as continuing seismic risk, climate change, and sea level rise. The 2070 analyses consider future conditions with an anticipated further decrease in reliability of the State Water Project and Central Valley Project deliveries due to sea level rise and climate change. These analyses are provided in Appendix 4A, *Considerations of 2070 Conditions.*

4.1.1.3 Analysis of Project Effects

Each resource chapter provides comprehensive analyses of construction, conveyance facility operations, and facility maintenance impacts depending on specific impact mechanisms relevant to each resource topic. With the exception of Chapters 5, 6, 30, and 31, analyses evaluate the direct and reasonably foreseeable indirect impacts associated with implementing the project alternatives. The project alternatives are evaluated at an equivalent level of detail. The analysis provided in each chapter is specific to the environmental resource being evaluated, the data available, and the impact mechanisms expected as a result of the project. Project elements that are not expected to have impacts on a given resource are not discussed at the same level of detail as project elements that are expected to have environmental impacts. For environmental impacts associated with facility footprints, every project element described in Chapter 3 is analyzed to determine if it could affect or physically change a resource. Each of the facility element impacts that could affect a resource are then aggregated with all the other elements that could affect that resource to ensure that the whole impact is disclosed. When many project elements could contribute to an impact, the impact analysis discussions often do not list separately each element contributing to the impact to simplify and synthesize the analyses for the reader.

For resource topics that could be affected by changes associated with operating the conveyance facilities, such as changes in river flows, modeled hydrology and hydrodynamic results were used to compare project alternatives at the year 2020 against existing conditions at the year 2020. This approach has been taken to ensure that the impacts of project alternative operations are disclosed without other factors, such as climate change and sea level rise, included in the analysis. This approach also helps to focus the analysis and disclosure of impacts on those attributable to the project alternatives alone versus some other factor that may affect resource conditions when compared to existing conditions. In this way, the impacts and mitigation measures recommended to reduce these impacts are those that would occur under project alternative conditions.

No Project Alternative analyses are presented first in each resource impact section followed by analyses of the project alternatives. As mentioned above, the No Project Alternative analyzes a scenario that includes climate change and sea level rise, as well as projects that would occur if the Delta Conveyance Project does not move forward. The *No Project Alternative* section steps through all of the impact mechanisms but does not include impact subheadings. Additionally, this

information is included for disclosure purposes, so it does not include a CEQA conclusion section or propose mitigation.

To reduce repetition and to aid evaluation of impacts across alternatives, analysis is organized by impact, with all of the project alternatives evaluated together under each impact. Where alternative impact mechanisms are similar, impacts for multiple alternatives may be discussed together with supporting data for each alternative presented to indicate the relative magnitude of impacts. For example, where alternatives would have varying magnitudes of impacts on a sensitive natural community, the discussion presents the magnitude range and supports it with tabulated data that detail the habitat conversion effects of each alternative. This approach provides detailed information about the effect of each alternative while minimizing repetition.

On the other hand, where impact mechanisms are different for one or more alternatives, even if the ultimate impact determination is the same, alternatives are discussed separately under headings that name the respective alternatives (e.g., "Alternatives 1, 2a, 2b, 2c"). This results in discussion of two or more groups of alternatives under a given impact heading because there are distinct impact mechanisms.

Throughout this Draft EIR, impacts are identified as temporary or permanent. These terms apply differently to different resources. Where relevant and used as part of the analysis, they are defined in the respective resource chapter. Because of the nature of the impact, some impacts are treated as permanent, even though the impact mechanism would end following project construction. For example, impacts on terrestrial biological resources that would end following construction activities are nonetheless treated as permanent impacts for the purposes of impact analysis if the resource would be removed or lost and not replaced at its original site. In some cases, impacts were characterized as permanent where the ability to replace or successfully restore the resource following construction was uncertain or when the construction period would extend for multiple years. Characterizing such impacts as permanent in this manner is conservative. For other resources, however, such as noise, when construction ceases, so do impacts associated with construction. In such cases, impacts are characterized as temporary.

Resource chapters also provide analyses of the potential effects that could result from operation (e.g., north Delta diversions) and maintenance of the water conveyance facilities. Evaluation of potential operational effects include estimating the potential changes to reservoir water levels and storage and downstream surface water effects using hydraulic modeling results. These model-based analyses are primarily included in the following chapters.

- Chapter 5, *Surface Water*
- Chapter 6, *Water Supply*
- Chapter 7, *Flood Protection*
- Chapter 8, *Groundwater*
- Chapter 9, *Water Quality*
- Chapter 12, *Fish and Aquatic Resources*

Please refer to these chapters and their associated appendices for more detail.

Construction Schedules

Chapter 3 summarizes the conveyance facility phased construction schedule to aid readers in understanding the estimated overall 12- to 14-year facility construction period, depending on alternative. Chapter 3 also discloses expected construction durations for individual facilities (e.g., the new north Delta intakes, estimated to last approximately 6.5 years) and phases of the facility construction process. The schedule summary is based on a detailed construction schedule and sequencing developed for the project. Where appropriate, resource impact analyses use the detailed construction schedule and sequencing information to estimate potential impacts (i.e., air quality, noise, and transportation impacts). When resource impacts are isolated at specific construction sites, the duration and phasing for construction of that facility is identified to estimate the potential impact duration (e.g., the noise impacts of vibratory pile driving at the intake sites are estimated to occur for approximately 255 hours at intermittent times during the 6.5-year intake construction phase). This information is intended to accurately characterize the impact at a construction location and to help readers understand the temporal extent of an impact at a facility construction site.

Concurrent Project Effects

Impact analyses presented in this Draft EIR have been designed to ensure the whole of the project for each project alternative is evaluated for each resource topic in a synthesized manner. Because of the large regional scale of the project alternatives, project construction activities are expected to occur at multiple conveyance facility sites simultaneously during the construction period. The collective environmental impacts on each resource are evaluated using geographic information system (GIS) analyses to describe the aggregated effect on certain resources, such as agricultural land, wildlife habitat, or cultural resources.[3] For other resource topics, such as air quality and transportation, a comprehensive project schedule with estimates of construction vehicle and equipment use was used to estimate the peak effects on these resources when multiple construction sites are expected to be active at the same time.

Environmental Commitments and Best Management Practices

The CEQA Guidelines instruct lead agencies to "distinguish between the measures which are proposed by project proponents to be included in the project and other measures proposed by the lead, responsible or trustee agency or other persons" in their EIRs (CEQA Guidelines § 15126.4(a)(1)(A)). As used in this Draft EIR, environmental commitments and best management practices (BMPs) are incorporated into project design and construction (see Appendix 3B, *Environmental Commitments and Best Management Practices*). Environmental commitments are intended to anticipate and possibly avoid or minimize environmental or community impacts; BMPs are well-established, generally applicable practices or requirements that are incorporated into a project's engineering, design, and construction process. For each project alternative, DWR has committed that environmental commitments and BMPs would be incorporated into the Mitigation Monitoring and Reporting Plan and implemented if the project is approved.

[3] GIS is a conceptualized framework that captures and analyzes spatial and geographic data. GIS applications are computer-based tools that allow users to create interactive queries (i.e., user-created searches), store and edit spatial and nonspatial data, analyze spatial information output, and visually share the results of these operations by presenting them as maps.

4.1.1.4 CEQA Conclusion

Each impact addressed in the *Impacts and Mitigation Approaches* sections of most resource chapters are followed by a CEQA conclusion (or conclusions) explaining how significance conclusions were determined and referencing substantial evidence supporting the conclusion from the impact analyses.

The *CEQA Conclusion* section synthesizes the impacts of the project alternatives compared to the existing conditions and the significance threshold described for each resource. If substantial evidence exists to support a conclusion that an impact would have the potential to exceed a significance threshold, the conclusion identifies the impact as significant. The CEQA conclusion is based on consideration of construction impacts and operational and maintenance impacts, taking into account any environmental commitments and BMPs that are built into the project description. If feasible mitigation is available to avoid, reduce, minimize, or compensate for significant environmental impacts, those mitigation measures are described following the CEQA conclusion. A final CEQA conclusion is then stated determining the significance of the impact after mitigation measures are implemented.

A *significant effect on the environment* is defined as a substantial or potentially substantial adverse change in the environment (Pub. Resources Code § 21068) as judged by comparing impacts against defined thresholds of significance. Where significant impacts are identified, potentially feasible mitigation measures that could reduce the level of significant impacts are presented, if available. Please refer to Section 4.1.1.5, *Mitigation Approaches*, for additional information about mitigation. The impact analyses and CEQA conclusions for the project alternatives also consider all impact mechanisms that could affect a resource together in a synthesized manner for construction, operations, and maintenance.

Following the CEQA conclusion provided for project alternatives, this Draft EIR presents the potential impacts that could result from the implementation of the Compensatory Mitigation Plan (CMP) (Appendix 3F, *Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources*) and other mitigation measures proposed. Impacts associated with the CMP and other mitigation measures are considered along with the facility construction, operations, and maintenance effects in determining the overall significance of the project alternative impacts. In some cases, further mitigation is proposed if the CMP or other mitigation measures create additional impacts.

4.1.1.5 Mitigation Approaches

Specific measures are proposed when necessary to avoid, reduce, minimize, or compensate for significant environmental impacts of the project alternatives. Mitigation is presented to meet CEQA's specific requirement that, whenever possible, agency decision makers adopt feasible mitigation to reduce a project's significant impacts to a less-than-significant level. To the extent possible, project alternatives were designed to avoid and minimize surface impacts through site optimization, use of subsurface tunnels for water conveyance, reduced space requirements for intake screens, and evaluation of a range of conveyance capacity alternatives.

Where avoidance of potentially significant impacts is not possible, this Draft EIR employs a variety of mitigation types to reduce significant impacts, including resource-specific mitigation measures and compensatory mitigation. Each of these approaches is described below.

Mitigation Measures

The term *mitigation measure* is applied in this Draft EIR to designate specific measures proposed to reduce or eliminate environmental impacts caused by the project or project alternatives. Mitigation measures generally describe who will implement the mitigation, how the mitigation will be implemented, and when and where the mitigation will occur. This Draft EIR addresses whether the mitigation presented would reduce the impact to a less-than-significant level based on the threshold of significance presented in each resource chapter. Mitigation measures included in this Draft EIR are considered potentially feasible; however, the ultimate determination of feasibility is made by the lead agency prior to certification of the Final EIR and project approval.

Mitigation measures are described in full only once at the first mention and then referenced by number and name thereafter. In some cases, mitigation measures may only apply to specific project alternatives. In those instances, a subheading for the alternatives for which the mitigation measure would apply is provided immediately following the mitigation measure heading.

Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources

The CMP (Appendix 3F) identifies potential compensatory mitigation options to address impacts on habitat for special-status species and on jurisdictional wetlands and other waters (i.e., aquatic resources) that may result from the construction and operation of the project.[4] The CMP describes several habitat mitigation sites where habitat creation and enhancement could take place to offset losses of aquatic resources and species habitat or otherwise mitigate project impacts and discusses other approaches that may be used to secure appropriate compensatory mitigation for the project.

The CMP outlines three primary approaches in providing compensatory mitigation to mitigate impacts associated with the construction and operation of the project alternatives. The first approach is to develop and implement several initial mitigation actions at specific sites that would provide compensatory mitigation for many of the affected special-status species habitats and aquatic resources. The second approach is to use existing or proposed mitigation banks to secure credits for certain types of habitats and natural communities, including vernal pools and alkaline seasonal wetlands, as well as habitat for species such as California tiger salamander and California red-legged frog. This second approach also includes the potential use of site protection instruments, such as conservation easements, to protect or enhance existing land uses that provide habitat function for certain species, such as Swainson's hawk, greater sandhill crane, and tricolored blackbird, that may use certain agricultural crops or other habitat types for foraging or roosting and manage those lands for the target species in perpetuity. The third approach, a combination of these approaches, is to propose a mitigation framework under which future compensatory mitigation actions may be delivered for tidal freshwater perennial aquatic (tidal channel), tidal freshwater emergent wetland, and channel margin communities. Each of these approaches is described in greater detail in Appendix 3F, Section 3F.4, *Mitigation Work Plan*.

The CMP has been developed in coordination with terrestrial biological resources impact analysis results discussed in Chapter 13, *Terrestrial Biological Resources,* and the fish and aquatic biological resources impact analysis in Chapter 12, *Fish and Aquatic Resources*.

[4] Although there are many potential compensatory mitigation needs for resources as described in this Draft EIR, this document focuses on the needs for special-status species and aquatic resources.

Mitigation Measures with Potential to Cause Environmental Effects

In some cases, mitigation measures proposed to reduce impacts could also result in physical changes to the environment. Table 4-1 provides a summary of the mitigation measures that could result in environmental effects.

The mitigation measures with potential to cause environmental impacts under CEQA are evaluated in Chapters 7–32. Most of these potentially significant impacts would be reduced to a less-than-significant level as a result of the effects of other applicable mitigation measures.

Table 4-1. Summary of Mitigation Measures with Potential to Cause Environmental Impacts

Mitigation Measure	Summary of Measure
Compensatory Mitigation Plan	See previous section, *Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources*, and Appendix 3F, Attachment 3F.1, *Compensatory Mitigation Design Parameters*, for a summary of the approaches and measures proposed in the CMP.
Mitigation Measure BIO-2c: *Electrical Power Line Support Placement*	Proposed transmission lines will be placed on existing poles where possible. If this option is not possible, then implementing a siting design for new poles and towers will avoid sensitive terrestrial and aquatic habitats to the extent feasible. The electrical power line alignment will also avoid existing structures where feasible.
Mitigation Measure AQUA-1a: *Develop and Implement an Underwater Sound Control and Abatement Plan*	DWR will develop and implement an underwater sound control and abatement plan that could include installing an attenuation device, such as a bubble curtain, or other feasible mechanism to minimize noise, such as cofferdam dewatering, air-filled fabric barriers, isolation piles, or piling-specific cofferdams.
Mitigation Measure AG-3: *Replacement or Relocation of Affected Infrastructure Supporting Agricultural Properties*	DWR will construct new water wells and relocate or replace wells, pipelines, power lines, drainage systems, and other infrastructure needed to support ongoing agricultural uses.
Mitigation Measure AES-1a: *Install Visual Barriers between Construction Work Areas and Sensitive Receptors*	DWR will evaluate construction routes and identify portions of routes where using temporary visual barriers would minimize visual impacts associated with construction that will affect sensitive receptors (i.e., residents and recreational areas).
Mitigation Measure AES-1c: *Implement Best Management Practices to Implement Project Landscaping Plan*	DWR will apply additional landscape treatments and use best management practices as part of project landscaping. Trees, shrubs, and grasslands native to the study area will be planted to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained. Because these plants will be native, they will not require excessive irrigation and, therefore, will not increase demand for water.
Mitigation Measure AES-4c: *Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences*	DWR will evaluate construction routes and identify portions of routes where using visual barriers would minimize new light and glare from construction truck headlights and the impact on nearby residents.

Mitigation Measure	Summary of Measure
Mitigation Measure CUL-2: *Conduct a Survey of Inaccessible Properties to Assess Eligibility, Determine if These Properties Will Be Adversely Affected by the Project, and Develop Treatment to Resolve or Mitigate Adverse Impacts*	DWR will ensure that a survey and evaluation report is completed within all areas where effects on built-environment historical resources may occur, including areas where a built resources inventory has not been completed.
Mitigation Measure AQ-9: *Develop and Implement a GHG Reduction Plan to Reduce GHG Emissions from Construction and Net CVP Operational Pumping to Net Zero*	DWR will develop a GHG Mitigation Program in collaboration with regional air quality management districts that will consist of feasible options to reduce construction-related GHG emissions to net zero. The GHG Mitigation Program could include expanding the number of subsidence reversal and/or carbon sequestration projects currently being undertaken by DWR on Sherman and Twitchell Islands (Strategy 3.c.xii).
Mitigation Measure PH-1b: *Develop and Implement a Mosquito Management Plan for Compensatory Mitigation Sites on Bouldin Island and at I-5 Ponds*	To aid in vector management and control, DWR will develop and implement a mosquito management plan for the compensatory mitigation sites where freshwater marsh, lake/pond, riparian, or seasonal wetland habitat is created or enhanced on Bouldin Island and at I-5 Ponds. The mosquito management plan could include routine vegetation removal, excavation of certain locations to reduce mosquito habitat, and use of larvicides or adulticides.

CMP = Compensatory Mitigation Plan; CVP = Central Valley Project; DWR = California Department of Water Resources; GHG = greenhouse gas; I- = Interstate.

As mentioned above, CEQA requires an evaluation of mitigation measure impacts in the environmental document. Each resource chapter includes a discussion of potential impacts associated with construction, operations, and maintenance necessary to implement the compensatory mitigation and other mitigation. As described in Section 4.1.1.4, *CEQA Conclusion*, following project construction and operations and maintenance analysis, a CEQA conclusion is reached in each resource chapter, and mitigation is proposed if necessary. Following that is a discussion of the potential effects that could occur related to implementation of the CMP and other mitigation measures. Mitigation impacts are considered along with the facility construction, operations, and maintenance effects in determining the overall significance of the project. In some cases, further mitigation is proposed if the CMP or other mitigation creates additional impacts. Because some details associated with implementing certain elements of the CMP and other mitigation measures are not known at this time, the analysis provided in each of the resource chapters discloses potential impacts that could be anticipated based on available information but provide CEQA impact determinations only if sufficient information and evidence are available.

4.1.1.6 Cumulative Impacts

A cumulative impacts analysis follows discussion of the project alternatives' potential impacts. CEQA requires an analysis of a project's cumulative contribution to any cumulatively significant impact (CEQA Guidelines §§ 15130 and 15064(h)). The CEQA Guidelines define a *cumulative impact* as two or more individual impacts that, when considered together, are significant or that compound or increase other significant environmental impacts. The incremental impact of a project may be cumulatively considerable when viewed in the context of other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually

minor but collectively significant projects taking place over a period of time (CEQA Guidelines § 15355(b)).

In determining whether a project's effects on a resource would be cumulatively considerable, the following five factors are considered.

- The geographic scope of the cumulative impact area
- The timeframe within which project-specific impacts could intersect with the impacts of other projects
- Whether a significant adverse cumulative condition presently exists[5] to which project impacts could contribute
- The magnitude of the incremental project-specific contribution to cumulative conditions
- Whether any cumulative impact is significant

The analysis of cumulative impacts is a two-step process. First, the Draft EIR should determine whether the combined effects from both the proposed project and other closely related projects would be *cumulatively significant* (i.e., result in a significant cumulative impact). Second, if it is determined those combined effects are cumulatively significant, the Draft EIR should determine whether the proposed project's incremental effect is *cumulatively considerable* and thus significant (CEQA Guidelines § 15355(b)(3)).

For the most part, cumulative impact assumptions for an EIR include programs, projects, and policies included in existing conditions and No Project Alternative (2040) assumptions and reasonably foreseeable, probable future programs and projects.

4.1.1.7 Consideration of Seismic Risks and Climate Change on Project Alternatives

All project alternatives would involve the construction of new infrastructure that would be designed and engineered in anticipation of sea level rise, floods, and the potential for major seismic events. CEQA does not require an analysis of impacts of the environment on the project (e.g., the impacts of seismic activity on the project or climate change effects on the project).

As stated above, analyses of the project alternatives in this Draft EIR's individual resource chapters for the purposes of CEQA, do not consider sea level rise and climate change in order to isolate impacts that are directly attributable to the project. However, because climate change and seismic risk do and will present a threat to the Delta, new infrastructure, and reliable State Water Project supplies, this Draft EIR also includes analysis beyond the requirements of CEQA using hydrological modeling scenarios at years 2040 and 2070. The purpose of these analyses is to disclose whether the impact conclusions in Chapters 7–32 would change when considered under future conditions when construction is complete, the project is fully operational, and when combined with anticipated hydrologic changes as a result of climate change, such as changes in precipitation and sea level rise. It also provides estimates of how well the proposed project and project alternatives could perform under certain climate change and sea level rise scenarios.

[5] This conservative factor is considered to determine if the project's contribution is significant when considering past projects that have created resource impacts that the project could make measurably worse.

At DWR's direction, EPRs were prepared by the Delta Conveyance Design and Construction Authority.[6] The EPRs document the conceptual engineering efforts for project alternatives (Delta Conveyance Design and Construction Authority 2022a, 2022b). The EPRs are among the technical studies supporting this Draft EIR. Among other things, the EPRs provide technical background information about geologic conditions based on available data, seismic hazards, and potential flood risks, including sea level rise due to climate change, to which conveyance facilities may be subjected. The EPRs also describe some of the design criteria, government codes, and safety standards that would be applied to ensure new conveyance facilities would withstand design-level catastrophic events. Depending on the proposed facility type, these criteria include the ability to withstand 6.5- to 6.9-magnitude seismic events with peak horizontal ground accelerations ranging from 0.3 to 0.85 g and 200-year flood events combined with sea level rise at the year 2100.[7]

4.2 Analysis Level of Detail

According to CEQA Guidelines Section 15151,[8] "[a]n EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental impacts. An evaluation of the environmental effects of a project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." CEQA Guidelines Section 15204 explains that what is "reasonably feasible" inevitably varies from project to project, based on factors such as (1) the magnitude of the project at issue, (2) the severity of its likely environmental impacts, and (3) the geographic scope of the project. Thus, for complex projects covering large geographic areas such as the Delta Conveyance Project, what is reasonably feasible is different than what could be reasonably accomplished for smaller projects with relatively simple analysis. The degree of specificity required in an EIR depends on the type of project being analyzed (CEQA Guidelines § 15146).

Project design information about the water conveyance facilities, project operations and maintenance, and a majority of the CMP[9] is available at a level of detail sufficient for a project-level analysis. As such, project alternatives in their entirety are analyzed at a project level[10] of detail in this Draft EIR. Chapter 3, *Description of the Proposed Project and Alternatives*, describes project components for each alternative in detail.

[6] The EPRs are available on the Delta Conveyance Design and Construction Authority website at https://www.dcdca.org/.

[7] The 10.2 feet of sea level rise is based on California's Ocean Protection Council projections for Extreme (H++) Risk Aversion scenarios (see Appendix 5A, Section F, *Sea Level Rise and Delta Water Quality Modeling*). This was assumed for the year 2100 for the purposes of the Draft EIR.

[8] See also CEQA Guidelines Section 15147, which states "[t]he information contained in an EIR shall contain summarized technical data, maps, plot plans, diagrams, and similar information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public."

[9] This EIR discloses the environmental impacts of constructing the CMP. It is acknowledged that some measures in the CMP may be refined or modified in the future, and, at that time, DWR would evaluate the necessity to do supplemental environmental documentation for those refinements.

[10] Specific data about the location, design, schedule, and operation of the various alternatives have been developed. Available data include specific footprints for facilities, locations of access roads and staging areas, estimates of crew sizes and construction equipment and vehicle use, and construction schedules, as well as employees and equipment required for operations. This information was used to analyze, at the project level, the effects of implementing the project.

Project elements are analyzed at a degree of specificity that corresponds to the degree of specificity involved in the underlying activity that is described in the Draft EIR (CEQA Guidelines § 15146). Project components such as the Community Benefits Program and portions of the CMP such as the tidal habitat mitigation framework are analyzed fully given the level of detail at which these elements are currently developed. For these project activities, the analysis level of detail reflects the available detail of the activity description.

4.3 Additional Analyses of Potential Future Conditions

CEQA requires that existing conditions at the time of the NOP be used as the basis for evaluation, and these analyses are presented in Chapters 7–32. Because water management is highly dynamic and there is uncertainty about future hydrologic conditions, climate change, and regulatory requirements, several additional analyses were conducted to evaluate whether any of the impact conclusions documented in Chapters 7–32 would change when considered under alternate baseline conditions or future conditions. These analyses, although not required by CEQA, are presented in several appendices as discussed below in order to provide additional information about how the project might operate in future conditions and what potential impacts could be anticipated as a result of the proposed project.

Appendix 4A, *Consideration of 2070 Conditions*, is similar to the analyses that compare the No Project Alternative (2040) vs. project alternatives in 2040 except that it compares a No Project Alternative at 2070 vs. the proposed project at 2070. The purpose of this analysis is to provide additional information regarding the potential impacts and benefits of the proposed project under a possible longer-term future scenario but is not used as the basis for CEQA findings.

Appendix 4B, *North Delta Diversion Priority Sensitivity Analysis*, evaluates a potential scenario that prioritizes diversions at the proposed north Delta intakes during certain times of the year over the existing south Delta intakes. The purpose of this analysis is to assess whether operational flexibility to improve aquatic conditions could change the types of effects disclosed in Chapters 7–32 of the Draft EIR. While the Draft EIR assesses the potential impacts associated with the operations as proposed, the project objectives include the potential for operational flexibility to improve aquatic conditions, and this appendix considers whether operational flexibility could change the types of effects disclosed in the main body of the Draft EIR.

Appendix 4C, *Alternate Regulatory Scenario Sensitivity Analysis*, evaluates a potential future condition in which regulations regarding water quality and Delta outflow in the Delta may change based on other regulatory processes. The purpose of this analysis is to describe these potential future regulatory conditions and provide a description of the operation of the proposed project under future regulatory conditions. This analysis is not used as the basis for CEQA findings.

Appendix 30A, *CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections*, is similar to the analyses that look at the No Project Alternative (2040) vs. project alternatives in 2040, except that it is focused on the proposed project (2040) compared to two alternate climate change scenarios at 2040. The purpose of this appendix is to acknowledge that there is a great deal of uncertainty regarding the future projections of climate change and sea level rise and identify

whether the proposed project impacts disclosed in Chapters 7–32 would remain similar or differ under different climate change and sea level rise assumptions at 2040.

4.4 Relation to U.S. Army Corps of Engineers EIS and NEPA Compliance

This Draft EIR has been designed to meet the content and process requirements of CEQA and its guidelines, as described above. Because the project would also require approval by USACE for authorization under the Rivers and Harbors Act and Clean Water Act, USACE, as the federal lead agency for NEPA, is preparing a separate EIS to determine whether the project (or alternatives) would significantly affect the quality of the human environment within USACE permit authorities. This Draft EIR includes some information and analysis approaches that are not required by CEQA but are useful to reviewers for informational purposes and for the USACE's EIS in compliance with NEPA and the NEPA regulations, including the following.

- Focusing analyses on the evaluation and comparison of alternatives to address NEPA's focus on alternatives.
- Providing an equivalent level of alternative descriptions and analyses versus the comparative alternative analyses (i.e., impacts of project alternatives being done in context of the impacts of the proposed project) normally provided for CEQA documents.
- Providing analyses normally reserved for NEPA documents, including socioeconomics and environmental justice.
- Preparing appendices and analyses that mirror the requirements of NEPA, such as appendices for cultural resources, air quality, and transportation effects.
- Preparing appendices and analyses that compare the alternatives at 2040 to a No Project baseline at 2040 (see list in Section 4.1.1.2, *Baseline Assumptions and Alternative Comparisons*).
- Providing robust analyses and impact assessment of USACE jurisdictional wetlands and waters of the United States to support the Clean Water Act Section 404 process.

4.5 U.S. Bureau of Reclamation or Central Valley Project Contractor(s)

At the time of this Draft EIR, Reclamation or a CVP contractor (or contractors) have not expressed interest in participating in the Delta Conveyance Project as project proponents. As described in Chapter 1, *Introduction*, and in Section 4.1, *Organization of the Draft EIR*, this Draft EIR has been developed with NEPA compliance in mind such that a Federal agency could use the information in the Draft EIR to support future NEPA compliance. Should Reclamation or one or more CVP contractors elect to participate (CVP participation), Reclamation's action in relation to the proposed project or alternatives may include adjustment to CVP operations in the Delta to accommodate new conveyance facility operations, in coordination with SWP operations and within regulatory requirements.

Potential direct and indirect impacts of CVP participation are evaluated in the Draft EIR under Alternatives 2A and 4A (central and eastern alignments, respectively). These two alternatives describe potential CVP participation as a result of constructing and operating infrastructure linking the project to the Jones Pumping Plant, allowing 1,500 cfs delivery to Reclamation of the total project capacity of 7,500 cfs.

Alternative 5 (Bethany Reservoir alignment) was identified as the proposed project based on preliminary findings from the impact analysis and would have a total capacity of 6,000 cfs. Alternative 5 does not include CVP participation. If there is CVP participation in Alternative 5, the overall capacity evaluated in the Draft EIR would remain the same, as would the operational assumptions described in Chapter 3. The analysis of potential impacts disclosed in the Draft EIR for Alternatives 2A, 4A, or 5 would not be anticipated to change in any appreciable way with Reclamation or CVP participation. No appreciable change would be expected in storage or river flows compared to those changes disclosed in the Draft EIR for Alternative 5 (without CVP participation) because water diversions through the new intakes would primarily be export of surplus and not storage releases. The amount of water diverted would not substantively change if a portion of the capacity was used by the CVP instead of the SWP, so the associated impacts of operations would also not change. Additionally, the capacity dedicated to the CVP would be relatively small (less than approximately 1,500 cfs) under Alternative 5. Active participation in Alternative 5 would increase deliveries to CVP contractors compared to existing conditions, but operational assumptions and total deliveries for Alternative 5 would be similar to, or less than, those assumed under Alternatives 2A and 4A. Therefore, changes in water deliveries under Alternative 5 (if Reclamation or CVP contractors were to express interest in participation) would not be expected to result in new or more severe impacts than those disclosed in this Draft EIR for Alternatives 2A and 4A.

4.6 References Cited

Delta Conveyance Design and Construction Authority. 2022a. *Volume 1: Delta Conveyance Final Draft Engineering Project Report—Central and Eastern Options*. May 2022. Sacramento, CA.

Delta Conveyance Design and Construction Authority. 2022b. *Volume 1: Delta Conveyance Final Draft Engineering Project Report—Bethany Reservoir Alternative*. May 2022. Sacramento, CA.