# Chapter 31
# Other CEQA/NEPA Required Sections, including Mitigation and Environmental Commitment Impacts, Environmentally Superior Alternative, and Public Trust Considerations

This chapter provides an overview of other CEQA and NEPA considerations based on the technical analyses presented in Chapters 5–30. This chapter addresses significant irreversible and irretrievable changes, and short-term uses versus long-term productivity, selection of the environmentally superior alternative under CEQA, significant and unavoidable impacts, and potential impacts of project commitments and mitigation measures presented in Chapters 5–30 and measures to reduce those impacts. Appendix 31A, *BDCP Later CM Activity Environmental Checklist*, contains a checklist to simplify and organize the process of reviewing later Conservation Measure activities under the BDCP to determine the extent to which subsequent environmental review must be undertaken before the later activities may be approved.

The detailed analysis of the effects the action alternatives would have on the environment is provided in Chapters 5–30.

This section also addresses a topic that does not need to be addressed under either CEQA or NEPA, but may be relevant to the proposed project under California law: "public trust" considerations. The discussion of public trust issues focuses on the proposed project, Alternative 4A.

## 31.1 Irreversible and Irretrievable Commitments of Resources/Significant Irreversible Environmental Changes

State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15126.2[c]) and the Council on Environmental Quality's (CEQ's) NEPA Implementing Procedures (40 Code of Federal Regulations [CFR] Section 1502.16) require analysis of significant irreversible and irretrievable commitments of resources that would be caused by the proposed project. CEQA requires evaluation of irretrievable commitments of resources to ensure that their use is justified. NEPA requires an explanation of which environmental impacts are irreversible or would result in an irretrievable commitment of resources.

This section fulfills the requirement to address irreversible and irretrievable commitments of resources. Irreversible impacts are those that cause, through direct or indirect effects, use or consumption of resources in such a way that they cannot be restored or returned to their original condition despite mitigation, or that commit future generations to similar uses. An irretrievable impact or commitment of resources occurs when a resource is removed or consumed. These types of impacts are evaluated to ensure that consumption is justified.

All the action alternatives would involve a commitment of a range of natural, physical, and fiscal resources.

- Nonrenewable resources such as gasoline and diesel oil would be used to power construction equipment and vehicles.
- Wood products, a resource which renews slowly, would be used during construction.
- Aggregate would be needed to produce concrete for conveyance facilities and other proposed project facilities.
- Fossil fuels would also be used to produce cement, aggregate, steel, and petroleum-based products, and other construction materials.
- Nonrenewable energy resources would be necessary to operate barges, trucks, pumps, and equipment used for operations and routine maintenance.
- Additional electrical power from a renewable resource would be dedicated to lighting and operations.
- Energy resources would be required to power the pumps at the intakes and to transport water through the Delta.
- Land that would be physically altered by construction of the intakes, forebays, and conveyance facilities would be committed to the new use for the foreseeable future, representing a permanent commitment of the land and decreasing the amount of open land available for other uses. Depending on the alternatives, between 3,500 and 20,000 acres of land variously designated as agricultural, residential, commercial/industrial, public, and recreational/open space would be permanently altered. Access to the acquired lands would be limited to authorized personnel, and public access—including access to informal recreational sites along the Sacramento River at the intake locations—would be restricted.
- Up to 83,659 acres of land would be restored and/or protected, and up to 40 linear miles of channel margin habitat would be enhanced. These amounts could be less, depending on the alternative selected; for example, Alternative 4A would protect and restore about 15,000 acres of habitat. Because restoration actions have not been designed and precise locations have not been identified, it is not possible to specifically quantify the areal extent of specific land uses that would be changed through these actions. Furthermore, some of these restored land uses may not represent an irreversible commitment, since it is conceivable that, following the proposed permit term for the proposed project, agricultural lands converted to grassland communities could, in the future, be converted back into agricultural uses.
- Any construction would require a substantial one-time expenditure of funds for the costs of construction, compensation for land purchases and right-of-way/acquisition. The action alternatives would also require funding for operation and periodic maintenance in perpetuity, as well as activities under CM2–CM21 or Environmental Commitments 3, 4, 6–12, 15 and 16, such as restoration and enhancement, generally committing future generations to these expenditures.
- An increased commitment of public maintenance services (e.g., increased road maintenance due to increases in construction traffic, new electrical utility services, and for operation and maintenance of conveyance facilities, as well as Environmental Commitments 3, 4, 6–12, 15 and 16 or CM2–CM21 activities such as restoration and enhancement) would also be required.

These benefits would consist of improved water supply reliability and water quality for water users in the SWP/CVP Export Service Areas and restoration and protection of ecosystem health in target areas throughout the Delta; these and other benefits are expected to outweigh the commitment of these resources.

## 31.2 Relationship between Short-Term Uses of the Environment and Maintenance and Enhancement of Long-Term Productivity

The CEQ's NEPA Implementing Procedures (40 CFR Section 1502.16) require that an EIS discuss issues related to the environment. The short-term effects on and uses of the environment in the vicinity of the action alternatives are related to long-term effects and the maintenance and enhancement of long-term productivity. *Short term* refers to the total duration of construction: the multi-year construction period for the water conveyance facilities and the initial habitat preservation or stressor management actions called for in CM2–CM21 of the BDCP alternatives or Environmental Commitments 3, 4, 6–12, 15 and 16 in the non-HCP alternatives. *Long term* refers to an indefinite period beyond the initial construction and includes longer term preservation and stressor management actions contained in CM2–CM21 of the BDCP alternatives, as well as ongoing operation and maintenance of the conveyance facilities.

The specific impacts of the action alternatives vary in type, intensity, and duration according to the activities occurring at any given time. Implementation of the BDCP would require tradeoffs between long-term productivity and short-term uses of the environment.

Implementation of the action alternatives would result in attainment of short-term and long-term water supply reliability, as well as habitat preservation and stressor management objectives, at the expense of some long-term social, aesthetic, agricultural, biological, noise, and land use impacts.

- Examples of short-term losses are listed below.
    - Economic losses associated with changes in agricultural production.
    - Construction impacts such as noise, traffic delays, or detours.
    - Recreational impacts such as access inconveniences to marinas during construction.
    - Air quality impacts, such as exceedances of air district emission thresholds.
- Short-term benefits would include increased jobs and revenue generated by construction.
- Examples of long-term losses are listed below.
    - Permanent loss of plant and wildlife resources.
    - Loss of agricultural land and open space.
    - Visual impacts and changes to community character.
    - Use of construction materials and energy.
    - Displacement of residences and businesses.
    - Potential Loss of cultural resources.

- There would be three primary long-term gains.
    - Improvement to water supply reliability.
    - Protection, restoration, and enhancement of the Delta ecosystem.
    - Potential for improved recreational opportunities.

The No Action Alternative is the future condition at 2025 or 2060 that would occur if none of the action alternatives were approved and if no change from current management direction or the level of management intensity of existing programs by federal, state, and local agencies occurred. The No Action Alternative assumptions includes projects and programs that received approvals and permits in 2009 to remain consistent with existing management direction. Some of these programs and policies would restore sensitive habitat, but could also potentially cause some of the losses listed above. It would, however, do nothing to resolve increasing concerns over water supply reliability for the SWP/CVP Export Service Areas or the increasing loss of sensitive habitat in the Delta.

As discussed in earlier chapters, either of the No Action Alternative point of comparisons would result in losses such as:

- Increased demand on SWP and CVP water supplies upstream and downstream of the Delta.
- Permanent loss of plant and wildlife resources, such as loss of fish due to entrainment in the South Delta pumps.
- Permanent conversion of farmland to nonagricultural uses.
- Economic losses associated with changes in agricultural production.
- Temporary recreational impacts such as access boating access and passage during construction, and permanent decrease in fishing opportunities for anticipated projects.

# 31.3 CEQA Environmentally Superior Alternative

Section 15126.6(e) of the State CEQA Guidelines sets forth the circumstances in which CEQA lead agencies must identify the "environmentally superior alternative" prior to making a decision on a project.

> (2) If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

The State CEQA Guidelines assume that, for many proposed projects, the No Project Alternative will be environmentally superior to alternatives that involve carrying out a proposed project in some form. This assumption presumably reflects the fact that, in many instances, the choice of doing nothing (e.g., leaving land undeveloped rather than developing it) will result in fewer environmental impacts than choices involving taking actions of some kind. Under Section 15126.6(e), lead agencies in such circumstances are required, as quoted above, to "identify an environmentally superior alternative among the other alternatives." Here, however, for the reasons explained below, the environmentally superior alternative is not the No Project Alternative, so DWR is not required to identify one of the action alternatives as the environmentally superior alternative.

The NEPA Regulations adopted by the Council on Environmental Quality (CEQ) approach this subject matter somewhat differently. Those regulations require the identification of one or more "environmentally preferable" alternatives, though such a determination need not occur until

issuance of a Record of Decision (ROD) following completion of the 30-day Final EIS review period. Specifically, 40 CFR Section 1505.2(b) requires that a ROD "[i]dentify all alternatives considered by the [federal] agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable. An agency may discuss preferences among alternatives based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors including any essential considerations of national policy which were balanced by the agency in making its decision and state how those considerations entered into its decision." Consistent with this provision, Reclamation will identify one or more "environmentally preferable" alternatives at the time it issues its ROD for the BDCP/California WaterFix project.

Determination of an environmentally superior alternative from among the action alternatives would be very difficult to make. Each of the action alternatives involves different sets of environmental tradeoffs affecting vast portions of the State of California (not only the Plan Area, but also upstream areas and export areas). Unlike many other environmental laws, CEQA does not treat any category of environmental effect as being more important than any other category. Thus, the process for reaching an overall determination under CEQA as to the environmental superiority of a particular alternative action requires the balancing of different sets of environmental benefits and impacts against each other. There is no clear direction under CEQA for how to engage in such balancing to identify an environmentally superior action alternative in an EIR.

In light of these challenges, DWR, acting as CEQA lead agency, has not identified an environmentally superior alternative from among the action alternatives. Instead, the following discussion describes what DWR regards as the environmental pros and cons among the various action alternatives analyzed in this EIR/EIS, by synthesizing the analysis of environmental impacts in Chapters 5–30. Such analysis is intended to contribute to informed public participation and informed decision-making.

As noted above, the No Project Alternative (described in this document as the No Action Alternative) is not the environmentally superior alternative, as compared to the action alternatives. The majority of the action alternatives are tied to a Habitat Conservation Plan/Natural Community Conservation Plan with substantial amounts of environmental restoration and protection. While the new preferred alternative, 4A, is not attached to Habitat Conservation Plan/Natural Community Conservation Plan, it still would involve more environmental restoration and protection compared with what would occur under a No Project scenario. However, Alternatives 4A, 2D, and 5A would involve much less restoration than the BDCP alternatives. The action alternatives would create a comprehensive managed approach for restoring Delta habitat and implementing numerous stressor reduction measures that likely would not occur under No Project conditions.

Furthermore, under the action alternatives, joint CVP–SWP operations are intended to reduce the severity of long-standing adverse environmental consequences associated with the sole reliance on diversions from the south Delta, such as reverse flows in Old and Middle River and fish losses from entrainment. Under action alternatives with new diversion capacity in the north Delta, overall fish loss from the joint operation of the SWP and CVP would be minimized through reduced reliance on the south Delta pumps. These alternatives would reduce reliance on diversion from the south Delta by allowing water diversions from the Sacramento River through the use of state-of-the-art fish screens at new intake facilities in the north Delta. Alternatives with dual conveyance would provide operational flexibility that would minimize adverse impacts on covered aquatic species by, among other things, allowing operators to divert water at times and places–in either the north or the south–

that protect those species at sensitive life stages. Alternatives with isolated conveyance would dispense altogether with diversions from the south Delta.

The No Project scenario would also leave the SWP/CVP system subject to potentially catastrophic consequences in the event of a major earthquake leading to levee breaks, inundation of Delta islands, and prolonged disruptions of exports that could require environmentally damaging emergency measures south of the Delta to provide water. Even in the absence of an event that catastrophically alters the hydrology of the Delta, climate change and anticipated sea level rise will gradually limit the operation of the SWP/CVP water pumps in the South Delta. Consequently, additional releases from upstream reservoirs would be necessary in order to provide the fresh water needed to meet current salinity standards. In addition to the continuing decline of the ecology of the Delta that would likely occur under a No Project scenario, another possible adverse result could be additional groundwater overdraft in export areas, particularly in the San Joaquin Valley, in response to decreasing exports. In addition, as described in Appendix 5B, *Responses to Reduced South of Delta Water Supplies*, water managers in urban export areas could respond to diminished deliveries by taking other actions, such as the construction of desalination plants, that would create their own negative environmental effects, including consumption of large amounts of greenhouse gas-generating fossil fuels, brine discharge, and potential entrainment of marine species.

As among the action alternatives, each one involves a different set of environmental benefits and impacts. For example, the number of north Delta intakes associated with particular alternatives typically reflects a balance between localized construction-related, visual, and footprint-related impacts in the Delta against the system-wide environmental benefits associated with reducing reliance on the south Delta pumps. For example, in choosing Alternative 4A, with three intakes, as its proposed project, DWR was motivated in part by the fact that this alternative would involve fewer such localized in-Delta impacts than alternatives with five intakes (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 2D, 6A, 6B, and 6C). Other alternatives with three intakes (Alternatives 7 and 8) would similarly reduce localized, in-Delta impacts compared with alternatives with five intakes. For further details associated with particular intake locations, see Appendix 3F, *Intake Location Analysis*.

Alternative 3 would have two north Delta intakes, and Alternatives 5 and 5A would have one. Therefore, some of the environmental impacts related to temporary and permanent habitat or agricultural land conversion would be less for these alternatives than for Alternatives 4, 4A, 7, and 8, which would include three new north Delta intakes, and for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 2D, 6A, 6B, and 6C, which would include five north Delta intakes. Although the BDCP conservation strategy, with its large amounts of habitat restoration and preservation, as well as the Environmental Commitments under the non-HCP alternatives would offset many of the environmental impacts associated with constructing north Delta facilities, this strategy would not mitigate to less-than-significant levels all of the impacts associated with in-Delta facility construction (e.g., significant visual impacts), as would occur under the No Project Alternative. As discussed earlier, alternatives with fewer intakes provide less flexibility in operations and may result in continued dependence on South Delta pumps and/or reduced water supplies that conflicts with the co-equal goals of ecosystem restoration and water supply reliability.

Despite their reduced footprints, Alternatives 3, 5, and 5A, compared with Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 4, 4A, 6A, 6B, 6C, 7, and 8, would have different adverse environmental impacts due to their greater dependence on south Delta exports. As with the No Project scenario, reverse flows and fish losses in the south Delta would continue under Alternatives 3, 5, and 5A, though to a lesser degree than at present. Such continuing losses would reduce the likelihood of Delta smelt recovery. In contrast, many of the alternatives with more north Delta intakes (e.g., Alternatives 4, 4A, 7, and 8) would likely be more successful in facilitating the recovery of that species.

Despite the past and ongoing environmental issues associated with south Delta exports, there are some advantages that would occur under alternatives with dual conveyance (1A, 1B, 1C, 2A, 2B, 2C, 2D, 3, 4, 4A, 5, 5A, 7, and 8), which would continue to use south Delta pumps under limited circumstances, as explained above. The availability of intakes in the north in addition to existing diversion facilities in the south would provide system operators the flexibility to divert from the north or south depending on which is better for covered species at different times of year and different hydrological conditions. Dual conveyance also allows flexibility in water diversions when regulatory restrictions limit the ability to pull water from either the north or south, thus enabling the goal of increasing water supply reliability. In contrast, alternatives with isolated conveyance (6A, 6B, and 6C) could cause greater water quality impacts because of reduced freshwater flows from the Sacramento River into the central and south Delta. Isolated conveyance would also fail to provide the same degree of operational flexibility to respond to changing conditions in the Delta as would exist for the dual conveyance options.

In general, alternatives that include pipelines/tunnels to convey water under the Delta (1A, 2A, 2D, 3, 4, 4A, 5, 5A, 7, and 8) would be environmentally superior to all alternatives that would use lined or unlined surface canals (Alternatives 1B, 1C, 2B, 2C, 6B, and 6C). The construction of large canals would lead to losses of habitat, agricultural resources, cultural resources, recreational opportunities, and other environmental resources far more extensive than would occur with facilities built underground. The canal alignment alternatives would also bisect existing floodplains, agricultural drainage systems, surface irrigation systems, and underground utilities. Although the construction of north Delta intakes, an intermediate forebay, and tunnel facilities would certainly cause some of these kinds of impacts, the extent of the disturbed acreage would be only a fraction of what would occur with the construction of surface canals. Alternatives with a west-side canal alignment (1C, 2C, and 6C) would be more susceptible to earthquake damage and would be more difficult to construct compared to the east side canals (1B, 2B, and 6B) due to geologic conditions, such as earthquakes and expansion. The western alignment would be built on soils that are more subject to expansion, and would involve construction of a tunnel through soils with greater expected earthquake ground motions than those found in the eastern alignment.

Additionally, alternatives with tunnels would also be less susceptible than alternatives with canals would be to liquefaction, seepage, settlement, and damage due to seismic events, wave run-up, and erosion during a flood event. Alternatives involving an unlined canal as their primary conveyance mechanism (potentially 1B, 1C, 2B, 2C, 6B, and 6C) would have the potential for greater groundwater and water quality impacts than alternatives with either lined canals or tunnels. For instance, in some areas where groundwater is *higher* than the water elevations in a canal would be, groundwater could seep into the canal, possibly causing reductions in groundwater levels that could result in inoperable wells in the immediate area. Further, in some areas where groundwater is *lower* than the water elevations in a canal would be, water from the canal could seep into the surrounding groundwater, thereby causing groundwater levels to rise in the root zone. Alternatives with unlined canals could also adversely affect export water quality during conveyance because impaired

groundwater at elevations above the canal bottom could seep into the canals from adjacent land uses, including agricultural operations, causing water quality problems due to dissolved constituents from fertilizer and pesticide applications. Alternatives involving lined canals or tunnels would limit or avoid these adverse water quality and groundwater level effects. However, alternatives with lined canals would require enormous amounts of concrete, the mixing and pouring of which would create large amounts of greenhouse gas emissions. Furthermore, alternatives that include lined canals require more intensive localized construction activities than would be necessary for unlined canals.

Alternative 9, a "through-Delta" proposal that would provide an isolated corridor for fish passage through the San Joaquin River system in lieu of new north Delta intakes, presents a unique set of environmental issues. This Alternative combines various in-Delta improvements as compared to the No Project Alternative. It is well accepted that the current conveyance through the Delta via South Delta pumping plants alone will not improve the ecological system nor water supply reliability long-term. While Alternative 9 would reduce the existing effects of reverse flows towards the existing south Delta intakes during outgoing or ebb tide, the alternative would continue to use sensitive natural channels to transport water. In doing so, Alternative 9 would require increased construction in riparian areas along the banks of the Mokelumne and San Joaquin Rivers compared with the other action alternatives that would require construction primarily along the Sacramento River, which is already heavily riprapped. Dredging within the waterways during initial construction under Alternative 9 could also result in additional water quality degradation. Further, Alternative 9 would result in increased visual and recreation impacts in certain areas compared to other alternatives due to the construction of 14 operable barriers, necessary for fish and water quality protection purposes, which would substantially change the visual character of the Mokelumne and San Joaquin Rivers and would adversely affect recreational boating opportunities. Alternative 9 could also increase adverse water quality impacts on drinking water users in the western Delta, compared with alternatives with north Delta intakes.

Four alternatives—4, 4A, 7, and 8—would include dual tunnels and three intakes. Alternatives 7 and 8 would require greater outflows at certain times that would benefit delta smelt and longfin smelt but would create other environmental problems. Among these alternatives, DWR chose Alternative 4A as the proposed project in part because its proposed operations are intended to optimize spring and fall Delta flow conditions for delta smelt and longfin smelt without creating adverse environmental impacts further upstream (i.e., in upstream reservoirs and the rivers that flow out of them) and in export areas. These problems could include the following: reduced Shasta Reservoir cold water pool necessary to maintain downstream cold water temperatures for winter run salmon; adverse temperature effects on salmon and steelhead in the Lower American River; impacts on reservoir-related recreation; reduced clean hydropower generation, including at peak demand periods when fossil fuel consumption is typically at its maximum; greater risk of impacts associated with drought conditions where carryover storage is reduced in order to maximize outflows; increased reliance on groundwater by Sacramento Valley agricultural interests, as well as land subsidence that might result; and reduced availability for exports to south-of-Delta wildlife refuges and for human and other purposes.

Notably, operations under Alternative 4A would be subject to a requirement intended to ensure adequate Delta outflows through additional criteria for spring outflow and new minimum flow criteria at Rio Vista from January through August. Alternative 4A starting operations will be determined through the continued coordination process as outlined in the ESA Section 7 consultation process and 2081(b) permit prior to the start of construction. An adaptive management

and monitoring program, as described below, will be implemented to develop additional science during the course of project construction and operation to inform and improve conveyance facility operational limits and criteria.

Although Alternatives 7 and 8 do not include operations based on the decision tree concept, these two alternatives would include greater levels of guaranteed spring and fall Delta outflows, which have demonstrated strong correlations with increased abundances of Delta and longfin smelt. However, meeting these increased outflows could require releases from upstream reservoirs and rivers, making these alternatives less likely to avoid both the upstream environmental problems described above and the potential for reduced water availability for uses south of the Delta. Thus, although Alternatives 7 and 8 could be more beneficial than Alternative 4A to delta smelt and longfin smelt, Alternative 4A could be more beneficial for coldwater-dependent salmonids. Alternative 4A is also likely to have fewer impacts than Alternatives 7 and 8 with respect to other categories of environmental impacts. For example, Alternatives 7 and 8 would be more likely to result in reduced water supplies and, as noted earlier, reduced water supplies would result in other adverse environmental impacts south of the Delta (see Appendix 5B, *Responses to Reduced South of Delta Water Supplies*). Overall, Alternative 4A would provide operational flexibility for improving conditions for listed species and the Delta ecosystem.

## 31.4 Summary of Significant and Unavoidable Adverse Impacts

Pursuant to Section 15126.2(b) of the State CEQA Guidelines, an EIR is required to identify the unavoidable significant environmental impacts of a project. An EIR shall:

> Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their direct effect, should be described.

See Table 31-1 for a summary of such impacts under Alternative 4A.

**Table 31-1. Summary of Significant and Unavoidable Adverse Impacts**

| | Impact Conclusions Before Mitigation | | Impact Conclusion After Mitigation | |
|---|---|---|---|---|
| Alternative 4A Potential Impact | CEQA | Proposed Mitigation | CEQA | NEPA |
| GW-6: Deplete groundwater supplies or interfere with groundwater recharge, alter local groundwater levels, reduce the production capacity of pre-existing nearby wells, or interfere with agricultural drainage as a result of implementing Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | GW-5: Agricultural lands seepage minimization | Significant and Unavoidable | Adverse |
| GW-7: Degrade groundwater quality as a result of implementing Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | GW-7: Provide an alternate source of water | Significant and Unavoidable | Adverse |
| GW-9: Degrade groundwater quality | Significant | No feasible mitigation to address this impact | Significant and Unavoidable | Not Adverse |
| WQ-14: Effects on mercury concentrations resulting from implementation of Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | No available mitigation to address this impact | Significant and Unavoidable | Adverse |
| SOILS-2: Loss of topsoil from excavation, overcovering, and inundation as a result of constructing the proposed water conveyance facilities | Significant | SOILS-2a: Minimize extent of excavation and soil disturbance<br>SOILS-2b: Salvage, stockpile, and replace topsoil and prepare a topsoil storage and handling plan | Significant and Unavoidable | Adverse |
| SOILS-7: Loss of topsoil from excavation, overcovering, and inundation as a result of implementing the proposed Environmental Commitments 3–4, 6–11 | Significant | SOILS-2a: Minimize extent of excavation and soil disturbance<br>SOILS-2b: Salvage, stockpile, and replace topsoil and prepare a topsoil storage and handling plan | Significant and Unavoidable | Adverse |
| AQUA-201: Effects of water operations on entrainment of non-covered aquatic species of primary management concern | Significant (striped bass, American shad) | No feasible mitigation to address this impact | Significant and Unavoidable (striped bass, American shad) | Adverse (striped bass, American shad) |
| LU-3: Create physical structures adjacent to and through a portion of an existing community as a result of constructing the proposed water conveyance facility | Significant | TRANS-1a: Implement site-specific construction traffic management plan<br>TRANS-1b: Limit hours or amount of construction activity on congested roadway segments | Significant and Unavoidable | Adverse |
| AG-1: Temporary conversion, short-term conversion, and permanent conversion of Important Farmland or of farmland under Williamson Act contracts or in Farmland Security Zones as a result of constructing the proposed water conveyance facility | Significant | AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to maintain agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones<br>AG-1a: Promote agricultural productivity of Important Farmland to the extent feasible<br>AG-1b: Minimize impacts on land subject to Williamson Act contracts or in Farmland Security Zones<br>AG-1c: Consideration of an Optional Agricultural Land Stewardship Approach or Conventional Mitigation Approach | Significant and Unavoidable | Adverse |
| AG-2: Other effects on agriculture as a result of constructing and operating the proposed water conveyance facility | Significant | AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to maintain agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones<br>GW-1: Maintain water supplies in areas affected by construction dewatering<br>GW-5: Agricultural lands seepage minimization<br>WQ-11: Avoid, minimize, or offset, as feasible, reduced water quality conditions<br>WQ-11e: Adaptively manage diversions at the north and south Delta intakes to reduce or eliminate water quality degradation in western Delta | Significant and Unavoidable | Adverse |

| Alternative 4A Potential Impact | Impact Conclusions Before Mitigation: CEQA | Proposed Mitigation | Impact Conclusion After Mitigation: CEQA | Impact Conclusion After Mitigation: NEPA |
|---|---|---|---|---|
| AG-3: Temporary conversion, short-term conversion, and permanent conversion of Important Farmland or of land subject to Williamson Act contracts or in Farmland Security Zone as a result of implementing the proposed Environmental Commitments 3, 4, 6–11, 15, and 16 | Significant | AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to maintain agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones | Significant and Unavoidable | Adverse |
| AG-4: Other effects on agriculture as a result of implementing the proposed Environmental Commitments 3, 4, 6–11, 15, and 16 | Significant | AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to maintain agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones<br>GW-5: Agricultural lands seepage minimization | Significant and Unavoidable | Adverse |
| REC-2: Result in long-term reduction of recreation opportunities and experiences as a result of constructing the proposed water conveyance facilities | Significant | REC-2: Provide alternative bank fishing access sites<br>BIO-75: Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds<br>AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate new transmission lines and underground transmission lines where feasible<br>AES-1b: Install visual barriers between construction work areas and sensitive receptors<br>AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan<br>AES-1d: Restore barge unloading facility sites once decommissioned<br>AES-1e: Apply aesthetic design treatments to all structures to the extent feasible<br>AES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilities<br>AES-1g: Implement best management practices to implement project landscaping plan<br>AES-4a: Limit construction to daylight hours within 0.25 mile of residents<br>AES-4b: Minimize fugitive light from portable sources used for construction<br>AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences<br>TRANS-1a: Implement site-specific construction traffic management plan<br>TRANS-1b: Limit hours or amount of construction activity on congested roadway segments<br>TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments<br>NOI-1a: Employ noise-reducing construction practices during construction<br>NOI-1b: Prior to construction, initiate a complaint/response tracking program | Significant and Unavoidable<br>Less Than Significant (for impacts related to construction of the intakes) | Adverse<br>Not Adverse (for impacts related to construction of the intakes) |
| REC-3: Result in long-term reduction of recreational navigation opportunities as a result of constructing the proposed water conveyance facilities | Significant | TRANS-1a: Implement site-specific construction traffic management plan | Significant and Unavoidable | Adverse |
| AES-1: Substantial alteration in existing visual quality or character during construction of conveyance facilities | Significant | AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate new transmission lines and underground transmission lines where feasible<br>AES-1b: Install visual barriers between construction work areas and sensitive receptors<br>AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan<br>AES-1d: Restore barge unloading facility sites once decommissioned<br>AES-1e: Apply aesthetic design treatments to all structures to the extent feasible<br>AES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilities<br>AES-1g: Implement best management practices to implement project landscaping plan | Significant and Unavoidable | Adverse |

| | Impact Conclusions Before Mitigation | | Impact Conclusion After Mitigation | |
|---|---|---|---|---|
| Alternative 4A Potential Impact | CEQA | Proposed Mitigation | CEQA | NEPA |
| AES-2: Permanent effects on a scenic vista from presence of conveyance facilities | Significant | AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate new transmission lines and underground transmission lines where feasible<br>AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan<br>AES-1e: Apply aesthetic design treatments to all structures to the extent feasible | Significant and Unavoidable | Adverse |
| AES-3: Permanent damage to scenic resources along a state scenic highway from construction of conveyance facilities | Significant | AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate new transmission lines and underground transmission lines where feasible<br>AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan<br>AES-1e: Apply aesthetic design treatments to all structures to the extent feasible | Significant and Unavoidable | Adverse |
| AES-4: Creation of a new source of light or glare that would adversely affect views in the area as a result of construction and operation of conveyance facilities | Significant | AES-4a: Limit construction to daylight hours within 0.25 mile of residents<br>AES-4b: Minimize fugitive light from portable sources used for construction<br>AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences<br>AES-4d: Avoid the use of blue rich white light LED lighting | Significant and Unavoidable | Adverse |
| AES-6: Substantial alteration in existing visual quality or character during implementation of Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate new transmission lines and underground transmission lines where feasible<br>AES-1b: Install visual barriers between construction work areas and sensitive receptors<br>AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan<br>AES-1d: Restore barge unloading facility sites once decommissioned<br>AES-1e: Apply aesthetic design treatments to all structures to the extent feasible<br>AES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilities<br>AES-1g: Implement best management practices to implement project landscaping plan<br>AES-4a: Limit construction to daylight hours within 0.25 mile of residents<br>AES-4b: Minimize fugitive light from portable sources used for construction<br>AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences<br>AES-4d: Avoid the use of blue rich white light LED lighting | Significant and Unavoidable | Adverse |
| CUL-1: Effects on identified archaeological sites resulting from construction of conveyance facilities | Significant | CUL-1: Prepare a data recovery plan and perform data recovery excavations on the affected portion of the deposits of identified and significant archaeological sites | Significant and Unavoidable | Adverse |
| CUL-2: Effects on archaeological sites to be identified through future inventory efforts | Significant | CUL-2: Conduct inventory, evaluation, and treatment of archaeological resources | Significant and Unavoidable | Adverse |
| CUL-3: Effects on archaeological sites that may not be identified through inventory efforts | Significant | CUL-3: Implement an archaeological resources discovery plan, perform training of construction workers, and conduct construction monitoring | Significant and Unavoidable | Adverse |
| CUL-4: Effects on buried human remains damaged during construction | Significant | CUL-4: Follow state and federal law governing human remains if such resources are discovered during construction | Significant and Unavoidable | Adverse |
| CUL-5: Direct and indirect effects on eligible and potentially eligible historic architectural/built environment-resources resulting from construction activities | Significant | CUL-5: Consult with relevant parties, prepare and implement a built environment treatment plan | Significant and Unavoidable | Adverse |
| CUL-6: Direct and indirect effects on unidentified and unevaluated historic architectural/built environment resources resulting from construction activities | Significant | CUL-6: Conduct a survey of inaccessible properties to assess eligibility, determine if these properties will be adversely impacted by the project, and develop treatment to resolve or mitigate adverse impacts | Significant and Unavoidable | Adverse |

| | Impact Conclusions Before Mitigation | | Impact Conclusion After Mitigation | |
|---|---|---|---|---|
| Alternative 4A Potential Impact | CEQA | Proposed Mitigation | CEQA | NEPA |
| CUL-7: Effects of environmental commitments on cultural resources | Significant | CUL-7: Conduct cultural resource studies and adopt cultural resource mitigation measures for cultural resource impacts associated with implementation of Environmental Commitments 3, 4, 6–12, 15, and16 | Significant and Unavoidable | Adverse |
| TRANS-1: Increased construction vehicle trips resulting in unacceptable level of service conditions | Significant | TRANS-1a: Implement site-specific construction traffic management plan<br>TRANS-1b: Limit hours or amount of construction activity on congested roadway segments<br>TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments | Significant and Unavoidable[a] | Adverse[a] |
| TRANS-2: Increased construction vehicle trips exacerbating unacceptable pavement conditions | Significant | TRANS-2a: Prohibit construction activity on physically deficient roadway segments<br>TRANS-2b: Limit construction activity on physically deficient roadway segments<br>TRANS-2c: Improve physical condition of affected roadway segments as stipulated in mitigation agreements or encroachment permits | Significant and Unavoidable[b] | Adverse[b] |
| TRANS-3: Increase in safety hazards, including interference with emergency routes during construction | Significant | TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments | Significant and Unavoidable[c] | Adverse[c] |
| TRANS-6: Disruption of transit service during construction | Significant | TRANS-1a: Implement site-specific construction traffic management plan<br>TRANS-1b: Limit hours or amount of construction activity on congested roadway segments<br>TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments | Significant and Unavoidable | Adverse |
| TRANS-10: Increased traffic volumes during implementation of Environmental Commitments 3, 4, 6–12, 15, and16 | Significant | TRANS-1a: Implement site-specific construction traffic management plan<br>TRANS-1b: Limit hours or amount of construction activity on congested roadway segments<br>TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments | Significant and Unavoidable | Adverse |
| UT-6: Effects on regional or local utilities as a result of constructing the proposed water conveyance facilities | Significant | UT-6a: Verify locations of utility infrastructure<br>UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability<br>UT-6c: Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety | Significant and Unavoidable[d] | Adverse[d] |
| UT-8: Effects on public services and utilities as a result of implementing the proposed Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | UT-6a: Verify locations of utility infrastructure<br>UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability<br>UT-6c: Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety | Significant and Unavoidable[d] | Adverse[d] |
| AQ-23: Generation of cumulative greenhouse gas emissions from increased CVP pumping as a result of implementation of water conveyance facility | Significant | No feasible mitigation to address this impact | Significant and Unavoidable | Adverse |
| AQ-24: Generation of regional criteria pollutants from implementation of Environmental Commitments 3, 4, 6–11 | Significant | AQ-24: Develop an Air Quality Mitigation Plan (AQMP) to ensure air district regulations and recommended mitigation are incorporated into future conservation measures and associated project activities | Significant and Unavoidable | Adverse |
| AQ-27: Generation of cumulative greenhouse gas emissions from implementation of Environmental Commitments 3, 4, 6–11 | Significant | AQ-24: Develop an Air Quality Mitigation Plan (AQMP) to ensure air district regulations and recommended mitigation are incorporated into future conservation measures and associated project activities<br>AQ-27 Prepare a land use sequestration analysis to quantify and mitigate (as needed) GHG flux associated with conservation measures and associated project activities | Significant and Unavoidable | Adverse |
| NOI-1: Exposure of noise-sensitive land uses to noise from construction of water conveyance facilities | Significant | NOI-1a: Employ noise-reducing construction practices during construction,<br>NOI-1b: Prior to construction, initiate a complaint/response tracking program | Significant and Unavoidable | Adverse |
| NOI-2: Exposure of sensitive receptors to vibration or groundborne noise from construction of water conveyance facilities | Significant | NOI-2: Employ vibration-reducing construction practices during construction of water conveyance facilities | Significant and Unavoidable | Adverse |

| Alternative 4A Potential Impact | Impact Conclusions Before Mitigation: CEQA | Proposed Mitigation | Impact Conclusion After Mitigation: CEQA | Impact Conclusion After Mitigation: NEPA |
|---|---|---|---|---|
| NOI-4: Exposure of noise-sensitive land uses to noise from implementation of proposed Environmental Commitments 3, 4, 6–10 | Significant | NOI-1a: Employ noise-reducing construction practices during construction<br>NOI-1b: Prior to construction, initiate a complaint/response tracking program | Significant and Unavoidable | Adverse |
| HAZ-8: Increased risk of bird – aircraft strikes during implementation of Environmental Commitments that create or improve wildlife habitat | Significant | HAZ-8: Consult with individual airports and USFWS, and relevant regulatory agencies | Significant and Unavoidable | Adverse |
| MIN-5: Loss of availability of locally important natural gas wells as a result of implementing Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | MIN-5: Design Environmental Commitments 4 and 10 to avoid displacement of active natural gas wells to the extent feasible | Significant and Unavoidable | Adverse |
| MIN–6: Loss of availability of extraction potential from natural gas fields as a result of implementing Environmental Commitments 3, 4, 6–12, 15, and 16 | Significant | MIN-6: Design Environmental Commitments 4 and 10 to maintain drilling access to natural gas fields to the extent feasible | Significant and Unavoidable | Adverse |
| PALEO-1: Destruction of unique or significant paleontological resources as a result of construction of water conveyance facilities | Significant | PALEO-1a: Prepare a monitoring and mitigation plan for paleontological resources<br>PALEO-1b: Review 90% design submittal and develop specific language identifying how the mitigation measures will be implemented along the alignment<br>PALEO-1c: Educate construction personnel in recognizing fossil material<br>PALEO-1d: Collect and preserve substantial potentially unique or significant fossil remains when encountered | Significant and Unavoidable | Adverse |

[a] Although Mitigation Measures TRANS-1a through TRANS-1c would reduce the severity of this impact/effect, the Project proponents are not solely responsible for the timing, nature, or complete funding of required improvements. If an improvement that is identified in any mitigation agreement(s) contemplated by Mitigation Measure TRANS-1c is not fully funded and constructed before the project's contribution to the impact/effect is made, a significant impact (CEQA), or an adverse effect (NEPA), in the form of unacceptable level of service would occur. Therefore, this impact/effect would be significant and unavoidable and adverse, respectively. If, however, all improvements required to avoid significant impacts and adverse effects prove to be feasible and any necessary agreements are completed before the project's contribution to the effect is made, impacts would be less than significant and effects would not be adverse.

[b] Although Mitigation Measures TRANS-1a through TRANS-1c would reduce the severity of this impact/effect, the Project proponents are not solely responsible for the timing, nature, or complete funding of required improvements. If an improvement that is identified in any mitigation agreement(s) contemplated by Mitigation Measure TRANS-1c is not fully funded and constructed before the project's contribution to the impact/effect is made, a significant impact (CEQA), or an adverse effect (NEPA), in the form of unacceptable pavement conditions would occur. Therefore, this impact/effect would be significant and unavoidable and adverse, respectively. If, however, all improvements required to avoid significant impacts and adverse effects prove to be feasible and any necessary agreements are completed before the project's contribution to the effect is made, impacts would be less than significant and effects would not be adverse.

[c] Mitigation Measure TRANS-1c would reduce the severity of this impact, the Project proponents cannot ensure that the improvements will be fully funded or constructed prior to the project's contribution to the impact. If an improvement identified in the mitigation agreement(s) is not fully funded and constructed before the project's contribution to the impact/effect is made, a significant impact (CEQA), or an adverse effect (NEPA) in the form of increased safety hazards would occur. Accordingly, this effect would be significant and unavoidable and adverse, respectively. If, however, all improvements required to avoid significant impacts prove to be feasible and any necessary agreements are completed before the project's contribution to the effect is made, impacts would be less than significant and effects would not be adverse.

[d] If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact would be less than significant (CEQA) and there would be no adverse effect (NEPA).

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# 31.5 Environmental and Other Commitments and Mitigation Measures with the Potential for Environmental Effects under CEQA and NEPA

Section 15126.4(a)(1)(D) of the State CEQA Guidelines provides that, "[i]f a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." This directive is consistent with the general principle under NEPA that federal agencies should identify reasonably foreseeable impacts of proposed major federal actions. This section is intended to satisfy these mandates.

In this EIR/EIS, for each impact considered significant under CEQA or adverse under NEPA, mitigation measures have been designed that would reduce the severity of the impact. Further, as part of the planning and environmental assessment process, the project proponents will incorporate environmental commitments and best management practices (BMPs) into the action alternatives to avoid or minimize potential significant impacts and adverse effects. However, some of these environmental commitments and mitigation measures could have the potential themselves to result in significant impacts and adverse effects. In general, these commitments and mitigation measures require construction activities and/or ground disturbance. The following sections provide an impact analysis of those commitments and mitigation measures.

## 31.5.1 Environmental and Other Commitments

The environmental and other commitments with potential for significant environmental effects under CEQA or adverse effects under NEPA are discussed below. These commitments are described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

### 31.5.1.1 Perform Geotechnical Studies

Detailed geotechnical studies will be performed at the locations of the water conveyance alignment and facility locations and at material borrow areas.[1] As described in more detail in Chapter 3,

[1] The actions presented relate to those necessary to collect data and gather information to support preliminary planning as to the feasibility of various conveyance alternatives being considered for meeting the project objectives and purpose and need. These geotechnical studies would not commit DWR to a specific course of action nor otherwise preclude alternatives being considered for the BDCP/California WaterFix. CEQA compliance for these efforts was achieved through issuance of an Initial Study supporting a Mitigated Negative Declaration (MND) (and adopted through a Notice of Determination issued in 2010, and modified through a series of addendums in 2010 - 2013) (see State Clearinghouse CEQANet: http://www.ceqanet.ca.gov/ProjDocList.asp?ProjectPK=605177). However, the adequacy of the CEQA compliance for this geotech work was called into question related to DWR's underlying ability to utilize right of entry authorizations to access geotech locations. Prior to resolution of this issue by the California Supreme Court in July 2016 (in *Property Reserve Inc. v. Superior Court*), the Lead Agencies added these geotechnical studies to the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS (and now in the Final EIR/EIS) out of an abundance of caution, in order to provide adequate disclosure to decision makers and the public and potentially add a redundant CEQA compliance process, depending on the outcome of the proceeding litigation. The presentation of this information in the Final EIR/EIS is not intended to replace or void the previous CEQA compliance and approvals as supported by the Initial Study/MND and addendums, and as documented in the NOD's issued based on these previously issued CEQA documents. Please see Appendix 4A for more information related to this issue.

*Description of Alternatives*, DWR has developed a Draft Geotechnical Exploration Plan (Phase 2) for the Alternative 4A Modified Pipeline Tunnel Option (MPTO) conveyance alignment. The geotechnical investigation plan provides additional details regarding the rationale, investigation methods and locations, and criteria for obtaining subsurface soil information and laboratory test data. The exact locations of borings and other test locations have not yet been determined, but the spacing of the borings and test locations likely will average about 1,000 feet along proposed canal and tunnel alignments and approximately 100 to 200 feet at intakes, pumping plants, forebays, siphons, and other hydraulic structures.

Certain activities that would be carried out as part of the geotechnical studies could cause environmental effects through ground disturbance, generation of noise, release of hazardous materials, and interaction with groundwater, as discussed below.

## Ground Disturbances

Ground disturbances would result from the following activities: drilling and sampling of soil borings; cone penetration testing; performing aquifer/pumping tests and slug tests; excavating test pits; and installing groundwater monitoring wells. These localized ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. For example, the use of drilling rigs for soil boring near the proposed intake sites could result in the short-term disturbance or loss of tidal perennial aquatic and valley/foothill riparian natural communities. Installing groundwater monitoring wells for liquefaction evaluation and dewatering requirements, for example, could result in more long-term ground disturbances in these natural communities. Disturbances of natural communities would be minimized by implementing Avoidance and Minimization Measures (AMMs), including *AMM1 Worker Awareness Training*; *AMM2 Construction Best Management Practices and Monitoring*; *AMM10 Restoration of Temporarily Affected Natural Communities*; and *AMM11 Covered Plant Species*. AMM1 includes procedures to educate construction personnel on the types of sensitive resources in the project area, including sensitive timing windows for covered species, applicable environmental rules and regulations, and specific training on the measures required to avoid and minimize effects on natural communities and covered species. AMM2 includes standard practices and measures that would be implemented prior, during, and post-construction to avoid or minimize effects of ground-disturbing activities on sensitive resources like natural communities. Implementation of AMM10 would result in the restoration and monitoring of natural communities in the Plan Area that are temporarily affected by covered activities, and preconstruction botanical surveys undertaken and protective measures would be taken to protect plant species, as necessary.

## Noise

The geotechnical studies would require drilling for soil borings and installation of groundwater monitoring wells. Drilling would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs. For example, as described above, implementation of AMM2 would help avoid/minimize effects of construction activities on sensitive resources (e.g., species and habitat). Preconstruction surveys, and protective measures for areas where species' presence is known, such as avoidance of construction activity during certain times of

year, and establishing buffer distances would be implemented under species-specific AMMs, such as *AMM13 California Tiger Salamander* and *AMM18 Swainson's Hawk* (see Appendix 3B, *Environmental Commitments, AMMs, and CMs*, for detail) and would help minimize noise effects on covered species. In addition, implementation of Mitigation Measures NOI-1a: Employ Noise-Reducing Construction Practices during Construction and NOI-1b: Prior to Construction, Initiate a Complaint/Response Tracking Program, and a noise abatement plan (see Chapter 23, *Noise*, and Appendix 3B for detail) would reduce noise impacts on sensitive receptors and noise-sensitive land uses.

## Hazardous Materials

Many of the activities to be carried out as part of the geotechnical studies, such as excavation of test pits, cone penetration, installation of groundwater monitoring wells, and drilling/sampling for soil bores would require the use of vehicles and or heavy equipment (e.g., drilling rigs). The use, and/or onsite maintenance of this equipment could result in inadvertent spills or leaks of hazardous chemicals including gas, engine oil, solvents, and lubricants, which could adversely affect the environment not contained or if released in large enough quantities to pose a hazard to workers or the general public. However, under normal use, the inadvertent release of these types of chemicals would likely only have the potential to result in minor, temporary hazards to workers immediately adjacent to these releases. Because these chemicals would be used in small quantities and inadvertent releases would be localized, and because environmental commitment measures implemented as part of the Hazardous Material Management Plans (HMMPs), Spill Prevention, Containment, and Countermeasure Plans (SPCCPs), and Stormwater Pollution Prevention Plans (SWPPPs) (described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*), would minimize the potential for accidental releases of hazardous materials, and would help contain and remediate hazardous spills should they occur, it is unlikely that the general public or the environment would be adversely affected.

## Groundwater Quality

The installation of groundwater monitoring wells could result in effects on groundwater quality in those areas where the wells are placed. Installation of groundwater monitoring wells requires that a well casing, typically a steel or plastic pipe, is installed in the borehole to prevent collapse. Generally, the space between the casing and the sides of the hole provides a channel for surface water, and contaminants to reach the groundwater. To prevent this, the space is filled with grout. The grout and well casing prevent contaminants from seeping into the well. If the well casing is not properly installed (e.g., doesn't extend to the water table level) or is damaged, there is potential for groundwater quality effects. BMPs would be implemented prior to and during well installation to ensure that well casings are intact before, during and after installation, and to ensure that the casings extend to the level of the water table. Further, standard BMPs would be in place would require that groundwater quality be monitored by project proponents prior to installation of these wells to establish baseline groundwater quality conditions. Should monitoring well installation result in unacceptable degradation of groundwater quality, as determined by comparing post-implementation groundwater quality to relevant regulatory standards and with consideration of previously established beneficial uses, it may be necessary to determine if nearby wells used for potable water were affected. If the local potable water supply is affected, Mitigation Measure GW-7: Provide an Alternate Source of Water, would be implemented to supply a source of potable water (see Chapter 7, *Groundwater*, for detail).

***NEPA Effects:*** In summary, activities required as part of implementing the geotechnical studies would potentially adversely affect the environment through noise, hazardous materials, groundwater quality, and ground disturbance. As previously described, ground disturbance and hazardous material effects would be reduced by implementing AMMs (e.g., AMM3, AMM5, and AMM32), and related environmental commitments (i.e., HMMP, SPCCP, and SWPPPs), respectively, and thus would not likely be adverse. Similarly, the potential for groundwater quality to be adversely affected by well installation would be minimized by implementing BMPs. Noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, a noise abatement plan, as well Mitigation Measures NOI-1a and NOI-1b. Accordingly, these effects would not be adverse.

***CEQA Conclusion:*** Activities implemented as part of geotechnical studies would have the potential to result in significant environmental impacts due to the inadvertent release of hazardous materials, impacts on groundwater quality, ground disturbance, and noise. The impacts would be minimized and reduced to a less-than-significant level with the implementation of general and species-specific AMMs, environmental commitments, and Mitigation Measures NOI-1a and NOI-1b.

### 31.5.1.2 Transmission Line Pole Placement

The alignment of proposed transmission lines will be designed to avoid sensitive terrestrial and aquatic habitats when siting poles and towers to the maximum extent feasible. The alignment will also be designed to avoid agricultural lands where feasible. Where this is not feasible, there would be certain activities that would be carried out as part of this environmental commitment that could cause environmental effects. Specifically, grading and reconstructing features such as irrigation and drainage facilities would potentially result in generation of noise and emissions as well as altered drainage patterns, as discussed below.

#### Noise

Grading and construction activities required to reconstruct existing irrigation and drainage facilities where the transmission line alignment cannot avoid agricultural lands would require the use of heavy equipment such as graders, excavators, and dozers would have the potential to expose sensitive receptors, noise-sensitive land uses, and covered species to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, environmental commitments, and Mitigation Measures NOI-1a and NOI-1b, as described previously in Section 31.5.1.1, *Perform Geotechnical Studies*.

#### Air Quality

Construction equipment exhaust, employee vehicle exhaust, and dust from grading, clearing, and excavation activities required to reconstruct irrigation and drainage facilities would temporarily generate emissions of ozone precursors (reactive organic gases and nitrogen oxides), carbon monoxide, particulate matter 10 microns in diameter or less (PM10), particulate matter 2.5 microns in diameter or less (PM2.5), and sulfur dioxide. Pollutant emissions are highly dependent on the total amount of disturbed area, the duration of construction, and the intensity of construction activity. In addition, the number and types of heavy-duty equipment significantly affect emissions generated by vehicle exhaust. Should these emissions exceed the applicable air district thresholds or federal de minimis thresholds, this would be considered an adverse effect on air quality. Because the

transmission line alignment will be designed to avoid agricultural lands where feasible, it is reasonable to assume that the number of irrigation and drainage facilities requiring reconstruction would be small, the intensity of this type of construction activity would be low, and the duration of construction would be short-term for any individual site requiring this work. In addition, as environmental commitments the project proponents will develop and implement a construction equipment exhaust reduction plan to reduce criteria air pollutants and greenhouse gas (GHG) emissions from construction equipment, and will implement fugitive dust control measures to reduce construction-related fugitive dust. These environmental commitments and related AMM (AMM35) and Mitigation Measure AQ-24: Develop an Air Quality Mitigation Plan (AQMP) to Ensure Air District Regulations and Recommended Mitigation are Incorporated into Future Conservation Measures and Associated Project Activities, would reduce the severity of any potential air quality effects. Mitigation Measure AQ-21: Develop and Implement a GHG Mitigation Program to Reduce Construction Related GHG Emissions to Net Zero (0), would help reduce GHG emissions. Further, as applicable according to the air district(s) in which effects may occur, the following mitigation measures would be implemented to mitigate and offset construction-generated criteria pollutant emissions (see Chapter 22, *Air Quality and Greenhouse Gases*): Mitigation Measures AQ-2a, AQ-2b, AQ-3a, AQ-3b, AQ-4a and AQ-4b.

## Altered Drainage Patterns

Grading and construction activities required to reconstruct existing irrigation and drainage facilities would alter existing drainage patterns and could result in local (onsite) ponding, erosion and siltation, and changes in runoff flow rates and velocities. AMM3 and AMM4, as well as environmental commitment measures implemented by the project proponents as part of erosion and sediment control plans and SWPPPs would avoid or minimize erosion and siltation effects. In addition, the implementation of Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation, would require that project proponents implement measures to prevent an increase in runoff volume and rate from land-side construction areas and to prevent an increase in sedimentation in the runoff from the construction area.

***NEPA Effects:*** In summary, grading and reconstructing features such as irrigation and drainage facilities as part of this environmental commitment could potentially result in adverse noise and air quality effects, as well as potentially adverse effects due to alteration of drainage patterns. However, adverse effects would be avoided by implementing environmental commitments, AMMs, and Mitigation Measure SW-4; NOI-1a and NOI-1b; AQ-21, AQ-24, and the applicable district-specific air quality mitigation measures described above.

***CEQA Conclusion:*** Grading and reconstructing irrigation and drainage facilities, where placement of transmission line poles cannot avoid agricultural lands, could result in significant environmental impacts related to noise and alteration of drainage patterns, as well as significant impacts on air quality. Implementation of environmental commitments (e.g., erosion and sediment control plans; SWPPPs; fugitive dust control measures; a construction equipment exhaust reduction plan; a noise abatement plan; AMM3, AMM4 and AMM35; Mitigation Measure SW-4; and Mitigation Measures NOI-1a and NOI-1b) would ensure that these environmental impacts are less than significant.

### 31.5.1.3 Prepare and Implement Mosquito Management Plans

If mosquitoes are present during construction of the intakes or once the sedimentation basins, solids lagoons, and intermediate forebay become operational, the project proponents will use mosquito control techniques as applicable. Where feasible, biological and physical controls will be used to control mosquitos. These measures include using mosquito fish and increasing water circulation. In addition, an integrated pest management plan will be developed and BMPs used. Use of larvicides and adulticides to control mosquito populations may also be necessary.

***NEPA Effects:*** Use of larvicides and adulticides to control mosquito populations may be necessary as part of implementing this environmental commitment. If so, the effects of these chemicals would need to be evaluated and a monitoring program established to evaluate effects, if any, that application would have on macroinvertebrates and associated covered fish and wildlife species. Because it cannot be known in advance whether the application of larvicides or adulticides would be necessary, which chemicals would be used, their level of toxicity, or where they would be applied, this action would be considered adverse. Mosquito larvicide and adulticide applications are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act. Application of these pesticides over or near surface water will require coverage under the National Pollutant Discharge Elimination System (NDPES). Project proponents would adhere to requirements under this permit to ensure that water quality impacts, and thus impacts on fish and macroinvertebrates are avoided. In addition, should the use of chemical pesticides be necessary, evaluation and monitoring of these chemicals would avoid or minimize effects on avian and terrestrial wildlife as well.

***CEQA Conclusion***: Consultation, BMPs, and Mosquito Management Plans related to reducing mosquito populations would be primarily biological or physical actions, and would have a less-than-significant impact. However, the use of larvicides or adulticides, if needed to control mosquito populations, could affect macroinvertebrates and associated covered fish and wildlife species, which would be considered a significant impact should it occur. However, because evaluating and monitoring the effects of these chemicals on species would avoid or minimize environmental impacts, and because project proponents would be require to adhere to requirements under the required National Pollutant Discharge Elimination System (NPDES) permit if larvicides and adulticides are to be applied, this impact would be less than significant.

### 31.5.1.4 Disposal and Reuse of Spoils, Reusable Tunnel Material (RTM), and Dredged Material

In the course of constructing project features, substantial quantities of material may be removed from their existing locations based on their properties or the need for excavation of particular features. These materials will require handling, storage, and disposal, as well as chemical characterization, prior to any reuse. It is anticipated that one or more of the disposal and reuse methods could be implemented on any individual spoil, reusable tunnel material (RTM), or dredged material site. Depending on which combination of these approaches is selected, implementation of material reuse plans could create environmental impacts related to ground disturbance, noise, release of hazardous materials, traffic, air quality, water quality, and Important Farmland or farmland with habitat value for covered species.

## Ground Disturbances

Implementing this environmental commitment inherently involves ground disturbance, such as excavation of temporary and long-term storage areas, deposition of topsoil or materials removed from construction sites, and construction of protective berms and erosion protection measures at long-term storage sites. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. Vegetative material from work site clearing spread over the topsoil after earthwork is completed could disturb natural communities on the receiving site. Performance standards under this environmental commitment would ensure that vegetative material would be spread over topsoil only where such material does not contain seeds of undesirable nonnative species. In addition, to the extent practicable, material would not be temporarily stored in wetlands and surface waters, vernal pool, alkali seasonal wetland, grasslands, or riparian areas. If it is necessary to temporarily store materials in any of the habitat types listed above, the appropriate covered species AMMs would be followed for that habitat type, such as AMM20 for sandhill crane. Disturbances of natural communities would be further minimized by implementing additional AMMs including AMM1, AMM2, AMM10, and AMM11 (described in Section 31.5.1.1, *Perform Geotechnical Studies*).

## Noise

Earthwork and grading activities to restore sites to preconstruction conditions and to apply the materials consistent with their reuse could create noise effects. However, this environmental commitment stipulates that temporary storage sites would be located farther than 100 ft. from residential or commercial buildings. Other noise effects and measures to avoid or minimize them would be the same as those described under 31.5.1.1, *Perform Geotechnical Studies*, and 31.5.1.2, *Transmission Line Pole Placement.* Also see Chapter 23, *Noise*, for detail.

## Hazardous Materials

Hazardous materials excavated during construction will be segregated from other construction spoils and properly handled in accordance with applicable federal, state, and local regulations. Riverine or in-Delta sediment dredging and dredge material disposal activities may involve potential contaminant discharges not addressed through typical NPDES or State Water Resources Control Board General Permit processes.

BMPs will be implemented during handling and disposal of any potentially hazardous dredged material as part of this environmental commitment to avoid release of this material. These measures include, among others, that the Implementation Office would ensure the preparation and implementation of a pre-dredge sampling and analysis plan (SAP) to be developed and submitted by the contractors as part of the water plan required per standard DWR contract specifications Section 01570. Prior to initiating any dredging activity, the SAP will evaluate the presence of contaminants that may affect water quality from a variety of discharge routes. Dredging will be conducted within the allowable in-water "work windows" established by USFWS, NMFS, and CDFW, and in a manner that will not cause turbidity in the receiving water, as measured in surface waters 300 feet down-current from the construction site, to exceed the Basin Plan objectives beyond an approved averaging period by the Central Valley Regional Water Quality Control Board and CDFW. Silt curtains will be employed to control turbidity, if necessary.

These BMPs as well as environmental commitment measures implemented as part of the HMMPs, SPCCPs, and SWPPPs, (described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*),

would minimize the potential for accidental releases of potentially hazardous materials contained in excavated and/or dredged material, and would help contain and remediate hazardous spills should they occur. Accordingly, it is unlikely that the general public or the environment would be adversely affected.

## Traffic

Many of these activities involved in this environmental commitment would require trucks or barges to gather and haul materials from one section of the Plan Area to another. For instance, reuse of material in the implementation of tidal habitat associated with CM4, *Tidal Natural Communities Restoration* (or EC4), could require material to be transported to locations in the West Delta ROA (including Sherman and Twitchell Islands) or the Cosumnes/Mokelumne ROA (including Glannvale Tract and McCormack-Williamson Tract), among other areas. Locations for reuse in support of levee stability could include areas protected by nonproject levees or where levee problems have been reported in the past, including Staten Island, Bouldin Island, Empire Tract, Webb Tract, Bacon Island, or other places in the Delta. While reuse locations near to the spoil or RTM areas would be preferred, such activity would require use of local roadways, which could lead to short-term effects on traffic. This environmental commitment would minimize traffic impacts by selecting storage sites within 10 miles of the construction feature. In addition, Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan, would be available to reduce adverse effects (see Chapter 19, *Transportation*).

## Air Quality

Similar to restoration and enhancement actions of CMs 2–11, grading, excavating, and placing fill material to implement this environmental commitment could generate criteria pollutant and GHG exhaust emissions from grading equipment (e.g., grader, bulldozer) and haul trucks, and fugitive dust from excavation activities (Chapter 22, *Air Quality and Greenhouse Gases*). Earthwork and grading activities to restore sites to preconstruction conditions and to apply the materials consistent with their reuse could also create effects on air quality. This could result in adverse effects if activities are inconsistent with applicable GHG reduction plans, do not contribute to a lower carbon future, or generate excessive emissions, relative to other projects throughout the state. Site selection criteria under this environmental commitment, such as locations within 10 miles of construction feature would minimize truck travel to help address air quality effects. Implementing a construction equipment exhaust reduction plan (an environmental commitment) would also help reduce adverse effects. Mitigation Measures AQ-21, AQ-24, and AQ-27: Prepare a Land Use Sequestration Analysis to Quantify and Mitigate [as Needed] GHG Flux Associated with Conservation Measures and Associated Project Activities would be available to reduce effects, but may not be sufficient to avoid an adverse effect.

## Water Quality

Excavation activities and Dredged Material Disposal (DMD) sites could discharge contaminants to surface waters. This environmental commitment contains measures to protect water quality, such as conducting dredging within the allowable in-water “work windows” established by USFWS, NMFS, and CDFW; designing DMD sites to contain all of the dredged material and all systems and equipment associated with necessary return flows from the DMD site to the receiving water will be operated to maximize treatment of return water and optimize the quality of the discharge. Temporary storage sites will be constructed using appropriate BMPs (such as erosion and sediment

control measures for examples) to prevent discharges of contaminated stormwater to surface waters or groundwater. Upland disposal of dredged material at least 150 feet from surface water bodies will help ensure that the material will not be in contact with surface water prior to its draining, characterization, and potential treatment. Features of the long-term material storage areas will include berms and erosion protection measures to contain storm runoff as necessary and provisions to allow for truck traffic during construction. The development and implementation of erosion and sediment control plans, as part of the environmental commitments, and compliance with NPDES and Central Valley Regional Water Quality Control Board permit requirements would reduce effects on water quality. BMPs, environmental commitments, compliance with applicable permits, and mitigation measures such as SOILS-2b (which includes a topsoil storage and handling plan) and would ensure that effects on water quality are not adverse.

## Important Farmland

Locations for reuse in support of levee stability could include areas protected by nonproject levees or where levee problems have been reported in the past, including Staten Island, Bouldin Island, Empire Tract, Webb Tract, Bacon Island, or other places in the Delta. If materials are applied for the purposes of flood protection, flood response, habitat restoration or subsidence reversal, it is possible that existing topsoil could be overcovered and that Important Farmland or farmland with habitat value for one or more covered species could be disturbed or temporarily or converted from active agricultural uses. Additionally, materials placed near levees could affect drainage and/or irrigation infrastructure. However, mitigation measures such as AG-1, which includes preparation of an Agricultural Lands Stewardship Plan, would be available to address adverse effects associated with implementation of this commitment.

If material is used for habitat restoration that would have otherwise been implemented as part of the project, reuse of materials could offset the need for fill materials from other sources. Such effects would be described in further detail by individual site-specific environmental review for habitat restoration activities.

***NEPA Effects:*** In summary, activities associated with disposal and reuse of spoils, RTM, and dredged materials could potentially adversely affect the environment through ground disturbance, noise, hazardous materials, traffic, air quality, water quality, Important Farmland or farmland with habitat value for covered species. Depending on the selected reuse strategies, implementation of spoils, RTM, and dredged material reuse plans could also result in beneficial effects associated with flood protection and response, habitat creation, and depth to groundwater in areas where the ground level is raised. Implementing AMMs such as *AMM10 Restoration of Temporarily Affected Natural Communities*; other general and species-specific AMMs; a range of environmental commitments (e.g., HMMP, SPCCP, and SWPPPs); resource-specific mitigation measures (e.g., AG-1, SOILS-2b, NOI-1a, and NOI-1b; TRANS-1a); and compliance with permits would reduce or avoid adverse effects. Accordingly, it is anticipated that implementing this environmental commitment would, not result in these adverse effects. However, although measures to reduce effects on air quality and greenhouse gas emissions and Mitigation Measures AQ-21, AQ-24, and AQ-27 would be implemented, effects on air quality may remain adverse.

Furthermore, depending on the selected reuse strategies, implementation of spoils, RTM, and dredged material reuse plans could result in beneficial effects associated with flood protection and response, habitat creation, and depth to groundwater in areas where the ground level is raised.

***CEQA Conclusion:*** Activities associated with disposal and reuse of spoils, RTM, and dredged materials could potentially have significant impacts related to ground disturbance, noise, hazardous materials, traffic, air quality, water quality, and Important Farmland or farmland with habitat value for covered species. Implementing BMPs, AMMs, other environmental commitments, and mitigation measures described above would reduce most impacts to a less-than-significant level. BMPs, AMMs, other environmental commitments, and Mitigation Measures AQ-21, AQ-24, and AQ-27 would be implemented to reduce impacts on air quality and greenhouse gas emissions, but they may not reduce impacts to a less-than-significant level (see Chapter 22, *Air Quality and Greenhouse Gases*). Consequently, the impact on air quality could be significant and unavoidable. Implementing this environmental commitment could also have beneficial impacts, such as flood protection and response, habitat creation, and depth to groundwater in areas where the ground level is raised.

### 31.5.1.5 Assist Water Purveyors in Developing Methods to Reduce Potential Water Quality Effects

The project proponents would assist in-Delta municipal, industrial, and agricultural water purveyors that will be subject to significant water quality effects from operation of the water conveyance facilities, and effects on dissolved organic carbon due to habitat restoration activities.

Construction activities carried out under this commitment could cause environmental effects related to ground disturbance, instream construction activities, and generation of noise and emissions, as described below.

#### Ground Disturbance

Construction activities related to the following concepts, which affected purveyors would consider to address adverse water quality effect, would result in ground disturbances that could adversely affect natural communities in the Plan Area.

- Developing water supply connections to SWP facilities or proposed project intertie (municipal uses) to provide an alternative water supply during poor Delta water quality periods.
- Expanding the existing North Bay Aqueduct intake capacity to facilitate increased diversion efficiency and quantity during favorable water quality periods.
- Implementing the North Bay Aqueduct Alternative Intake Project to establish an alternative surface water intake on the Sacramento River upstream of the Sacramento Regional Wastewater Treatment Plant discharge.

Ground disturbance effects would be similar to those described in Section 31.5.1.1, *Perform Geotechnical Studies*, but would occur at different locations. Provisions to avoid, reduce and minimize these effects on the environment would also be similar. Examples of these provisions include AMM1, AMM2, AMM10 and AMM11 (described in Section 31.5.1.1, *Perform Geotechnical Studies*).

#### Instream Construction

Instream construction activities could result in turbidity, accidental spills of hazardous materials, disturbance of contaminated sediment, and underwater noise. These activities could create effects on fish and aquatic resources. Adverse effects on covered fish species would be minimized and reduced by limiting the duration of in-water construction activities and by implementing the

following environmental commitments: conduct environmental training; and develop and implement site-specific SWPPPs; HMMPs; an erosion and sediment control plan; a SPCCP; and a fish rescue and salvage plan. Related AMMs would also be implemented to reduce these effects (e.g., AMM3, AMM4, AMM5, AMM8, and AMM32 [see Appendix 3B, *Environmental Commitments, AMMs, and CMs*, for detail]).

## Noise

Construction-related noise effects on noise-sensitive land uses, sensitive receptors, and covered species would be similar to those described in Section 31.5.1.1, *Perform Geotechnical Studies*, but would occur at different locations. Provisions to avoid, reduce, and minimize these effects on the environment would also be similar. Examples of these provisions include AMM1, AMM2, AMM10, and AMM11 (described in Section 31.5.1.1, *Perform Geotechnical Studies*); Mitigation Measures NOI-1a and NOI-1b; and implementation of a noise abatement plan.

## Air Quality

Effects on air quality would be similar to those described in Section 31.5.1.2, *Transmission Line Pole Placement*, although the number and types of heavy-duty equipment, locations, and construction duration, amount of disturbed area would differ. Should these emissions exceed the applicable air district thresholds or federal de minimis thresholds this would be considered an adverse effect on air quality. As part of certain environmental commitments, the project proponents will develop and implement a construction equipment exhaust reduction plan to reduce criteria air pollutants and GHG emissions from construction equipment, and will implement fugitive dust control measures to reduce construction-related fugitive dust. These environmental commitments and related AMM (AMM35) would reduce the severity of any potential air quality effects. In addition, implementation of Mitigation Measures AQ-21, AQ-24, and AQ-27 would further help reduce air quality and GHG effects on the environment.

***NEPA Effects***: In summary, construction activities that could be implemented as part of this commitment could cause environmental effects related to ground disturbance, instream construction activities, and generation of noise and emissions. Implementing the AMMs, environmental commitments described above, as well as Mitigation Measures AQ-21, AQ-24, and AQ-27, and NOI-1a and NOI-1b, would reduce the severity of these types of effects. However, because it is not known which of the aforementioned concept options described above would be implemented, and because each would vary in the severity and location of effects relative to the other, these effects are considered adverse.

***CEQA Conclusion:*** Construction activities implemented as part of this commitment could result in significant environmental impacts related to ground disturbance, instream construction activities, and generation of noise and emissions. Implementation of the AMMs, environmental commitments described above, as well as Mitigation Measures AQ-21, AQ-24, AQ-27, NOI-1a, and NOI-1b, would reduce the severity of these impacts. However, because it is not known which of the aforementioned concept options described above would be implemented, and because each would vary in the severity and location of effects relative to the other, this impact is considered significant and unavoidable.

### 31.5.1.6 Enhance Recreation Access in the Vicinity of the Proposed Intakes

DWR would enhance the visual character of the area by creating new wildlife viewing sites, enhance interest in the construction site by constructing viewing areas and displaying information about the project, and help ensure the elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for the Sacramento–San Joaquin Delta and Suisun Marsh to enhance bicycle and foot access to the Delta. This would include constructing elements of the American Discovery Trail and the potential conversion of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut Grove.

Construction activities carried out under this environmental commitment could cause environmental effects related to ground disturbance, instream construction activities, and generation of noise and emissions.

#### Ground Disturbance

Construction activities related to constructing viewing sites and converting the abandoned Southern Pacific Railroad rail line would result in ground disturbances that could adversely affect terrestrial biological resources or natural communities in the Plan Area. It is assumed that impacts related to the potential conversion of the abandoned Southern Pacific Railroad rail line would addressed under its own CEQA/NEPA environmental document, and these impacts are not specifically addressed further here.

Ground disturbance effects would be similar to those described in Section 31.5.1.1, *Perform Geotechnical Studies*, but would occur over small areas at multiple different locations. Provisions to avoid, reduce, and minimize these effects on the environment would also be similar. Examples of these provisions include AMM1, AMM2, AMM10, and AMM11, *Covered Plant Species*. With applicable AMMs, other environmental commitments (i.e., HMMP, SPCCP, and SWPPs), and mitigation measures described in Chapter 12, *Terrestrial Biological Resources* (e.g. Mitigation Measure BIO-55: Conduct preconstruction surveys for noncovered special-status reptiles and implement applicable AMMs; Mitigation Measure BIO-75a: Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds); and other species-specific measures to avoid and minimize impacts, potential effects would not be adverse.

#### Instream Construction

Instream construction activities, if required, could result in turbidity, accidental spills of hazardous materials, disturbance of contaminated sediment, and underwater noise. These activities could cause effects on fish and aquatic resources. Risk of fish stranding, loss of spawning, rearing or migration habitat, and predation are likely to be negligible because of the small areas affected and short duration of construction. Adverse effects on covered fish species would be minimized and reduced by limiting the duration of in-water construction activities and by implementing environmental commitments such as conducting environmental training, and SWPPPs; HMMPs; an erosion and sediment control plan; a SPCCP; and a fish rescue and salvage plan. Relevant AMMs would also be implemented to reduce these effects (e.g., AMM3, AMM4, AMM5, AMM8, and AMM32 [see Appendix 3B, *Environmental Commitments, AMMs, and CMs*, for detail]).

### Noise

Noise effects on sensitive receptors and land uses, fish, and wildlife would be similar to those described in Sections 31.5.1.1, *Perform Geotechnical Studies*, and 31.5.1.2, *Transmission Line Pole Placement*. As those sections describe, all applicable AMMs, environmental commitments, and mitigation measures would be implemented to avoid, reduce, or minimize potential adverse effects related to noise. Furthermore, construction at any particular site would be short-term.

### Air Quality

Construction of wildlife viewing sites and trail enhancements could involve the use of earthmoving equipment and vehicles for transporting materials and workers. Moving earth could create fugitive dust. However, due to the location, and nature of construction, the intensity of this type of construction activity would be low, and the duration of construction would be short-term for any individual site requiring this work. In addition, the project proponents will implement environmental commitments, develop and implement a construction equipment exhaust reduction plan to reduce criteria air pollutants and GHG emissions from construction equipment, and implement fugitive dust control measures to reduce construction-related fugitive dust. These environmental commitments and related AMM35 and Mitigation Measures AQ-24 and AQ-21 would help reduce GHG emissions. Further, the following mitigation measures would be implemented, as applicable according to the air district(s) in which effects may occur: Mitigation Measures AQ-2a, AQ-2b, AQ-3a, AQ-3b, AQ-4a, and AQ-4b (see Section 31.5.1.2, *Transmission Line Pole Placement*, as well as Chapter 22, *Air Quality and Greenhouse Gases*, for details.)

***NEPA Effects***: In summary, construction activities carried out under this environmental commitment could cause environmental effects related to ground disturbance, instream construction activities, and generation of noise and emissions. However, because of the small areas affected, short duration of construction, and implementation of AMMs, environmental commitments and mitigation measures discussed above, the effects would be not adverse.

***CEQA Conclusion:*** Construction activities carried out under this environmental commitment could cause significant environmental impacts related to ground disturbance, instream construction activities, and generation of noise and emissions. Because of the small areas affected, short duration of construction, and implementation of AMMs, environmental commitments and mitigation measures, impacts would be less than significant.

## 31.5.1.7 Use of Slurry Cutoff Walls to Protect Groundwater during Dewatering Operations

### Ground Disturbance

Ground disturbances would result from the following activities: construction of guide walls, excavating a trench for the slurry cutoff walls. These localized ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. For example, the installation of the near the slurry walls near the proposed intake sites could result in the short-term disturbance or loss of tidal perennial aquatic and valley/foothill riparian natural communities. Disturbances of natural communities would be minimized by implementing Avoidance and Minimization Measures (AMMs), including *AMM1 Worker Awareness Training*; *AMM2 Construction Best Management Practices and Monitoring*; *AMM10 Restoration of Temporarily Affected*

*Natural Communities*; and *AMM11 Covered Plant Species*. AMM1 includes procedures to educate construction personnel on the types of sensitive resources in the project area, including sensitive timing windows for covered species, applicable environmental rules and regulations, and specific training on the measures required to avoid and minimize effects on natural communities and covered species. AMM2 includes standard practices and measures that would be implemented prior, during, and post-construction to avoid or minimize effects of ground-disturbing activities on sensitive resources like natural communities. Implementation of AMM10 would result in the restoration and monitoring of natural communities in the Plan Area that are temporarily affected by covered activities, and preconstruction botanical surveys undertaken and protective measures would be taken to protect plant species, as necessary.

### Noise

Noise effects on sensitive receptors and land uses, fish, and wildlife would be similar to those described in Sections 31.5.1.1, *Perform Geotechnical Studies*, and 31.5.1.2, *Transmission Line Pole Placement*. As those sections describe, all applicable AMMs, environmental commitments, and mitigation measures would be implemented to avoid, reduce, or minimize potential adverse effects related to noise. Furthermore, construction at any particular site would be short-term.

### Air Quality

Construction equipment exhaust, employee vehicle exhaust, and dust from grading, clearing, and excavation activities required to construct guide walls and slurry walls would be similar to those described in 31.5.1.2, *Transmission Line Pole Placement*. As those sections describe, all applicable AMMs, environmental commitments, and mitigation measures would be implemented to avoid, reduce, or minimize potential adverse effects related to noise. Furthermore, construction at any particular site would be short-term and mitigation measures would be implemented to mitigate and offset construction-generated criteria pollutant emissions (see Chapter 22, *Air Quality and Greenhouse Gases*): Mitigation Measures AQ-2a, AQ-2b, AQ-3a, AQ-3b, AQ-4a and AQ-4b.

***NEPA Effects***: In summary, construction activities carried out under this environmental commitment could cause environmental effects related to ground disturbance and generation of noise and emissions. However, because of the small areas affected, short duration of construction, and implementation of AMMs, environmental commitments and mitigation measures discussed above, the effects would be not adverse.

***CEQA Conclusion:*** Construction activities carried out under this environmental commitment could cause significant environmental impacts related to ground disturbance, instream construction activities, and generation of noise and emissions. Because of the small areas affected, short duration of construction, and implementation of AMMs, environmental commitments and mitigation measures, impacts would be less than significant.

## 31.5.2 Mitigation Measures

The mitigation measures with potential for significant environmental effects under CEQA or adverse effects under NEPA are discussed below. These mitigation measures are described in the associated resource chapter.

### 31.5.2.1 Mitigation Measure WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement

Under this mitigation measure, DWR would construct an Interconnection facility at Victoria Island or Clifton Court Forebay to convey water to Contra Costa Water District (CCWD) that meets specified water quality requirements, in quantities and on a schedule defined in the settlement agreement entered into between DWR and CCWD. For more detail on this mitigation measure and a discussion of any impacts that may occur as a result of implementing this mitigation measure, please see Appendix 31B, *Mitigation Measure WQ-7e: CCWD Settlement Agreement*.

### 31.5.2.2 Mitigation Measure SOILS-2b: Salvage, Stockpile, and Replace Topsoil and Prepare a Topsoil Storage and Handling Plan

Under this mitigation measure, up to 3 feet of the topsoil will be salvaged from construction work areas, stockpiled, and then applied over the surface of spoil and reusable tunnel material storage sites and borrowed areas.

Activities associated with this mitigation measure could cause environmental effects through ground disturbances, noise, air quality pollutants and emissions, traffic, and alteration of drainage patterns, as discussed below.

#### Ground Disturbances

Ground disturbances would result from activities such as excavating topsoil, transporting topsoil, and applying and grading topsoil. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing applicable AMMs.

#### Noise

Increased noise would result from the operation of excavation equipment, both at the excavation site and the application site, and from haul trucks. Excavation equipment and haul trucks would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

#### Air Quality

Increased GHGs and criteria pollutant emissions would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as related AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant and GHG emissions.

### Traffic

Increased traffic volumes would result from haul truck trips. As described in Impact TRANS-1 in Chapter 19, *Transportation*, Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would be available to reduce the severity of this effect, if all improvements required to avoid significant impacts are feasible and all necessary agreements are completed.

### Drainage

Alteration of drainage patterns would result from the placement of topsoil. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure SOILS-2b would potentially adversely affect the environment through ground disturbances, generation of emissions, traffic, and alteration of drainage patterns. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Increased traffic volume effects would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be adverse. Drainage effects from the placement of topsoil would be reduced by implementing mitigation measures. Overall, effects of Mitigation Measure SOILS-2b would not be adverse.

***CEQA Conclusion:*** Activities required as part of implementing Mitigation Measure SOILS-2b would potentially significantly impact the environment through ground disturbances, generation of noise and emissions, traffic, and alteration of drainage patterns. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would be less than significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Increased traffic volume impacts would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be significant. Alteration of drainage patterns from the placement of topsoil would be reduced by implementing mitigation measures. Overall, this impact would be less than significant.

## 31.5.2.3 Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related Underwater Noise

Under Mitigation Measure AQUA-1b, DWR will monitor underwater sound levels during impact pile driving to determine compliance with the underwater noise effects thresholds at a distance appropriate for protection of the species (183 dB SELcumulative for fish less than 2 grams; 187 dB SELcumulative for fish greater than 2 grams). If noise is expected to exceed applicable thresholds, an

attenuation device, such as a bubble curtain, or other mechanism to minimize noise, such as cofferdam dewatering, will be implemented.

***NEPA Effects:*** The installation, operation and removal of a bubble curtain apparatus or the installation and removal of pile isolation casings would have the potential to temporarily harass covered fish species that may be in close proximity to these activities. As a result of these activities, fish could be potentially be exposed to temporary increases in turbidity, disturbance of contaminated sediments, and accidental spills, particularly during installation and removal of the bubble curtain. Although it is likely that fish present in the work area would avoid the noise and activity associated with installation, operation (bubble curtain only), and removal of either of these attenuation devices, the measures described below would be implemented to minimize and avoid adverse effects on fish. Potential effects would be minimized by limiting the duration of the activities to the extent possible, by implementing *Environmental Commitment 6 Channel Margin Enhancement*, which sets the approved in-water construction window (Proposed in-water work windows vary within the Delta: June 1 to October 31 at the north Delta diversions, August 1 to October 31 at the barge landings, July 1 to November 30 at Clifton Court Forebay, and August 1 to November 30 at the head of Old River gate), and will minimize, but perhaps not completely avoid, the potential for injury or mortality. Implementation of environmental commitments *Fish Rescue and Salvage Plan* and *Barge Operations Plan* (as described in Appendix 3B) would also minimize adverse effects from construction-related disturbance. Implementation of environmental commitments *Conduct Environmental Training*; *Develop and Implement a Stormwater Pollution Prevention Plan* (SWPPP); *Develop and Implement an Erosion and Sediment Control Plan*; and *Develop and Implement a Hazardous Materials Management Plan* (HMMP) that includes a *Spill Prevention, Containment, and Countermeasure Plan* (SPCCP), as described in Appendix 3B, *Environmental Commitments, AMMs, and CMS*, will further reduce adverse effects. Therefore, there would be no adverse effect.

***CEQA Conclusion:*** The installation, operation and removal of a bubble curtain apparatus or the installation and removal of pile isolation casings would have the potential to temporarily harass covered fish species that may be in close proximity to these activities. As a result of these activities, fish could be potentially be exposed to temporary increases in turbidity, disturbance of contaminated sediments, and accidental spills, particularly during installation and removal of the bubble curtain. Although it is likely that fish present in the work area would avoid the noise and activity associated with installation, operation (bubble curtain only), and removal of either of these attenuation devices, the measures described below would be implemented to minimize and avoid significant impacts on fish. Potential impacts would be minimized by limiting the duration of the activities to the extent possible, by implementing *Environmental Commitment 6 Channel Margin Enhancement*, which sets the approved in-water construction window (expected to be June 1 through October 31), and will minimize, but perhaps not completely avoid, the potential for injury or mortality. Implementation of environmental commitments *Fish Rescue and Salvage Plan* and *Barge Operations Plan* (as described in Appendix 3B) would also minimize adverse effects from construction-related disturbance. Implementation of environmental commitments *Conduct Environmental Training*; *Develop and Implement a Stormwater Pollution Prevention Plan* (SWPPP); *Develop and Implement an Erosion and Sediment Control Plan*; and *Develop and Implement a Hazardous Materials Management Plan* (HMMP) that includes a *Spill Prevention, Containment, and Countermeasure Plan* (SPCCP), as described in Appendix 3B, *Environmental Commitments, AMMs, and CMS*, will further reduce significant impacts. Therefore, there would be no significant impacts.

### 31.5.2.4 Mitigation Measure BIO-176: Compensatory Mitigation for Fill of Waters of the U.S.

Under this mitigation measure, compensatory mitigation will consist of restoration, creation, and/or rehabilitation of aquatic habitat. Compensatory mitigation will consist of one or more of the following methods: purchase credits for restored/created rehabilitated habitat at an approved wetland mitigation bank; on-site restoration or rehabilitation of wetlands converted to uplands due to past land use activities; on-site creation of aquatic habitat; restoration or rehabilitation of wetlands within the Delta that were converted to uplands due to past land use activities; creation of aquatic habitat within the Delta; and/or payment to the Corps' Fee-in Lieu program.

Activities associated with this mitigation measure could cause environmental effects through conversion of Important Farmland, generation of noise and emissions, and alterations in drainage patterns, as discussed below.

#### Agricultural Land

Environmental effects could result from the conversion of agricultural land to wetlands. Further evaluation of these effects would depend on additional information relating to the location of the lands being converted. Because it is not yet known precisely where this compensatory mitigation will be implemented, further evaluation of these impacts would depend on additional information regarding the location of the lands being restored or rehabilitated. Implementation of Mitigation Measure AG-1 and species-specific AMMs would reduce the severity of this effect.

#### Noise

The creation or restoration of wetlands would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise as a result of operating excavation, and potentially other types of construction equipment. However, noise-related impacts would be of limited duration and would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

#### Air Quality

Increased GHGs and criteria pollutants would result from the operation of construction equipment if wetlands are rehabilitated or restored. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

#### Drainage

Alteration of drainage patterns would result from grading and constructing embankments and berms, which could result in local (onsite) ponding, erosion and siltation, and changes in runoff flow rates and velocities. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of AMM3 and AMM4, as well as environmental commitment measures implemented by the project proponents as part of erosion and sediment control plans and SWPPPs would avoid or minimize erosion and siltation effects. In addition, the implementation of Mitigation Measure SW-4

would require that project proponents implement measures to prevent an increase in runoff volume and rate from land-side construction areas and to prevent an increase in sedimentation in the runoff from the construction area.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure BIO-176 may cause adverse environmental effects through conversion of agricultural land, noise, air quality, and alteration of drainage. As previously described, agricultural land conversion effects may be adverse but AMMs and mitigation measures are available to address these effects. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Changes in drainage patterns from grading and constructing embankments and berms would be reduced by implementing mitigation measures.

***CEQA Conclusion:*** Activities required as part of implementing Mitigation Measure BIO-176 would potentially significantly impact the environment through conversion of agricultural land, noise, air quality, and alteration of drainage patterns. Noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage effects from grading and constructing embankments and berms would be reduced by implementing mitigation measures. Overall, these impacts would be less than significant. As previously described, impacts from the conversion of agricultural land to wetlands would be reduced by implementing AMMs and mitigation measures. However, depending on the feasibility of applying Mitigation Measure AG-1, the availability of lower-quality farmland for conversion, and the areal extent of land required, it is possible that impacts relating to agricultural land conversion would be significant and unavoidable.

### 31.5.2.5 Mitigation Measure BIO-179a: Conduct Food Studies and Monitoring for Wintering Waterfowl in Suisun Marsh

Under this mitigation measure, poorly managed wetlands (considered low biomass and food quality) will be identified and managed to improve food quality and biomass. Based on food studies and monitoring of these wetlands, it will be determined if the minimum commitment of 5,000 acres is sufficient to meet the goal of 1:1 compensation for loss of wintering waterfowl habitat with the protection and management of managed wetlands in perpetuity. If monitoring demonstrates that additional acreage is needed to meet this goal, additional acreage of protection or creation of managed wetlands and management will be required.

Activities associated with this mitigation measure could cause environmental effects through conversion of Important Farmland, generation of noise and emissions, and alterations in drainage patterns, as discussed below.

#### Agricultural Land

Environmental effects would result from the conversion of agricultural land to managed wetlands, which would occur if monitoring demonstrates that additional acreage of managed wetlands is needed. Further evaluation of these effects would depend on additional information relating to the location of the lands being converted. Implementation of Mitigation Measures AG-1 and AMMs

would reduce the severity of this effect. Further, project proponents would, where available and feasible, choose lower-quality farmland or farmland with lower habitat values, rather than convert Important Farmland or farmland of higher habitat value for wintering waterfowl habitat.

## Noise

The creation or construction of new managed wetlands would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise as a result of operating excavation, and potentially other types of construction equipment. However, noise-related would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from the operation of construction equipment. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

## Drainage

Alteration of drainage patterns would result from grading and constructing embankments and berms, which could result in local (onsite) ponding, erosion and siltation, and changes in runoff flow rates and velocities. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of AMM3 and AMM4, as well as environmental commitment measures implemented by the project proponents as part of erosion and sediment control plans and SWPPPs would avoid or minimize erosion and siltation effects. In addition, the implementation of Mitigation Measure SW-4 would require that project proponents implement measures to prevent an increase in runoff volume and rate from land-side construction areas and to prevent an increase in sedimentation in the runoff from the construction area.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure BIO-179a may cause adverse environmental effects through conversion of agricultural land, noise, air quality, and drainage. As previously described, agricultural land conversion effects may be adverse but AMMs and mitigation measures are available to address these effects. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects from grading and constructing embankments and berms would be reduced by implementing mitigation measures.

***CEQA Conclusion:*** Activities required as part of implementing Mitigation Measure BIO-179a would potentially significantly impact the environment through ground disturbances, noise, air quality, and alteration of drainage patterns. Noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated

with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage effects from grading and constructing embankments and berms would be reduced by implementing mitigation measures. Overall, these impacts would be less than significant. As previously described, impacts from the conversion of agricultural land to wetlands would be reduced by implementing AMMs and mitigation measures. However, depending on the feasibility of applying Mitigation Measure AG-1, the availability of lower-quality farmland for conversion, and the areal extent of land required, it is possible that impacts relating to agricultural land conversion would be significant and unavoidable.

### 31.5.2.6 Mitigation Measure BIO-179b: Conduct Food Studies and Monitoring to Demonstrate Food Quality of Palustrine Tidal Wetlands in the Yolo and Delta Basins

Under this mitigation measure, food studies and monitoring will be conducted to demonstrate the food quality of palustrine tidal habitats in these basins. If studies show that the assumption of no effect as a result of replacement of managed seasonal wetland with palustrine tidal habitats was inaccurate, and the food quality goal of 1:1 compensation for wintering waterfowl habitat is not met, additional acreage of protection or creation of managed wetland and management will be required.

Activities associated with this mitigation measure would cause environmental effects through conversion of agricultural land, noise, air quality pollutants and emissions, and drainage, as discussed below.

#### Agricultural Land

Environmental effects would result from the conversion of agricultural land to managed wetlands if monitoring demonstrates that additional acreage is needed. Further evaluation of these effects would depend on additional information relating to the location of the lands being converted. Implementation of *AMM 2 Construction Best Management Practices and Monitoring*, and Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to Preserve Agricultural Productivity and Mitigate for Loss of Important Farmland and Land Subject to Williamson Act Contracts or in Farmland Security Zones, will further reduce potential effects. AMM2 includes standard practices and measures that would be implemented prior, during, and post-construction to avoid or minimize effects of ground disturbing activities on sensitive resources like natural communities. Mitigation Measure AG-1 requires project proponents to develop Agricultural Lands Stewardship Plans (ALSPs) prior to the commencement of any construction activities or other physical activities that would involve adverse effects on Important Farmland or land subject to Williamson Act contracts or in Farmland Security Zones. A draft ALSP shall be included with any publicly circulated environmental document for the proposed conservation measure or project activity in order to obtain public input. Additionally, project proponents would, where available and feasible, choose lower-quality farmland or farmland with lower habitat values rather than convert Important Farmland or land of higher habitat value for wintering waterfowl habitat.

#### Noise

Monitoring wetlands and constructing new wetlands, if needed, would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise as a

result of operating excavation equipment. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1 *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutants and GHG emissions.

## Drainage

Alteration of drainage patterns would result from grading and constructing embankments and berms. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure BIO-179b may cause adverse environmental effects through conversion of agricultural land, noise, air quality, and alteration of drainage patterns. As previously described, agricultural land conversion effects may be adverse but AMMs and mitigation measures are available to address these effects. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects from grading and constructing embankments and berms would be reduced by implementing mitigation measures.

***CEQA Conclusion:*** Activities required as part of implementing Mitigation Measure BIO-179b would potentially significantly impact the environment through ground disturbances, noise, air quality, and alteration of drainage patterns. Noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage effects from grading and constructing embankments and berms would be reduced by implementing mitigation measures. Overall, these impacts would be less than significant. As previously described, impacts from the conversion of agricultural land to wetlands would be reduced by implementing AMMs and mitigation measures. However, depending on the feasibility of applying Mitigation Measure AG-1, the availability of lower-quality farmland for conversion, and the areal extent of land required, it is possible that impacts relating to agricultural land conversion would be significant and unavoidable.

### 31.5.2.7 Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to Preserve Agricultural Productivity and Mitigate for Loss of Important Farmland and Land Subject to Williamson Act Contracts or in Farmland Security Zones

Under this mitigation measure, the project proponents will develop ALSPs, as described in Chapter 14, *Agricultural Resources*.

Activities associated with this mitigation measure, such as removing and stockpiling topsoil and replacing topsoil after project completion; making topsoil available to less productive agricultural lands, and relocating or replacing wells, pipelines and other infrastructure, would cause environmental effects through ground disturbance, noise, air quality pollutants and emissions, traffic volumes, and drainage, as discussed below.

#### Ground Disturbances

Ground disturbances would result from activities such as excavating topsoil, transporting topsoil, and applying and grading topsoil; making topsoil available to less productive agricultural lands; and relocating or replacing wells, pipelines, power lines, drainage systems, and other infrastructure. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1 *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

#### Noise

Increased noise would result from the operation of excavation equipment and haul trucks related to topsoil, both at the excavation site and the application site, as well as from construction equipment required to relocate or replace wells, pipelines, power lines, drainage systems, and other infrastructure. Excavation equipment and haul trucks would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1 *Perform Geotechnical Studies*.

#### Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant and GHG emissions.

## Traffic

Increased traffic volumes would result from haul truck trips. As described in Impact TRANS-1 in Chapter 19, *Transportation*, Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would be available to reduce the severity of this effect, if all improvements required to avoid significant impacts are feasible and all necessary agreements are completed.

## Drainage

Alteration of drainage patterns would result from the placement of topsoil. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

***NEPA Effects***: In summary, activities required as part of implementing Mitigation Measure AG-1 would potentially adversely affect the environment through ground disturbances, noise, air quality, traffic, and drainage. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. However, because the precise locations of wells and other infrastructure that may need to be replaced have not yet been identified and because it is not known whether these mitigation measures will be able to reduce construction noise to levels below applicable thresholds at all locations, noise may result in adverse effects. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Increased traffic volume effects would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be adverse. Drainage effects from the placement of topsoil would be reduced by implementing mitigation measures. Overall, effects of Mitigation Measure AG-1 would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AG-1 would potentially significantly affect the environment through ground disturbances, noise, air quality, traffic, and drainage. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. However, because the precise locations of wells and other infrastructure that may need to be replaced have not yet been identified and because it is not known whether these mitigation measures will be able to reduce construction noise to levels below applicable thresholds at all locations, noise may result in significant impacts. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Increased traffic volume impacts would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be significant. Drainage impacts from the placement of topsoil would be reduced by implementing mitigation measures. Overall, impacts of Mitigation Measure AG-1 would be less than significant.

### 31.5.2.8 Mitigation Measure GW-5: Agricultural Lands Seepage Minimization

Under this mitigation measure, areas potentially subject to seepage caused by implementation of habitat restoration and enhancement actions or operation of water conveyance facilities will be evaluated on a site-specific basis by project proponents prior to the commencement of construction activities to identify baseline groundwater conditions. In areas where operation of water conveyance facilities or habitat restoration is determined to result in seepage impacts on adjacent parcels, potentially feasible additional mitigation measures will be developed in consultation with affected landowners.

This mitigation measure would cause environmental effects through noise, air quality pollutants and emissions, and drainage, as discussed below.

#### Noise

Installing or improving subsurface agricultural drainage, as well as pumping, would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise as a result of operating excavation equipment. However, general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*, would be available to address noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species.

#### Air Quality

Increased GHGs and criteria pollutants would result from the operation of equipment used to install or improve subsurface agricultural drainage, as well as pumping. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, would be available to address criteria pollutant and GHG emissions, as described in Section 31.5.1.2, *Transmission Line Pole Placement*.

#### Drainage

Alteration of drainage patterns would result from installing drainage and pumping. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure GW-5 may cause adverse environmental effects related to noise, air quality, and drainage. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects from installing drainage and pumping would be reduced by implementing mitigation measures. However, because the precise locations of seepage impacts that would require drainage and pumping have not yet been identified and because it is not known whether these mitigation measures will be able to

reduce construction noise to levels below applicable thresholds at all locations, these activities may result in adverse effects.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measures GW-5 would cause environmental impacts through noise, air quality, and drainage. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts from installing drainage and pumping would be reduced by implementing mitigation measures. However, because the precise locations of seepage impacts that would require drainage and pumping have not yet been identified and because it is not known whether these mitigation measures will be able to reduce construction noise to levels below applicable thresholds at all locations, these activities may result in impacts that are significant and unavoidable.

### 31.5.2.9 Mitigation Measure GW-7: Provide an Alternate Source of Water

For areas that will be on or adjacent to implemented restoration components, groundwater quality will be monitored by project proponents prior to implementation to establish baseline groundwater quality conditions. Unacceptable degradation of groundwater quality will be determined by comparing post-implementation groundwater quality to relevant regulatory standards and with consideration of previously established beneficial uses. For wells affected by degradation in groundwater quality, water of a quality comparable to pre-project conditions would be provided. Options for replacing the water supply could include drilling an additional well or a deeper well to an aquifer zone with water quality comparable to or better than preconstruction conditions or replacement of potable water supply.

Activities associated with this mitigation measure, such as monitoring groundwater quality and drilling additional or deeper wells would cause environmental effects through ground disturbance, noise, air quality pollutants and emissions, and traffic volumes, as discussed below.

#### Ground Disturbances

Ground disturbances would potentially result from drilling additional or deeper wells. Construction activities are anticipated to be localized and would not result in change in land uses. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1 *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

#### Noise

The well drilling activities would potentially result in short-term noise impacts for several days. Depending on the location, excavation equipment would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., Swainson's hawk, riparian brush rabbit, and California red-legged frog) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs,

mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

### Air Quality

Increased GHGs and criteria pollutants would result from the operation of drilling equipment. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

### Traffic

Increased traffic volumes would result from construction and drilling equipment. As described in Impact TRANS-1 in Chapter 19, *Transportation*, Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would be available to reduce the severity of this effect, if all improvements required to avoid significant impacts are feasible and all necessary agreements are completed.

***NEPA Effects***: In summary, activities required as part of implementing Mitigation Measure GW-7 would potentially adversely affect the environment through ground disturbances, noise, air quality, and traffic. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Increased traffic volume effects would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be adverse. Overall, effects of Mitigation Measure GW-7 would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure GW-7 would potentially significantly affect the environment through ground disturbances, noise, air quality, and traffic. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Increased traffic volume impacts would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be significant. Overall, impacts of Mitigation Measure GW-7 would be less than significant.

## 31.5.2.10 Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites

Under this mitigation measure, to compensate for the loss of informal fishing access sites during construction, the project proponents will enhance nearby formal fishing access sites. As part of design of the intakes, the project proponents will ensure that public access to the Sacramento River, including fishing access, will be incorporated into the design of the intakes. The access sites will be placed a reasonable distance from the intake to ensure the safety of recreationists and to compensate for the loss that would occur as a result of constructing the intakes.

Activities associated with this mitigation measure, such as improving public access to the Sacramento River, constructing improvements such as bathrooms, parking lots, and boat ramps, and modifying levees would cause environmental effects through noise, air quality pollutants and emissions, drainage, sedimentation, and disruption of recreation access, as discussed below.

## Noise

Improving access to the Sacramento River, constructing improvements of facilities, and modifying levees would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas), and covered species (e.g., terrestrial and aquatic) to noise as a result of operating construction equipment. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from the operation of equipment used for construction of recreational improvements. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

## Drainage

Alteration of drainage patterns would result from grading and construction. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

## Sedimentation

Grading and construction near the shoreline could cause environmental effects to fish related to sedimentation, turbidity, and disturbance of contaminated sediment. Adverse effects on fish from increases in turbidity during in- or near-water construction and maintenance activities would be minimized through adherence to applicable federal, state, and local regulations; project-specific designs; BMPs; AMMs, and environmental commitments. *AMM1 Worker Awareness Training* would educate construction personnel on the types of sensitive resources in the project area, the applicable environmental rules and regulations, and the measures required to avoid and minimize effects on these resources. *AMM2 Construction Best Management Practices and Monitoring* would develop practices and measures to be implemented to avoid or minimize effects of construction activities on sensitive resources (e.g., species, habitat), and monitoring protocols for verifying the protection provided by the implemented measures. *AMM4 Erosion and Sediment Control Plan* would develop a plan as part of the National Pollutant Discharge Elimination System permitting process for ground-disturbing projects, to control short-term and long-term erosion and sedimentation effects of a project and to restore soils and vegetation in areas affected by construction activities. *AMM8 Fish Rescue and Salvage Plan* would prepare and implement a plan to avoid or minimize the stranding of

fish during construction activities, particularly the potential entrapment of fish during cofferdam construction. The plan identifies the appropriate procedures for excluding fish from the construction zones and procedures for removing and handling fish should they become trapped. Environmental commitments would develop and implement erosion and sediment control plans, control fugitive dust, and dispose of and reuse spoils and dredged material. These commitments and plans are intended to avoid, prevent or minimize turbidity (e.g., implementation of site-specific erosion and sediment control plans).

### Access

Construction of improvements and facilities could cause temporary effects by disrupting recreation access. This mitigation measure would provide adequate signage directing anglers to formal fishing sites while bank access is limited due to construction. Overall this mitigation measure would provide benefits to recreation by expanding recreation areas. Additionally, environmental commitments and Mitigation Measure TRANS-1a would reduce these effects. DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measures REC-2 would cause environmental effects through noise, air quality, drainage, and sedimentation. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects from grading and construction would be reduced by implementing AMMs and mitigation measures. Sedimentation effects would be reduced by implementing mitigation measures, AMMs, and environmental effects. Overall, effects of Mitigation Measure REC-2 would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measures REC-2 would cause environmental impacts through noise, air quality, drainage, and sedimentation. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts from grading and construction would be reduced by implementing AMMs and mitigation measures. Sedimentation impacts would be reduced by implementing mitigation measures, AMMs, and environmental commitments. Overall, impacts of Mitigation Measure REC-2 would be less than significant.

## 31.5.2.11 Mitigation Measure REC-6: Provide a Temporary Alternative Boat Launch to Ensure Access to San Luis Reservoir

Under this mitigation measure, DWR and Reclamation will work with DPR to establish a boat ramp extension at or near the Basalt boat launch or other alternative boat ramp site at San Luis Reservoir to maintain reservoir access in years when access becomes unavailable.

Constructing a boat launch under this mitigation measure could cause environmental effects through ground disturbance, noise, air quality pollutants and emissions, sedimentation, disruption of recreation access.

### Ground Disturbances

Ground disturbances would result from construction activities. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

### Noise

Constructing the boat launch would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas), and covered species (e.g., terrestrial and aquatic) to excessive noise as a result of operating construction equipment. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

### Air Quality

Increased GHGs and criteria pollutants would result from the operation of equipment used for construction of recreational improvements. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

### Sedimentation

Construction near the shoreline could cause environmental effects to fish related to sedimentation, turbidity, and disturbance of contaminated sediment. Adverse effects on fish from increases in turbidity during in- or near-water construction and maintenance activities would be minimized through adherence to applicable federal, state, and local regulations; project-specific designs; BMPs; AMMs, and environmental commitments, as described in Section 31.5.2.10, *Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites*. These commitments and plans are intended to avoid, prevent or minimize turbidity (e.g., implementation of site-specific erosion and sediment control plans).

### Access

Construction of improvements and facilities could cause temporary effects by disrupting recreation access. This mitigation measure would provide adequate signage directing anglers to formal fishing sites while bank access is limited due to construction. Overall this mitigation measure would provide benefits to recreation by ensuring continued access to existing recreational facilities. Additionally, environmental commitments and mitigation measures would reduce these effects, as described in Section 31.5.2.10, *Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites*.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measures REC-6 would cause environmental effects through noise, air quality, sedimentation, and disruption of recreation access. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Sedimentation effects would be reduced by implementing mitigation measures, AMMs, and environmental effects. Disruptions to recreation access would be minimized by mitigation measures and environmental commitments. Overall, effects of Mitigation Measure REC-6 would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measures REC-6 would cause environmental impacts through noise, air quality, sedimentation, and disruption of recreation access. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Sedimentation impacts would be reduced by implementing mitigation measures, AMMs, and environmental commitments. Disruptions to recreation access would be minimized by mitigation measures and environmental commitments. Overall, impacts of Mitigation Measure REC-6 would be less than significant.

### 31.5.2.12 Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible

Under this mitigation measure, project proponents will make site-specific design decisions to locate new transmission lines and access routes to minimize effects on vegetation where feasible. Various measures, such as siting new transmission lines in existing transmission corridors and avoiding clearing large swaths of vegetation, will be taken to minimize aesthetic effects. Undergrounding transmission lines will not be used where implementation would constitute an adverse effect on sensitive habitats or sensitive species that would outweigh the reduction of visual effects.

Trenching for underground placement of transmission lines under this mitigation measure could cause environmental effects through noise, air quality pollutants and emissions, drainage alterations, and damage to cultural and paleontological resources.

#### Noise

Trenching for the underground placement of transmission lines would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas), and covered species (e.g., terrestrial and aquatic) to excessive noise as a result of operating construction equipment. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from the operation of equipment used for trenching for the underground placement of transmission lines. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

## Drainage

Alteration of drainage patterns would result from trenching for the underground placement of transmission lines. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation

## Cultural Resources

Effects on cultural resources could result from trenching for the underground placement of transmission lines. This effect could be adverse because construction damage may impair the integrity of resources determined to be historical resources and thus reduce their ability to convey their significance. Mitigation Measure CUL-1: Prepare a Data Recovery Plan and Perform Data Recovery Excavations on the Affected Portion of the Deposits of Identified and Significant Archaeological Sites would be available to address this affect, but would not guarantee that all of the scientifically important material would be retrieved because feasible archaeological excavation only typically retrieves a sample of the deposit, and portions of the site with important information may remain after treatment.

## Paleontological Resources

Effects on paleontological resources could result from trenching for the underground placement of transmission lines. The ground-disturbing activities that occur in geologic units sensitive for paleontological resources have the potential to damage or destroy those resources. Direct or indirect destruction of significant paleontological resources, as described in Chapter 27, *Paleontological Resources*, would represent an adverse effect because conveyance facility construction could directly or indirectly destroy unknown paleontological resources in geologic units known to be sensitive for these resources. However, any transmission lines constructed underground under this mitigation measure would be anticipated to be installed at a relatively shallow depth, and would be unlikely to affect paleontological resources. The shallow excavation and grading in surficial Holocene deposits that would likely take place for the construction of underground transmission lines could be addressed through implementation of Mitigation Measures PALEO-1b and 1d. Mitigation Measure PALEO-1a: Prepare a Monitoring and Mitigation Plan for Paleontological Resources would require project proponents to retain a qualified paleontologist or geologist (as defined by the SVP Standard Procedures [Society of Vertebrate Paleontology 2010]) to develop a comprehensive Paleontological Resources Monitoring and Mitigation Plan (PRMMP) for the project prior to construction, to help avoid directly or indirectly destroying a unique or significant paleontological resource. Mitigation Measure PALEO-1b: Review 90% Design Submittal and Develop Specific Language Identifying How the Mitigation Measures Will Be Implemented along

the Alignment would require project proponents to have a qualified individual review the 90% design submittal to finalize the identification of construction activities involving geologic units considered highly sensitive for paleontological resources.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measures AES-1a would have the potential to cause environmental effects through noise, air quality, drainage, and effects on cultural and paleontological resources. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects would be reduced by implementing AMMs and mitigation measures. Effects on cultural and paleontological resources would be minimized with implementation of mitigation measures. Overall, effects of Mitigation Measure AES-1a would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measures AES-1a would cause environmental impacts through noise, air quality, drainage, and effects on cultural and paleontological resources. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts from trenching would be reduced by implementing AMMs and mitigation measures. Effects on cultural resources would be minimized with implementation of Mitigation Measure CUL-1; however, this would not guarantee that all of the scientifically important material would be retrieved because feasible archaeological excavation only typically retrieves a sample of the deposit, and portions of the site with important information may remain after treatment. Therefore, with respect to cultural resources, implementation of this measure has the potential to result in a significant and unavoidable impact.

### 31.5.2.13 Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel Material Area Management Plan

The project proponents will develop and implement a spoil/borrow and RTM area management plan consistent with the environmental commitment to reduce the extent of negative visual alteration of existing visual quality or character of spoil, and especially borrow, sites from construction through remediation of terrain, revegetation, and other practices as described below. This mitigation measure will complement and is related to activities described under Mitigation Measure SOILS-2b, Chapter 10, *Soils*. The purpose of this measure is to prevent flattened, highly regular, or engineered slopes, with the exception to grading if the intended use of the site is agriculture.

***NEPA Effects:*** The activities associated with this mitigation measure that could cause environmental effects and the effects that would result would be the same as those described in Section 31.5.2.2, *Mitigation Measure SOILS-2b: Salvage, Stockpile, and Replace Topsoil and Prepare a Topsoil Storage and Handling Plan.*

In summary, activities required as part of implementing Mitigation Measure AES-1c would potentially adversely affect the environment through ground disturbances, noise, air quality, traffic, and drainage. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Increased traffic volume effects would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be adverse. Drainage effects from the placement of topsoil would be reduced by implementing mitigation measures. Overall, the effect would not be adverse.

***CEQA Conclusion:*** Activities required as part of implementing Mitigation Measure AES-1c would potentially significantly impact the environment through ground disturbances, noise, air quality, traffic, and drainage. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would be less than significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Increased traffic volume impacts would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be significant. Drainage effects from the placement of topsoil would be reduced by implementing mitigation measures. Overall, the impact would be less than significant.

### 31.5.2.14 Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned

Under this mitigation measure, the project proponents will restore barge unloading facility sites to preconstruction conditions once the facilities are decommissioned and removed to minimize the impact on visual quality and character at these sites.

Activities associated with this mitigation measure, such as grading facility sites and replacing plantings, could cause environmental effects through noise, air quality pollutants and emissions, drainage alterations, and sedimentation.

#### Noise

Operating excavating equipment would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., terrestrial and aquatic species) to excessive noise as a result of operating excavation equipment. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from operating excavating equipment. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would be available to address criteria pollutant and GHG emissions.

## Drainage

Alteration of drainage patterns would result from grading and planting. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

## Sedimentation

Excavation near the shoreline could cause environmental effects to fish related to sedimentation, turbidity, and disturbance of contaminated sediment. Adverse effects on fish from increases in turbidity during in- or near-water construction and maintenance activities would be minimized through adherence to applicable federal, state, and local regulations; project-specific designs; BMPs; AMMs, and environmental commitments, as described in Section 31.5.2.10, *Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites*. These commitments and plans are intended to avoid, prevent or minimize turbidity (e.g., implementation of site-specific erosion and sediment control plans).

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measures AES-1d would cause environmental effects through noise, air quality, drainage, and sedimentation. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects would be reduced by implementing mitigation measures. Sedimentation effects would be reduced by implementing mitigation measures, AMMs, and environmental effects. Overall, effects of Mitigation Measure AES-1d would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AES-1d would cause environmental impacts through noise, air quality, drainage, and sedimentation. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts from grading and planting would be reduced by implementing mitigation measures. Sedimentation impacts would be reduced by implementing mitigation measures, AMMs, and environmental commitments. Overall, impacts of Mitigation Measure AES-1d would be less than significant.

### 31.5.2.15 Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

Under this mitigation measure, the project proponents will use aesthetic design treatments to minimize the impact on existing visual quality and character in the study area associated with the introduction of water conveyance structures.

Activities associated with this mitigation measure, such as painting structures and implementing aesthetic design features at concrete or shotcrete structures, could cause environmental effects through release of hazardous materials or accidental spills.

#### Release of Hazardous Materials

***NEPA Effects:*** Painting structures and implementing aesthetic design features at concrete or shotcrete structures would require the use of vehicles and or heavy equipment. The use, and/or onsite maintenance of this equipment could result in inadvertent spills or leaks of hazardous chemicals, such as paints or solvents, as described in Section 31.5.1.1 *Perform Geotechnical Studies*. Because these chemicals would be used in small quantities and inadvertent releases would be localized, and because environmental commitment measures implemented as part of the HMMPs, SPCCPs, and SWPPPs (described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*), would minimize the potential for accidental releases of hazardous materials, and would help contain and remediate hazardous spills should they occur, it is unlikely that the general public or the environment would be adversely affected. Related AMMs would also be implemented to reduce and minimize these effects, as described in Section 31.5.1.1, *Perform Geotechnical Studies*. Therefore, this effect would not be adverse.

***CEQA Conclusion:*** Activities implemented as part of Mitigation Measure AES-1e would have the potential to result in significant environmental impacts due to the inadvertent release of hazardous materials. The impacts would be minimized and reduced to a less-than-significant level with the implementation of general and species-specific AMMs, environmental commitments, and Mitigation Measures NOI-1a and NOI-1b.

### 31.5.2.16 Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities

Under this mitigation measure, the project proponents will locate concrete batch plants and fuel stations away from sensitive visual resources (i.e., state scenic highways) and receptors to minimize the impact on visual quality. In addition, these sites will be restored after construction to minimize the long-term impact on localized visual character.

Activities associated with this mitigation measure, including building concrete batch plants, fuel stations, and associated structures and storage piles in locations other than those that were previously analyzed, storing concrete batch plants and fuel station sites to preconstruction conditions, restoring all disturbed terrain, and installing replacement plantings could cause environmental effects through ground disturbance, noise, altered drainage patterns, and conversion of agricultural land.

## Ground Disturbances

Ground disturbances would result from activities such as construction and restoration. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs. This mitigation measure may also convert agricultural land for other uses, such as locations of concrete batch plants or fuel stations, as a result of relocating facilities away from sensitive visual resources. Further evaluation of these impacts would depend on additional information relating to the location of the lands being converted. Implementation of Mitigation Measures AG-1 and AMMs would reduce these effects. Additionally, project proponents would, where available and feasible, choose lower-quality farmland rather than convert Important Farmland for these purposes.

## Noise

Increased noise would result from the operation of construction equipment, which would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), nesting raptors and covered species (e.g., plant species) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Drainage

Alteration of drainage patterns would result from grading and planting. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measures AES-1f would have the potential to cause adverse environmental effects through ground disturbance, noise, drainage alterations, and conversion of agricultural land. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but they would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these effects, but may not be sufficient to reduce emissions below AQMD thresholds. Drainage effects would be reduced by implementing mitigation measures. AMMs and mitigation measures would be available to address potential adverse effects related to the conversion of agricultural land.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AES-1f would have the potential to cause environmental impacts through ground disturbance, noise, drainage alterations, and conversion of agricultural land. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures,

and environmental commitments. Drainage impacts would be reduced by implementing mitigation measures. There may be increases in air quality impacts and, while mitigation measures would be available to reduce these impacts, they may not be sufficient to reduce emissions below AQMD thresholds. In addition, depending on the feasibility of applying Mitigation Measure AG-1, the availability of lower-quality farmland for conversion, and the areal extent of land required, it is possible that impacts relating to agricultural land conversion, in addition to those on air quality, would be significant and unavoidable.

### 31.5.2.17 Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project Landscaping Plan

Under this mitigation measure, the project proponents will apply additional landscape treatments and use best management practices as part of implementing the project landscaping.

Activities associated with this mitigation measure, such as constructing landscape berms and installing landscape irrigation systems, could cause environmental effects through noise, air quality pollutants and emissions, drainage alterations, and sedimentation.

#### Noise

Grading and landscaping would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas), and covered species (e.g., terrestrial and aquatic) to excessive noise as a result of operating construction equipment. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*. Therefore, this effect is not anticipated to be adverse.

#### Air Quality

Increased GHGs and criteria pollutants would result from grading and landscaping. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant and GHG emissions.

#### Drainage

Alteration of drainage patterns would result from grading and planting, and as a result of improperly installed or malfunctioning irrigation systems. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

#### Sedimentation

Excavation near the shoreline could cause environmental effects to fish related to sedimentation, turbidity, and disturbance of contaminated sediment. Adverse effects on fish from increases in turbidity during in- or near-water construction and maintenance activities would be minimized through adherence to applicable federal, state, and local regulations; project-specific designs; BMPs;

AMMs, and environmental commitments, as described in Section 31.5.2.10. These commitments and plans are intended to avoid, prevent or minimize turbidity (e.g., implementation of site-specific erosion and sediment control plans).

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure AES-1g would cause environmental effects through noise, air quality, drainage, and sedimentation. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects would be reduced by implementing mitigation measures. Sedimentation effects would be reduced by implementing mitigation measures, AMMs, and environmental effects. Overall, impacts of Mitigation Measure AES-1g would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AES-1g would cause environmental impacts through noise, air quality, drainage, and sedimentation. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts from grading and planting, or improperly installed or malfunctioning irrigation systems, would be reduced by implementing mitigation measures. Sedimentation impacts would be reduced by implementing mitigation measures, AMMs, and environmental commitments. Overall, impacts of Mitigation Measure AES-1g would be less than significant.

### 31.5.2.18 Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences

Under this mitigation measure, project proponents will evaluate construction routes and identify portions of access routes where the use of visual barriers would minimize the introduction of new light and glare from construction truck headlights and the impact on nearby residents.

Installing 5-foot-high or greater temporary or semi-permanent structures, such as chain link fencing or concrete barriers, under this mitigation measure could cause environmental effects through ground disturbance and drainage alterations.

#### Ground Disturbances

Ground disturbances would result from installing structures. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

#### Drainage

Alteration of drainage patterns would result from installing temporary or semi-permanent structures. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern

or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure AES-4c would have the potential to cause environmental effects through ground disturbance and drainage alterations. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Drainage effects would be reduced by implementing mitigation measures. Therefore, impacts of this mitigation measure would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AES-4c would have the potential to cause environmental impacts through ground disturbance and drainage alterations. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Drainage impacts would be reduced by implementing mitigation measures. Therefore, impacts of this mitigation measure would be less than significant.

### 31.5.2.19 Mitigation Measure AES-6a: Underground New or Relocated Utility Lines Where Feasible

Under this mitigation measure, project proponents will underground new or relocated utility lines, where feasible, to reduce or improve adverse visual effects associated with the visual intrusion of such features in the landscape. New or relocated utility lines will not be underground where undergrounding would constitute an adverse effect on sensitive habitats or sensitive species or require the removal of healthy native trees that would fall under the definition of a native heritage tree.

***NEPA Effects:*** The activities for this mitigation measure that could cause environmental effects would be the same as those described under Section 31.5.2.12, *Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible.*

In summary, activities required as part of implementing Mitigation Measure AES-6a would have the potential to cause environmental effects through noise, air quality, drainage, and damage to cultural and paleontological resources. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects. Drainage effects would be reduced by implementing AMMs and mitigation measures. Effects on cultural and paleontological resources would be minimized with implementation of mitigation measures. Overall, effects of Mitigation Measure AES-6a would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AES-6a would cause environmental impacts through noise, air quality, drainage, and damage to cultural and paleontological resources. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts from trenching

would be reduced by implementing AMMs and mitigation measures. Effects on cultural resources would be minimized with implementation of Mitigation Measure CUL-1; however, this would not guarantee that all of the scientifically important material would be retrieved because feasible archaeological excavation only typically retrieves a sample of the deposit, and portions of the site with important information may remain after treatment. Therefore, with respect to cultural resources, implementation of this measure has the potential to result in a significant and unavoidable impact.

### 31.5.2.20 Mitigation Measure CUL-6: Conduct a Survey of Inaccessible Properties to Assess Eligibility, Determine if These Properties Will Be Adversely Impacted by the Project, and Develop Treatment to Resolve or Mitigate Adverse Impacts

Under this mitigation measure, the project proponents will ensure that an inventory and evaluation report is completed within all areas where effects on built resources may occur, including areas where a built resources inventory has not been completed.

Activities associated with this mitigation measure, such as implementing stabilization design to ensure fragile built resources are not damaged by construction, moving built resources – either temporarily or permanently, and redesigning relevant facilities to minimize the scale or extent of damage, could cause environmental effects through ground disturbance, noise, air quality pollutants, and traffic disruptions.

#### Ground Disturbances

Ground disturbances would result from implementing stabilization design, moving built resources, or redesigning facilities. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

#### Noise

Stabilizing, moving, or redesigning facilities or built resources would result in temporary noise impacts. Depending on the location, excavation equipment would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., plant species) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

#### Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement* would be available to address criteria pollutant and GHG emissions.

### Traffic

Traffic may disrupted as a result of stabilizing, moving, or redesigning facilities or built resources. As described in Impact TRANS-1 in Chapter 19, *Transportation*, Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would be available to reduce the severity of this effect, if all improvements required to avoid significant impacts are feasible and all necessary agreements are completed.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure CUL-6 would potentially adversely affect the environment through ground disturbances, noise, air quality pollutants, and traffic disruptions. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Increased air quality effects may be adverse, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these effects, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality effects may remain adverse. Effects from traffic disruptions would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be adverse. Overall, effects of Mitigation Measure CUL-6 would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure CUL-6 would potentially significantly affect the environment through ground disturbances, noise, air quality pollutants, and traffic disruptions. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Increased air quality impacts may be significant, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these impacts, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality impacts may remain significant. Impacts related to traffic disruptions would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be significant. Overall, impacts of Mitigation Measure CUL-6 would be less than significant.

## 31.5.2.21 Mitigation Measure TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits

Under this mitigation measure, it may be necessary to improve deficient roadways or make other necessary infrastructure improvements before construction to make them suitable for use during construction. Repairs may occur before or after construction and may include overlays, other surface treatments, or roadway reconstruction. The project proponents will require the contractor(s) to conduct the pre-construction pavement analysis and conduct all improvements in compliance with applicable standards of affected agencies, as stipulated in the mitigation agreements or encroachment permits.

Activities associated with this mitigation measure, such as grading along roadways, installing overlays or other surface treatment, and reconstructing roadways, could cause environmental effects through ground disturbance, noise, air quality pollutants and emissions, and traffic disruptions.

### Ground Disturbances

Ground disturbances would result from activities such as grading and reconstruction. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

### Noise

Increased noise would result from road grading and reconstruction, which would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and natural communities, such as nesting raptors, to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

### Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant and GHG emissions.

### Traffic

Traffic may disrupted as a result of lane and road closures caused by road work. As described in Impact TRANS-1 in Chapter 19, *Transportation*, Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would be available to reduce the severity of this effect, if all improvements required to avoid significant impacts are feasible and all necessary agreements are completed.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure TRANS-2c would potentially adversely affect the environment through ground disturbances, noise, air quality pollutants and emissions, and traffic disruptions. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and sensitive and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Increased air quality effects may be adverse, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these effects, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality effects may remain adverse. Effects from traffic disruptions would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be adverse. Overall, effects of Mitigation Measure TRANS-2c would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure TRANS-2c would potentially significantly affect the environment through ground disturbances, noise, air quality pollutants and emissions, and traffic disruptions. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Increased air quality impacts may be significant, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these impacts, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality impacts may remain significant. Impacts related to traffic disruptions would be reduced by implementing mitigation measures, as well as other project improvements and agreements, and thus would not likely be significant. Overall, impacts of Mitigation Measure TRANS-2c would be less than significant.

### 31.5.2.22 Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Under this mitigation measure, in places where utility lines would be relocated, existing corridors will be utilized to the greatest extent possible, in the following order of priority: (1) existing utility corridors; (2) highway and railroad corridors; (3) recreation trails, with limitations; and (4) new corridors.

Relocating utility lines in recreation trails or new corridors under this mitigation measure could cause environmental effects through ground disturbance, noise, and air quality pollutants and emissions.

#### Ground Disturbances

Ground disturbances would result from relocating utility infrastructure. These ground-disturbing activities, depending on their location, could adversely affect natural communities. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

#### Noise

Relocating utility lines would result in temporary noise impacts. Depending on the location, excavation equipment would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., plant species) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

### Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, AQ-21, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant and GHG emissions.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure UT-6b would potentially adversely affect the environment through ground disturbances, noise, and air quality pollutants and emissions. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Increased air quality effects may be adverse, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these effects, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality effects may remain adverse. Overall, effects of Mitigation Measure UT-6b would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure UT-6b would potentially significantly affect the environment through ground disturbances, noise, and air quality pollutants and emissions. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus would not likely be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Increased air quality impacts may be significant, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these impacts, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality impacts may remain significant. Overall, impacts of Mitigation Measure UT-6b would be less than significant.

## 31.5.2.23 Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Under this mitigation measure, the project proponents will protect, support, or remove underground utilities as necessary to safeguard employees. The project proponents will notify local fire departments if a gas utility is damaged causing a leak or suspected leak, or if damage to a utility results in a threat to public safety.

Activities associated with this mitigation measure, such as removing transmission lines and underground utilities, and installing relocated transmission lines and underground utilities could cause environmental effects through ground disturbance, noise, air quality pollutants and emissions, altered drainage patterns, damage to cultural and paleontological resources, and utility disruption.

## Ground Disturbances

Ground disturbances would result from activities such as removing transmission lines and underground utilities, and installing relocated transmission lines and underground utilities. These ground-disturbing activities, depending on their location, could adversely affect natural communities both in the short- and long-term. As described in Section 31.5.1.1, *Perform Geotechnical Studies*, disturbances of natural communities would be minimized by implementing AMMs.

## Noise

Increased noise would result from removing and relocating transmission lines and underground utilities, which would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered and sensitive species (e.g., endangered plant species and nesting raptors) to excessive noise. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, as well as AQ-24, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant emissions. Mitigation Measure AQ-21 would be available to address GHG emissions and reduce them to net zero. Additionally, AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement*, would further reduce effects.

## Drainage

Alteration of drainage patterns would result from trenching. As described in Section 31.5.1.2, *Transmission Line Pole Placement*, implementation of this mitigation measure would have the potential to substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff. Implementation of mitigation measures and AMMs would reduce the effects of runoff and sedimentation.

## Cultural Resources

Effects on cultural resources could result from trenching for the underground placement of transmission lines and underground utilities. The exact location of these resources cannot be disclosed because such disclosure might lead to damage of the sites. This impact would be adverse because construction damage may impair the integrity of these resources and thus reduce their ability to convey their significance. Mitigation Measure CUL-1 would reduce this impact, but would not guarantee that all of the scientifically important material would be retrieved because feasible archaeological excavation only typically retrieves a sample of the deposit, and portions of the site with important information may remain after treatment.

## Paleontological Resources

Effects on paleontological resources could result from trenching for the underground placement of transmission lines and underground utilities. As described in Section 31.5.2.12, *Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible*, the ground-disturbing activities that occur in geologic units sensitive for paleontological resources have the potential to cause adverse effects by damaging or destroying those resources. However, any transmission lines constructed underground under this mitigation measure would be anticipated to be installed at a relatively shallow depth, and would be unlikely to affect paleontological resources. The shallow excavation and grading in surficial Holocene deposits that would likely take place for the construction of underground transmission lines could be addressed through implementation of Mitigation Measures PALEO-1b and 1d, as described in Section 31.5.2.12.

## Utilities

Relocating transmission lines or underground utilities may result in a temporary disruption of power. Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. Implementation of pre-construction surveys, and then utility avoidance or relocation if necessary, would minimize any potential disruption. An environmental commitment related to Transmission Line Design and Alignment Guidelines will ensure that the location and design of proposed transmission lines will be conducted in accordance with electric and magnetic field (EMF) guidance adopted by the California Public Utilities Commission. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the severity of this effect by requiring relocation or modification of existing utility systems, in a manner that does not affect current operational reliability to existing and projected users; coordination of utility relocation and modification with utility providers and local agencies to integrate potential other construction projects and minimize disturbance to the communities; and verification of utility locations through field surveys and services such as Underground Service Alert. Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure will require the project proponents to confirm utility/infrastructure locations before construction through consultation with utility service providers, preconstruction field surveys, and services such as Underground Service Alert. Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability will require existing corridors to be utilized in places where utility lines would be relocated, to the greatest extent possible, in the following order of priority: (1) existing utility corridors; (2) highway and railroad corridors; (3) recreation trails, with limitations; and (4) new corridors. Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety will require project proponents to protect, support, or remove underground utilities as necessary to safeguard employees while any excavation is open.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure UT-6c would potentially significantly affect the environment through ground disturbances, noise, air quality pollutants and emissions, altered drainage patterns, damage to cultural and paleontological resources, and utility disruption. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental

commitments. Effects from increased air quality pollutants and emissions would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these effects, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality effects may remain adverse. Drainage effects would be reduced by implementing mitigation measures. Effects on cultural and paleontological resources would be minimized with implementation of mitigation measures. Disruption of power and utilities would be minimized with implementation of environmental commitments and mitigation measures. Overall, effects of Mitigation Measure UT-6c would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure UT-6c would potentially significantly affect the environment through ground disturbances, noise, air quality pollutants and emissions, altered drainage patterns, damage to cultural and paleontological resources, and utility disruption. As previously described, ground disturbance impacts would be reduced by implementing AMMs, and thus likely would not be significant. Similarly, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. Drainage impacts would be reduced by implementing mitigation measures. Impacts related to disruption of power and utilities would be minimized with implementation of environmental commitments and mitigation measures. Effects on cultural and paleontological resources would be minimized with implementation of Mitigation Measure CUL-1; however, this would not guarantee that all of the scientifically important material would be retrieved because feasible archaeological excavation only typically retrieves a sample of the deposit, and portions of the site with important information may remain after treatment. Therefore, with respect to cultural resources, implementation of this measure has the potential to result in a significant and unavoidable impact.

### 31.5.2.24 Mitigation Measure AQ-9: Implement Measures to Reduce Re-Entrained Road Dust and Receptor Exposure to PM2.5 and PM10

Under this mitigation measure, DWR would employ a tiered approach to reduce re-trained road dust and receptor exposure to PM2.5 and PM10. As part of this approach, chemical suppressants would be applied to reduce PM10. If necessary, portions of the work sites will be paved to eliminate all PM2.5 and PM10 exceedances.

#### Ground Disturbances

Ground disturbances would result from grading unpaved roads for paving. Grading, depending on the location, could temporarily adversely affect adjacent natural communities. As described in Section 31.5.1, *Environmental and Other Commitments*, disturbances of natural communities would be minimized by implementing AMMs.

#### Noise

Grading roadways prior to paving, depending on the location, would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., plant species) to excessive noise. However, noise-related impacts on sensitive receptors, noise-

sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1, *Environmental and Other Commitments*.

## Air Quality

A temporary increase in GHGs and criteria pollutants would result from the operation of grading and paving equipment. In addition, asphalt paving could create objectionable odors. Potential odors generated during asphalt paving would be addressed through mandatory compliance with air district rules and regulations. Mitigation Measures AQ-2 through AQ-4, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Placement,* would be available to address criteria pollutant and GHG emissions.

## Water Quality

The chemical suppressant that would be used to reduce re-entrained road dust, PennzSuppress, is considered non-hazardous to groundwater (PennzSuppress Material Safety Data Sheet 2012). However, this chemical suppressant does contain "heavy resins" and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Therefore, to avoid any adverse effects on the environment in general, and surface water quality in particular, application of this chemical suppressant would be done in accordance with Section 311 (Oil and Hazardous Substances Liability) of the Clean Water Act. In addition, environmental commitment measures implemented as part of the HMMPs, SPCCPs, and SWPPPs (described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*), would minimize the potential for accidental releases of the chemical suppressant, and would help contain and remediate spills.

## Drainage

Grading and paving. Roads would alter existing drainage patterns and could result in local (onsite) ponding, erosion and siltation, and changes in runoff flow rates and velocities. AMM3 and AMM4, as well as environmental commitment measures implemented by the project proponents as part of erosion and sediment control plans and SWPPPs would avoid or minimize erosion and siltation effects. In addition, the implementation of Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation, would require that project proponents implement measures to prevent an increase in runoff volume and rate from land-side construction areas and to prevent an increase in sedimentation in the runoff from the construction area.

## Traffic

Traffic may be disrupted if lane and road closures are required due to road grading and paving activities. As described in Impact TRANS-1 in Chapter 19, *Transportation*, Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would be available to reduce the severity of this effect, if all improvements required to avoid significant impacts are feasible and all necessary agreements are completed.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure AQ-9 would potentially adversely affect the environment through ground disturbances, noise, and air quality pollutants and emissions, water quality pollutants, alteration of drainage patterns, and traffic disruption. As previously described, ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-

sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Potential effects on traffic would be reduced with implementation of Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c. Potential drainage effects would be reduced by implementing Mitigation Measure SW-4, AMMs, and environmental commitments, as described previously. Increased air quality effects may be adverse, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce these effects, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality effects may remain adverse. It is unlikely that there would be adverse effects on water quality (groundwater and surface water) with application of chemical suppressants to reduce PM10 because the application/use would be done according to manufacturer's instructions, and would comply with Section 311 of the Clean Water Act and Oil Pollution Act. Accordingly, overall, effects of Mitigation Measure AQ-9 would not be adverse.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AQ-9 would potentially have a significant impact on the environment through ground disturbances, noise, and air quality pollutants and emissions, water quality pollutants, alteration of drainage patterns, and traffic disruption. Ground disturbance effects would be reduced by implementing AMMs, and thus would not likely be adverse. Similarly, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Potential significant impacts on traffic would be minimized with implementation of Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c. Potential drainage effects would be reduced by implementing Mitigation Measure SW-4, AMMs, and environmental commitments, as described previously. Increased air quality effects may be significant, but would be further evaluated and identified in subsequent project-level environmental analysis. Mitigation measures would be available to reduce air quality effects, but may not be sufficient to reduce emissions below AQMD thresholds. Therefore, air quality effects may remain adverse. It is unlikely that there would be adverse effects on water quality (groundwater and surface water) with application of chemical suppressants to reduce PM10 because the application/use would be done according to manufacturer's instructions, and would comply with Section 311 of the Clean Water Act and Oil Pollution Act. Accordingly, overall, effects of Mitigation Measure AQ-9 would not be significant.

#### 31.5.2.25 Mitigation Measure AQ-21: Develop and Implement a GHG Mitigation Program to Reduce Construction Related GHG Emissions to Net Zero (0)

Under this mitigation measure, project proponents will develop a GHG Mitigation Program that will consist of feasible options that, taken together, will reduce construction-related GHG emissions to net zero (0).

Expanding the number of subsidence reversal and/or carbon sequestration projects currently being undertaken by DWR on Sherman and Twitchell Islands (Strategy 13) under this mitigation measure could cause environmental effects through land modifications, noise, and air quality pollutants.

Effects related to these activities include:

- Land modifications as a result of experimental designs for sequestration and wildlife benefits.
- Increased noise and criteria pollutants (air) as a result of operation of construction equipment.

## Noise

Expanding the number of subsidence reversal and/or carbon sequestration projects currently being undertaken by DWR on Sherman and Twitchell Islands would have the potential to expose sensitive receptors (e.g., residences, outdoor parks, schools, and agriculture areas), noise-sensitive land uses (e.g., recreational areas, places of worship, libraries, and hospitals), and covered species (e.g., terrestrial and aquatic species) to excessive noise as a result of equipment used for sequestration and subsidence reversal. However, noise-related impacts on sensitive receptors, noise-sensitive land uses, and covered species would be minimized and reduced through implementation of general and species-specific AMMs, mitigation measures, and environmental commitments, as described in Section 31.5.1.1, *Perform Geotechnical Studies*.

## Air Quality

Increased GHGs and criteria pollutants would result from the operation of excavation equipment, both at the excavation site and the application site, and haul trucks. Mitigation Measures AQ-2 through AQ-4, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2, *Transmission Line Pole Replacement*, would be available to address criteria pollutant and GHG emissions.

## Agricultural Land

Expansion of subsidence reversal and/or carbon sequestration projects on Sherman and Twitchell Islands may require conversion of agricultural land to other land uses, such as production of tules. Implementation of Mitigation Measure AG-1 and AMMs would reduce the severity of this effect. Further, project proponents would, where available and feasible, choose lower-quality farmland or farmland with lower habitat values, rather than convert Important Farmland or farmland of higher habitat value for subsidence reversal and/or carbon sequestration.

***NEPA Effects:*** In summary, activities required as part of implementing Mitigation Measure AQ-21 may cause adverse environmental effects through noise, air quality pollutants and emissions, and conversion of agricultural land. As previously described, noise effects on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Similarly, mitigation measures and AMMs would be available to address adverse effects related to the conversion of agricultural land. There may be increases in air quality effects but mitigation measures and environmental commitments would be available to address these effects.

***CEQA Conclusion:*** In summary, activities required as part of implementing Mitigation Measure AQ-21 would cause environmental impacts through noise, air quality pollutants and emissions, and land modifications. As previously described, noise impacts on sensitive receptors, noise-sensitive land uses, and covered species would be reduced by implementing general and species-specific AMMs, mitigation measures, and environmental commitments. Air quality impacts resulting from activities associated with implementation of this mitigation measure would be reduced by applying mitigation measures and environmental commitments. However, depending on the feasibility of applying Mitigation Measure AG-1, the availability of lower-quality farmland for conversion, and the areal extent of land required, it is possible that impacts relating to agricultural land conversion would be significant and unavoidable.

## 31.5.3 Mitigation Measures That Require Payment of Fees

Although not specifically required by CEQA, this section provides a list of mitigation measures that require the payment of fees. The State CEQA Guidelines clearly recognize the use of fee payment as mitigation for a project's otherwise "cumulatively considerable" incremental contribution to significant cumulative impacts. If a project is required to fund its fair share of a mitigation measure designed to alleviate the cumulative impact, a project's contribution to that impact is considered less than cumulatively considerable (State CEQA Guidelines Section 15130, subd. (a)(3); *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 140). Where an agency has an existing program by which mitigation measures such as traffic improvements can be funded on a fair-share basis through the collection of fees, an EIR's discussion of traffic mitigation is adequate if it explains how the fee program will address the impact (*Save Our Peninsula Committee*, 87 Cal.App.4th at p. 141).

In general, therefore, an EIR need not specifically analyze the impacts of the proposed improvements identified in a mitigation measure where the mitigation measure requires only that the project applicant pay a traffic impact fee in an amount that constitutes the project's fair share contribution to the construction of improvements necessitated in part by the project impacts. In such instances, the identified improvements are not a "part" of the project (in "whole" or otherwise), but represent a separate, independent project that will someday benefit the project. CEQA does not require a lead agency, in preparing an EIR for a discrete development project, "to consider a mitigation measure which itself may constitute a project at least as complex, ambitious, and costly as project itself" (*Concerned Citizens of South Central Los Angeles v. Los Angeles Unified School District* [2nd Dist. 1994] 24 Cal.App.4th 826, 842). Where a project is only conditioned on the payment of the traffic impact fee, and not on the construction of the improvement itself, an EIR is not required to analyze the impacts of the proposed improvements.

The mitigation measures that require the payment of fees are listed below.

- Fund Efforts to Carry out the Recreation Recommendations Adopted in the Delta Plan
- Fund the California Department of Boating and Waterways' Programs for Aquatic Weed Control
- Enhance Recreation Access in the Vicinity of the Proposed Intakes (includes funding elements of the American Discovery Trail)
- Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to Preserve Agricultural Productivity and Mitigate for Loss of Important Farmland and Land Subject to Williamson Act Contracts or in Farmland Security Zone (Funding for subsidies needed for viable Optional Agricultural Land Stewardship Approach).
- Mitigation Measure TRANS-1a: Implement site-specific construction traffic management plan
- Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation Agreements to Enhance Capacity of Congested Roadway Segments.
- Mitigation Measure AQ-21: Develop and Implement a GHG Mitigation Program to Reduce Construction Related GHG Emissions to Net Zero (0) (includes funding for Renewable Energy Purchase Agreement, Purchase Carbon Offsets, Development of Biomass Waste Digestion and Conversion Facilities, and Agriculture Waste Conversion Development).

## 31.5.4 Combined Alternative 4A Impacts and Mitigation Measure Effects

Table 31-2, *Summary of Combined Alternative 4A and Mitigation Measure Effects and CEQA/NEPA Conclusions,* provides a summary of the CEQA and NEPA conclusions when the direct impacts occurring under Alternative 4A are considering along with the impacts expected to occur as a result of implementing the proposed mitigation measures. The purpose of the information contained in Table 31-2 is to determine if an impact on a particular resource that may occur as a result of a implementing a mitigation measure combined with the impacts identified in the FEIR/EIS would not change the significance findings reported in FEIR/EIS Chapters 5 through 27.

The impact statements included in Table 31-2 are those that reflect the greatest impacts on a particular resource as disclosed in FEIR/EIS Chapter 5 through 27. These impacts are also identified in the impact summary figures included at the beginning of each FEIR/EIS resource chapter and in the FEIR/EIS Executive Summary. Because of the multitude of impact statements in the FEIR/EIS, this approach focused on those impacts that, when combined with the additional impacts that could occur when mitigation is implemented, would result in the greatest combined impact on any particular resource. As shown in Table 31-2, none of the combined impacts (resource impact + mitigation measure impact) would result in a new significant impact on the resources evaluated in the FEIR/EIS.

The mitigation measures included in Table 31-2 reflect those contained in the Mitigation Monitoring and Reporting Program (MMRP) for the California WaterFix. The MMRP provides additional detail (i.e. responsible parties, location, timing, monitoring, reporting requirements, etc.) for each mitigation measure identified in FEIR/EIS Chapters 5 through 27. The mitigation measures included in the MMRP were reviewed to determine which ones would most likely result in a physical change in the environment. Some measures, such as those that require avoidance of an effect by timing of construction, using specific construction techniques, conducting pre-construction surveys, developing plans or studies, or those limited to areas that had been disturbed as a result of constructing the water conveyance facilities were not include in the combined impact assessment as these actions would not further contribute to an impact identified in FEIR/EIS Chapters 5 through 27. These mitigation measures are passive actions in that they do not require the disturbance of a resource to be implemented or would result in very small impacts that cannot be quantified.

**Table 31-2. Summary of Combined Alternative 4A and Mitigation Measures Effects and CEQA/NEPA Conclusions**

| Effects | CEQA/NEPA Conclusion for Alternatives | Mitigation Measure Effects | CEQA/NEPA Conclusion for Mitigation Measures | Combined Effects of Alternatives and Mitigation Measures | CEQA/NEPA Conclusion |
|---|---|---|---|---|---|
| **Water Supply** | | | | | |
| Changes in water supply were modeled for Alternative 4A. Results were used to help determine impacts on surface water, groundwater, water quality, aquatics, and other water-dependent environmental resources. | No determination | None | No determination | No applicable mitigation | No determination |
| **Surface Water** | | | | | |
| Changes in Sacramento and San Joaquin River flood flows as a result of system operations | LTS/NA | None | LTS/NA | Small change in predicted Sacramento and San Joaquin River flood flows. | LTS/NA |
| Localized increase in surface water runoff as a result of increasing impervious surfaces | LTS/NA with application of MM SW-4: Implement measures to reduce runoff and sedimentation | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Increase localized runoff as a result of a small increase in impervious surfaces associated with pumping plant and interconnection facilities<br>*MM REC-2: Provide alternative bank fishing sites*—May slightly increase runoff by increase impervious surfaces need to access to fishing sites.<br>*MM TRANS-1c: Make Good Fair Efforts to Enter into Mitigation Agreements to Enhance Capacity of Congested Roadway Segments*—May increase runoff by increasing number or width of travel lanes or turning lanes. | LTS/NA with application of MM SW-4: Implement measures to reduce runoff and sedimentation | Generation of additional runoff would be small because additional impervious surfaces would be distributed throughout the study area and would small relative to undisturbed areas. | LTS/NA |

| **CEQA Finding** | | **NEPA Finding** | |
|---|---|---|---|
| NI = no impact. | S = significant. | B = beneficial. | NA = not adverse. |
| LTS = less than significant. | SU = significant and unavoidable. | NE = no effect. | A = adverse. |

| Effects | CEQA/NEPA Conclusion for Alternatives | Mitigation Measure Effects | CEQA/NEPA Conclusion for Mitigation Measures | Combined Effects of Alternatives and Mitigation Measures | CEQA/NEPA Conclusion |
|---|---|---|---|---|---|
| **Groundwater** | | | | | |
| Construction activities associated with conveyance facilities are not anticipated to result in adverse effects on surrounding groundwater levels and well yields as a result of installation of slurry cutoff walls at construction sites. | LTS/NA | No mitigation measures would affect groundwater levels, as none would result in substantial subsurface or dewatering activities | LTS/NA | No combined effects applicable | LTS/NA |
| Construction activities associated with conveyance facilities are not anticipated to result in adverse effects on surrounding groundwater quality as a result of installation of slurry cutoff walls at construction sites. | LTS/NA | No mitigation measures would affect groundwater levels as none would result in substantial subsurface or dewatering activities. | LTS/NA | No combined effects applicable | LTS/NA |
| **Water Quality** | | | | | |
| Change in the long-term average concentrations of bromide at Barker Slough | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to water quality parameters<br>*AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and AQUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to be | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures not expected to substantially change bromide concentrations at Barker Slough. | LTS/NA |

| **CEQA Finding** | | **NEPA Finding** | |
|---|---|---|---|
| NI = no impact. | S = significant. | B = beneficial. | NA = not adverse. |
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|---|---|---|---|---|---|
| | | of the scale to substantially change concentrations of bromide at Barker Slough | | | |
| Change in frequency chloride water quality objective exceeded at CCCP#1 | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling *Attachment 31B-2, Operational Analysis Results*) show small or no changes to water quality parameters<br>*AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and AQUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to be of the scale to substantially change the frequency the chloride water quality objective is exceeded. | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures not expected to change the frequency the chloride water quality objective is exceeded. | LTS/NA |
| Change in frequency EC would be exceeded at Emmaton | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling *Attachment 31B-2, Operational Analysis Results*) show small or no changes to water quality parameters<br>*AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and AQUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to be of the scale to substantially change the frequency EC would be exceeded at Emmaton. | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures is not expected to change the frequency EC would be exceeded at Emmaton. | LTS/NA |

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| Maximum increase in fish tissue concentrations of mercury | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling *Attachment 31B-2, Operational Analysis Results*) show small or no changes to water quality parameters<br>*AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and AQUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to be of the scale to substantially change fish tissue concentrations of mercury. | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures is not expected to change the fish tissue concentrations of mercury. | LTS/NA |
| Maximum increase in long-term average DOC at interior Delta locations | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling (*Attachment 31B-2, Operational Analysis Results*)show small or no changes to water quality parameters<br>*MM AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and MM AQUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to be of the scale to substantially change long-term average DOC at interior Delta locations. | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures is not expected to change the long-term average DOC at interior Delta locations. | LTS/NA |

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| Exceedance of selenium concentrations in sturgeon | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to water quality parameters<br>*MM AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and MM AQUAUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to contribute to the exceedance of selenium concentration in sturgeon. | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures is not expected to change the frequency of exceedance of selenium concentrations in sturgeon. | LTS/NA |
| Increased production of mycrocystis in Delta waterways. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of water quality modeling show small or no changes to water quality parameters<br>*MM AQUA-22d Ensure January through June Delta outflows do not result in changes in Longfin smelt abundance and MM AQUA-78d: Slightly adjust the timing and magnitude of Shasta, Folsom, and /or Oroville releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon* are not expected to contribute to the increased production of mycrocystis in Delta waterways. | LTS/NA | Combined effect of operation of CM-1 with the mitigation measures is not expected to contribute to the increased production of mycrocystis in Delta waterways. | |

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| **Geology/Seismicity** | | | | | |
| Ground surface settlement could be induced during construction of water conveyance facilities. The characteristics of each geologic unit in which construction occurs would affect the potential for settlement and resulting surface impacts. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Construction of the Victoria Island or Clifton Court interconnections is not expected to result in ground settlement with the application of standard construction and design measures. | LTS/NA | Potential for ground settlement associated with construction of water conveyance and interconnection facilities would be avoided through application of standard construction and design measures. | LTS/NA |
| **Soils** | | | | | |
| Loss of 7,590 acres of topsoil as a result of excavation, over covering, and inundation. | S/U with application of *MM SOILS-2a: Minimize Extent of Excavation and Soil Disturbance and MM SOILS-2b: Salvage, Stockpile, and Replace Topsoil and Prepare a Topsoil Storage and Handling Plan.* | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Loss of 78 acres of topsoil as a result of excavation and over covering.<br>*MM GW-7: Provide an Alternate Source of Water*—Ground disturbing activities resulting from constructing new groundwater wells could result in excavation and over covering of soils.<br>*MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits*—If use of physically deficient roadways cannot be avoided or limited, it may be necessary to improve the deficient roadways or make other necessary infrastructure improvements, if any, before construction to make them suitable for use during construction. Construction of roadways could result in excavation and over covering of soils.<br>*MM NOI-1a: Employ noise-reducing construction practices during construction*—Placing sound | SU/A | Loss of a minimum of 7,668 acres of topsoil as a result of excavation, over covering, and inundation. Total loss of topsoil would increase with the application of MM GW-7. The additional acreage of topsoil lost would be driven by the extent and location of ground disturbing activities occurring under MM GW-7, Trans-2c and NOI-1a | SU/A |

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| | | barriers (earth berms or constructed barriers) between noise sources and noise-sensitive land uses could result in excavation and over covering of soils.<br>MM NOI-3: *Design and Construct Pumping Plant Facilities Such that Operational Noise Does Not Exceed 50 dBA (One-Hour Leq) during Daytime Hours (7:00 A.M. to 10:00 P.M.) or 45 dBA (One-Hour Leq) during Nighttime Hours (10:00 P.M. to 7:00 A.M.) or the Applicable Local Noise Standard (Whichever Is Less) at the property line of Nearby Noise Sensitive Land Uses*—placing sound barriers (earth berms or constructed barriers) around noise sources could result in excavation and over covering of soils. | | | |
| **Fish and Aquatic Resources** | | | | | |
| Operation of the conveyance facilities would, overall, result in up to a 23% relative decrease in entrainment of adult delta smelt | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected change entrainment of adult delta smelt | LTS/NA | The combined effect of operation of the water conveyance facilities with operation of MM WQ-7 not expected to further affect entrainment of adult delta smelt because combined effect applicable | LTS/NA |

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| Operation of the conveyance facilities would, overall, result in up to a 20% relative decrease in entrainment of larval/juvenile delta smelt | LTS/SU | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected change entrainment of larval/juvenile delta smelt | LTS/NA | No combined effect applicable | LTS/NA / |
| Operation of the conveyance facilities would, overall, result in up to a 3% increase in rearing habitat for delta smelt based on the abiotic habitat index | LTS/SU | *M WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected change entrainment of rearing habitat for delta smelt | LTS/NA | No combined effect applicable | LTS/NA |
| Operation of the conveyance facilities could cause a 6% decrease to a 5% increase in average longfin smelt abundance | LTS/NA with application of MM AQUA-22d | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected change abundance of longfin smelt. | LTS/NA | No combined effect applicable | LTS/NA with application of MM AQUA-22d |

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| Operation of the conveyance facilities could have an adverse effect on juvenile winter-run Chinook salmon caused by impingement, predation, and reduced flows, though this would be minimized through bypass flow criteria and real-time operations. Raw change in survival rate across all water year types would be -1.7 to -2.1, and relative survival rate across all water year types would be -5 to -6. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected to have an effect on juvenile winter-run Chinook salmon | LTS/NA | No combined effect applicable | LTS/NA |
| Operation of the conveyance facilities could have an adverse effect on juvenile spring-run Chinook salmon caused by impingement, predation, and reduced flows, though this would be minimized through bypass flow criteria and real-time operations. Raw change in survival rate across all water year types would be -0.7 to -2.5, and relative survival rate across all water year types would be -2.2 to -8. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected to have an effect on juvenile spring-run Chinook salmon. | LTS/NA | No combined effect applicable | LTS/NA |

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| Operation of the conveyance facilities could have an adverse effect on juvenile Sacramento river fall-run Chinook salmon caused by reduced flows. Raw change in survival rate across all water year types would be -0.1 to -1.5, and relative survival rate across all water year types would be -0.4 to -6. | Less than significant/not adverse with application of MM AQUA-78d | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Results of operational modeling (*Attachment 31B-2, Operational Analysis Results*) show small or no changes to the full suite of indicator parameters for effects on fish and aquatic resources.<br>No other mitigation measures are expected to have an effect on juvenile Sacramento River fall-run Chinook salmon. | LTS/NA | No combined effect applicable | LTS/NA |
| **Terrestrial Biological Resources** | | | | | |
| Construction and land grading activities for water conveyance facilities would permanently eliminate an estimated 1 acre and temporarily remove 10 acres of tidal freshwater emergent wetland natural community. These modifications represent less than 1% of the 8,856 acres of the community that is mapped in the study area and will be offset by avoidance and minimization measures and restoration actions associated with Environmental Commitments, including creation of 295 acres of tidal wetland as part of Environmental Commitment 4 | LTS/NA | Not applicable because no mitigation measures would affect tidal freshwater emergent wetland natural community. | Not applicable | No combined effect applicable | Not applicable |

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| Construction, land grading, and habitat restoration activities that would accompany the implementation of water conveyance facilities and Environmental Commitment 4, would permanently eliminate an estimated 48 acres and temporarily remove 24 acres of valley/foothill riparian natural community. These modifications represent approximately 0.5% of the 17,966 acres of the community that is mapped in the study area and would be offset by restoration of 251 acres and protection (including significant enhancement) of 103 acres of valley/foothill riparian natural community as part of Environmental Commitment 7 and Environmental Commitment 3 | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*— Construction of the Clifton Court Forebay interconnection would result in loss of 0.25 acre of valley/foothill riparian natural community. Implementation of avoidance and minimization measures identified in Appendix 3B and MMs BIO-55, BIO-75, BIO-117, BIO-162, BIO-170, and BIO-176 and implementation of the protection and management of cultivated lands under Environmental Commitments 3 and 11 would be available to avoid, minimize, and compensate for these effects, such that the impacts would be reduced to a less than significant level.<br>*MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, MM UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability, and TANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits* could all result in loss of valley/foothill riparian natural community based on the location of each measure. Potential impacts are not considered substantial because the area affected would be small compared to CM-1. | LTS/NA | The water conveyance facilities in combination with the mitigation measures would result in the loss of at least 48.25 acres of valley/foothill riparian natural community. This loss would be offset by the EC 7 and EC 3 | LTS/NA |

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| Construction and land grading activities that would accompany the implementation of water conveyance facilities and tidal restoration would permanently eliminate an estimated 3 acres and temporarily remove 4 acres of nontidal freshwater perennial emergent wetland natural community. These modifications represent approximately 0.5% of the 1,509 acres of the community that is mapped in the study area and would be offset by the combination of creating 832 acres and protecting 119 acres of nontidal perennial marsh as part of Environmental Commitment 3 and Environmental Commitment 10 | LTS | Not applicable because no mitigation measures would affect nontidal freshwater perennial emergent wetland natural community. | Not applicable | No combined effect applicable | Not applicable |

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| Construction and land grading activities that would accompany the implementation of water conveyance facilities and tidal restoration would permanently eliminate an estimated 44 acres and temporarily remove 3 acres of vernal pool complex natural community. This loss would represent approximately 0.4% of the 12,133 acres of the community that is mapped in the study area and would be offset by protection of 188 acres (Environmental Commitment 3) and restoration of an estimated 48 acres (Environmental Commitment 9) of vernal pool/alkali seasonal wetland complex. | Less than significant/ not adverse | *MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, MM UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability, and TANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits* could all result in loss of additional vernal pool complex natural community. Potential impacts are not considered significant because the area affected would be small compared to CM-1 and because EC3 and EC4 would offset any loss. | LTS/NA | Loss of 44 acres vernal pool complex natural community plus potential loss of additional acreage as a result of relocating transmission lines and utility infrastructure, undergrounding new or relocated utility lines, and construction of roadways. Additional damage or disturbance would be determined by extent of utility and transmission line relocation and roadway construction.<br>The water conveyance facilities in combination with the mitigation measures would result in the loss of at least 44 acres of vernal pool complex natural community. This loss would be offset by the EC 3 and EC 9. | LTS/NA |
| Construction, maintenance, and operation of water conveyance facilities would occur within or require the unavoidable fill of waters of the United States. The estimated permanent fill of jurisdictional waters associated with this alternative is 698 acres. | LTS/NA with application of MM BIO-176 | Not applicable because no mitigation measures would result in fill of waters of the United States | Not applicable | No combined effect applicable | Not applicable |

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| **Land Use** | | | | | |
| Construction and operation of physical facilities for water conveyance would create temporary or permanent conflicts with existing land uses (including displacement of an estimated 76 existing structures and residences) because of the construction of permanent features of the facility and potential land use incompatibilities. | NI/A | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*, *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM REC-2 Provide alternative bank fishing sites* would potential result in uses that are incompatible with existing land use designations. The measures are of small enough scale that they would likely not result in the displacement would not result in the displacement of structures. | NI/A | Construction of the water conveyance facilities would result in the largest impact on structures and because of the large scale of the project would result in the greatest potential for land use incompatibilities. Mitigation measures may also result in some land use incompatibilities but at a much small scale than the water conveyance facilities. | NI/A |
| **Agricultural Resources** | | | | | |
| Permanently convert 3,909 acres of Important Farmland | SU/A with application of *MM AG-1* | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*— Permanent conversion of approximately 10 acres of Important Farmland.<br>*MM BIO-176: Compensatory Mitigation of Fill of Waters of the U.S. MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, and MMSW-4: Implement Measures to Reduce Runoff and Sedimentation - | SU/A | Permanently convert a minimum of 3,919 acres of Important Farmland with addition of MM WQ-7. The total of Important Farmland could increase based on the location and extent of the other mitigation measures. | SU/A |

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| | | Depending on location, could result in conversion of Important Farmland to wetlands.<br>*MM AQ-21: Develop and Implement a GHG Mitigation Program to Reduce Construction Related GHG Emissions to Net Zero*—May result in conversion of Important Farmlands as a result carbon sequestration efforts, including planting of tules on lands currently under agricultural production | | | |
| **Recreation** | | | | | |
| Permanent and long-term impacts on well-established recreational opportunities and experiences at eight recreation sites or areas in the study area including Clifton Court Forebay, Cosumnes River Preserve, Stone Lakes NWR, Clarksburg Boat Launch, Wimpy's Marina, Delta Meadows, Bullfrog Landing Marina, and Lazy M Marina) | SU/A | None of the proposed mitigation measures would have an impact on recreation occurring within the plan area. | Not applicable | No combined effects would occur. | SU/A |
| **Socioeconomics** | | | | | |
| Construction of water conveyance facilities would result in an increase in construction-related employment and labor income and a decrease in agricultural-related employment and labor income. Total construction employment (direct, indirect, and induced) is anticipated to | LTS/NA with application of MM AG-1 | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*,<br>*MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines* | LTS/NA | Regional employment and income would benefit during construction of the water conveyance facilities and mitigation measures. This benefit would be partially offset by losses in agricultural-related employment as agricultural | LTS/NA |

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| peak in year 12, at 8,673 full time equivalent jobs. Total agricultural employment (direct, indirect, and induced) associated with agricultural employment would fall by 57 full-time-equivalent jobs. | | *and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM REC-2 Provide alternative bank fishing sites* would all benefit short-term construction related employment. MM WQ-7e would also result in a very small reduction in agricultural related employment during the construction phase of the intertie. | | lands would be converted to other uses. | |
| **Aesthetics** | | | | | |
| Construction and presence of the intake structures and CCF pumping plants, large-scale borrow/spoil and RTM area landscape effects, shaft site pads and access hatches, and transmission lines would result in significant impacts on scenic resources because construction and operation would result in a reduction in the visual quality in some locations and introduce dominant visual elements that would result in noticeable changes. These impacts include presence of the facilities, views from state scenic highways, and introduction of a new source of light or glare. The overall number of very noticeable to moderately noticeable effects is 12. | SU/A MMs AES-4a through AES-4d | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*, *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM REC-2 Provide alternative bank fishing sites* would each involve ground disturbing activities and/or construction of features that may affect the visual character of a site or area. Within the context of the surrounding settings the proposed facilities would not have a substantial, demonstrable negative effect on the overall vividness or intactness of views or the unity of elements within those views. | LTS/NA | Impacts on scenic resources as a result of construction and presence of the water conveyance facilities in addition to impacts caused by construction of the mitigation measures would result in an adverse effect on aesthetics. The contribution to this overall impact by the mitigation measures would be small compared to the contribution made by the water conveyance facilities. | SU/A |

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| Maintenance of the conveyance facilities would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays; vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line rights-of-way. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. | LTS/NA | Maintenance actions associated with the mitigation measures is not expected to have any impact of aesthetics as no new facilities would be constructed or landscapes otherwise modified. | LTS/NA | No combined effect | Not applicable as there would be no additive impact. |
| **Cultural Resources** | | | | | |
| Construction of the water conveyance facilities may disturb and damage archaeological sites that may or may not be identified during inventory efforts. Ten sites have been identified that may be affected by constructing the water conveyance facilities. | SU/A with application of MMs CUL-1–3 | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*, *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM REC-2 Provide alternative bank fishing sites* would each involve ground disturbing activities. | SU/A with application of MMs CUL-1–3 | Damage or disturbance of at least 10 archaeological sites combined with potential damage or disturbance to additional sites caused by construction of the mitigation measures. | SU/A |

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| | | These activities could disturb and damage archeological sites. | | | |
| Constructing the water conveyance facilities may disturb and damage historic architectural and built-environment resources that are either identified and evaluated or unidentified and unevaluated. Ten sites are known. | SU/A with application of MM CUL-6 | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*, *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible* would each involve ground disturbing activities. These activities could result in direct and indirect effects on NRHP and CRHR eligible built environment resources. | SU/A with application of MM CUL-6 | Damage or disturbance of at least 10 architectural and built-environment resources combined with damage or disturbance caused by construction of the interconnections | SU/A |
| **Transportation** | | | | | |
| Construction would cause LOS thresholds to be exceeded for at least 1 hour during the 6:00 AM to 7:00 PM analysis period on 38 roadway segments. | SU/A with application of MMs TRANS-1a through TRANS-1c | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Implementation of the Victoria Island or Clifton Court Forebay Interconnection facilities would increase average daily traffic volumes on SR 4 and other local and regional roadways by only a small percentage, SR 4 already experiences heavy truck travel, and project-related construction traffic would not substantially disrupt daily traffic flow or interfere with emergency access routes or response times.<br>Implementing *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as* | LTS/NA | Most of the increase in roadway trips would be attributable to the construction of the water conveyance facilities. The additional contribution to daily traffic volumes during the time the mitigation measures are being constructed would be small and would not substantially contribute to a change in | SU/A |

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| | | *Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible,* would increase traffic on local roadways. However, this increase in construction-related trips is expected to be small because of the size and dispersed characteristics of the measures and the expected relatively short duration of construction when compared to the water conveyance facilities. | | LOS on any roadway segment | |
| Traffic volumes generated during construction would deteriorate existing pavement conditions to less than the acceptable PCI or similar applicable threshold on 46 roadway segments and on various local and state roads, as well as on a few interstates. | SU/A with application of MMs TRANS-2a through TRANS-2c | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Implementation of the Victoria Island or Clifton Court Forebay Interconnection facilities would increase average daily traffic volumes on SR 4 and other local and regional roadways by only a small percentage. The additional traffic is not expected to substantially contribute to the deterioration of roadway surfaces because the amount of construction-related traffic would be small compared to current traffic levels.<br>Implementing *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees* | LTS/NA | Most of the increase in roadway trips and resulting damage to roadway surfaces would be attributable to the construction of the water conveyance facilities. The additional contribution to daily traffic volumes during the time the mitigation measures are being constructed would be small and are not expected to result in a substantial deterioration of roadway surfaces. | SU/A |

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| | | *and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible,* would increase traffic on local roadways. However, the additional traffic is not expected to substantially contribute to the deterioration of roadway surfaces because the amount of construction-related traffic would be small compared to current traffic levels. | | | |
| Marine traffic could be disrupted by increased barge traffic. Approximately 11,800 barge trips are projected to carry tunnel segments from existing precast yards to project sites via the Sacramento River and other waterways, averaging approximately 4 roundtrips per day for approximately 5.5 years. | LTS/NA with application of route design and MM TRANS-1a | *MM REC-2 Provide alternative bank fishing sites* would include modifying or constructing new bank fishing sites at Clarksburg Fishing Access site (west bank of the Sacramento River); Cliffhouse Fishing Access site (east bank of the Sacramento River); Georgiana Slough Fishing Access site (east of the Sacramento River); and Clifton Court Forebay. Although these sites would enhance access to the respective water bodies, they are not expected restrict marine traffic because constructed elements would be located on or immediately adjacent to the river banks or shoreline. | LTS/NA | Marine traffic is not expected to be significantly disrupted during construction of the water conveyance facilities. Implementing MM REC-2 is also not expected to affect marine traffic because improvements would occur at or near the riverbank. The combined effect of constructing the water conveyance facilities with the mitigation measure would not be significant. | LTS/NA |

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| **Public Services and Utilities** | | | | | |
| Water conveyance alignment and associated physical structures could interfere with 12 overhead power/electrical transmission lines, six natural gas pipelines, 11 inactive oil or gas wells, the Mokelumne Aqueduct, and 43 miles of agricultural delivery canals and drainage ditches. Additionally, active gas wells may need to be plugged and abandoned: facilities near proposed forebays, RTM, and borrow or spoils areas may need to be relocated; and buried and overhead electric transmission lines could be damaged. | SU/A with application of MMs UT-6a, UT-6b, and UT-6c (LTS/NA with successful coordination with service providers) | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible,* may disrupt public services during each mitigation measures construction phase. | SU/A with application of MMs UT-6a, UT-6b, and UT-6c (LTS/NA with successful coordination with service providers) | Construction of water conveyance facilities and mitigation could disrupt services provided by regional or local utility providers. Because the mitigation measures are small in scale when compared to the water conveyance facilities, the risk that constructing the measures would result in a service disruption is expected to be much lower. | SU/A with application of MMs UT-6a, UT-6b, and UT-6c (LTS/NA with successful coordination with service providers) |
| **Energy** | | | | | |
| Total construction energy use (2,132 GWh and 104 million gallons of diesel and gasoline) and the potential to result in a wasteful, inefficient or unnecessary consumption of construction energy. Construction BMPs would ensure that only high-efficiency equipment is used during construction | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational* | LTS/NA | All CWF mitigation measures that include construction would require the use of fossil fuels and other types of energy during their construction. Because the scales of construction required to implement these measures is much smaller than the CM-1 water conveyance facilities, the energy required to complete | LTS/NA |

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| | | *reliability,* would all require use of energy during construction. | | the projects would also be much smaller. | |
| Energy use for operation of the conveyance facility would be 61 GWh/yr under 2025 conditions, which is greater than the No Action Alternative. However, operation of the water conveyance facility would be managed to maximize efficient energy use, including off-peak pumping and use of gravity, and would include renewable energy sources. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*— Additional 25 kWh/af of energy use for the Clifton Court Forebay connection intake | LTS/NA | Energy use for CM-1 and MMWQ-7e would be managed to maximize efficient energy use, including off-peak pumping and/or use of gravity. Energy would be provided from renewable energy sources to the greatest degree possible. | LTS/NA |
| **Air Quality and GHG** | | | | | |
| Construction of the conveyance facilities would generate criteria pollutants in excess of the SMAQMD regional thresholds. Daily maximum NOx emission from any year would be 1,273 pounds per day. | LTS/NA with application of MMs AQ-1a and AQ-1b | *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability,* would each generate NOX during construction. | LTS/NA | Daily maximum NOx emission from any year during construction of CM-1 is estimated to total 1,273 pounds per day. This total would be exceeded when combined with construction-generated criteria pollutants caused by construction of the mitigation measures. The level of additional criteria pollutants would be determined by the extent of utility and transmission line relocation and roadway construction but would not be expected to exceed the | LTS/NA with application of MMs AQ-1a and AQ-1b |

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| | | | | significance threshold when combined with CM-1. | |
| Construction of the conveyance facilities would not generate criteria pollutants in excess of the YSAQMD regional thresholds. Daily maximum NOx emission from any year would be 174 pounds per day. | LTS/NA | *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability,* would each generate NOX during construction. | LTS/NA | Daily maximum NOx emission from any year during construction of CM-1 is estimated to total 174 pounds per day. This total would be exceeded when combined with construction-generated criteria pollutants caused by construction of the mitigation measures. The level of additional criteria pollutants would be determined by the extent of utility and transmission line relocation and roadway construction but would not be expected to exceed the significance threshold when combined with CM-1. | LTS/NA |
| Construction of the conveyance facilities would generate criteria pollutants in excess of the BAAQMD regional thresholds. Daily maximum NOx emission from any year would be 1,700 pounds per day. | LTS/NA with application of MMs AQ-3a and AQ-3b | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM SW-4: Implement Measures to Reduce Runoff and Sedimentation MM TRANS-2c:* Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible would each generate NOX during construction. | LTS/NA with application of MMs AQ-3a and AQ-3b | Daily maximum NOx emission from any year during construction of CM-1 is estimated to total 1,700 pounds per day. This total would be exceeded when combined with construction-generated criteria pollutants caused by construction of the mitigation measures. The level of additional criteria pollutants would be | LTS/NA with application of MMs AQ-3a and AQ-3b |

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|---|---|---|---|---|---|
| | | | | determined by the extent of utility and transmission line relocation and roadway construction but would not be expected to exceed the significance threshold when combined with CM-1. | |
| Construction of the conveyance facilities would generate criteria pollutants in excess of the SJVAPCD regional thresholds. Yearly maximum NOx emission from any year would be 112 tons per day. | LTS/NA with application of MMs AQ-4a and AQ-4b | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM SW-4: Implement Measures to Reduce Runoff and Sedimentation MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits,* and *MM AES-6a: Underground New or Relocated Utility Lines Where Feasible* would each generate NOX during construction. | LTS/NA with application of MMs AQ-4a and AQ-4b | Daily maximum NOx emission from any year would be 112 pounds per day. This total would be exceeded when combined with construction-generated criteria pollutants caused by construction of the mitigation measures. The level of additional criteria pollutants generated would be determined by the extent of runoff and sedimentation actions, utility and transmission line relocation, and roadway construction but would not be expected to exceed the significance threshold when combined with CM-1. | LTS/NA with application of MMs AQ-4a and AQ-4b |

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| Construction of the conveyance facilities would generate emissions that would exceed SMAQMD's 24-hour PM10 threshold at 10 receptor locations | LTS/NA with application of MM AQ-9 | *MM SW-4: Implement Measures to Reduce Runoff and Sedimentation, MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits*, and *MM AES-6a: Underground New or Relocated Utility Lines Where Feasible* would each generate PM-10 during construction. | LTS/NA with application of MM AQ-9 | Construction-related emissions of CM-1 in combination with mitigation measures would exceed SMAQMD's 24-hour PM10 thresholds. | LTS/NA with application of MM AQ-9 |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from localized particulate matter in excess of YSAQMD's health-based concentration thresholds. | LTS/NA | *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible, and MM UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability* not expected to exceed localized health based particulate concentration thresholds during construction. | LTS/NA | Construction-related emissions from mitigation measures are not expected to exceed YSAQMD's health-based concentration thresholds when combined with emissions generated during construction of CM-1. YSAQMD recommended onsite fugitive dust controls, such as regular watering, would be conducted. | LTS/NA |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from localized particulate matter in excess of BAAQMD's health-based concentration thresholds. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning* | LTS/NA | Construction-related emissions from mitigation measures are not expected to exceed BAAQMD's health-based concentration thresholds when combined with emissions generated during construction of CM-1. BAAQMD recommended | LTS/NA |

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| | | *Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible,* not expected to exceed localized health based particulate concentration thresholds during construction. | | onsite fugitive dust controls, such as regular watering, would be conducted. | |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from localized particulate matter in excess of SJVAPCD's health-based concentration thresholds. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible*—not expected to exceed localized health based particulate concentration thresholds during construction. | LTS/NA | Construction-related emissions from mitigation measures are not expected to exceed SJVAPCD's health-based concentration thresholds when combined with emissions generated during construction of CM-1. SJVAPCD recommended onsite fugitive dust controls, such as regular watering, would be conducted when the mitigation measures are implemented. | LTS/NA |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from diesel particulate matter in excess of SMAQMD's chronic non-cancer and cancer risk assessment thresholds. | LTS/NA | *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or* | LTA/NA | Construction-related diesel particulate emissions generated during construction of mitigation measures in combination with CM-1 are not expected to exceed SMAQMD's chronic non-cancer and cancer risk assessment thresholds because the | LTS/NA |

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| | | *Relocated Utility Lines Where Feasible*—not expected to expose sensitive receptors to health threats from diesel particulate matter as construction activities would be much smaller and of shorter duration than occurring under CM-1. | | diesel particulate matter generated by the mitigation measures would be small compared to CM-1. | |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from diesel particulate matter in excess of YSAQMD's chronic non-cancer and cancer risk thresholds | LTS/NA | *MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible*—not expected to expose sensitive receptors to health threats from diesel particulate matter as construction activities would be much smaller and of shorter duration than occurring under CM-1. | LTS/NA | Construction-related diesel particulate emissions generated during construction of mitigation measures in combination with CM-1 are not expected to exceed SMAQMD's chronic non-cancer and cancer risk assessment thresholds because the diesel particulate matter generated by the mitigation measures would be small compared to CM-1. | LTS/NA |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from diesel particulate matter in excess of BAAQMD's chronic non-cancer and cancer risk thresholds | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where* | LTS/NA | Construction-related diesel particulate emissions generated during construction of mitigation measures in combination with CM-1 are not expected to exceed BAAQMD's chronic non-cancer and cancer risk assessment thresholds because the diesel particulate matter generated | LTS/NA |

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| | | *Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible*—not expected to expose sensitive receptors to health threats from diesel particulate matter as construction activities would be much smaller and of shorter duration than occurring under CM-1. | | by the mitigation measures would be small compared to CM-1. | |
| Construction of the conveyance facilities would not expose sensitive receptors to health threats from diesel particulate matter in excess of SJVAPCD's chronic non-cancer and cancer risk thresholds | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits, MMSW-4: Implement Measures to Reduce Runoff and Sedimentation, MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, and MM AES-6a: Underground New or Relocated Utility Lines Where Feasible*—not expected to expose sensitive receptors to health threats from diesel particulate matter as construction activities would be much smaller and of shorter duration than occurring under CM-1. | LTS/NA | Construction-related diesel particulate emissions generated during construction of mitigation measures in combination with CM-1 are not expected to exceed SJVAPCD's chronic non-cancer and cancer risk assessment thresholds because the diesel particulate matter generated by the mitigation measures would be small compared to CM-1. | LTS/NA |

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|---|---|---|---|---|---|
| **Noise** | | | | | |
| Noise from construction activities is predicted to exceed daytime and nighttime noise thresholds at nearby residences, schools and outdoor parks. For intakes, the number of residential parcels would be 87 daytime and 106 nighttime in Sacramento County and 27 daytime and 71 nighttime parcels in Yolo County. For the conveyance facilities, this would be 118 daytime and 120 nighttime parcels in Sacramento County, 10 daytime and 105 nighttime parcels in Yolo County, and 8 daytime and 18 nighttime parcels in San Joaquin County. | SU/A with application of noise abatement plan and MMs NOI-1a and NOI-1b | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Equipment and activities associated with construction at Clifton Court Forebay are expected to exceed daytime and nighttime thresholds for noise as set by OPR's noise compatibility guidelines<br>*MM GW-7: Provide an Alternate Source of Water*—well drilling activities would result in short-term noise impacts for several days.<br>*MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits*—Improvement to or construction of new roadways may result in increased noise.<br>*MM SW-4: Implement Measures to Reduce Runoff and Sedimentation*—construction of onsite stormwater detention facilities could create construction-related noise. | LTS/NA with application of noise abatement plan and MMs NOI-1a and NOI-1b because of location and duration of construction associated with each measure. | The location of mitigation measures in combination with the timing of the measures suggests the noise effects of CM-1 with mitigation measures would not be additive. As an example, MM WQ-7e is located over 30 miles from the north Delta intakes. Mitigation measures would be subject to noise mitigation measure and abatement plan adopted under Alternative 4A | SU/NA |
| Groundborne vibration levels from pile driving could exceed vibration thresholds at nearby receptors. The number of residential parcels effected would 62 in Sacramento County, 7 in San Joaquin County, and 1 in Contra Costa County. | SU/A with application of MM NOI-2 | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Impact pile driving at Clifton Court Forebay will create intermittent and temporary vibration | SU/A with application of MM NOI-2 | Effect of groundborne vibration levels from pile driving for construction of the intakes on residential parcels combined with effect of impact pile driving for MM WQ-7e on recreational land. | SU/A |

| **CEQA Finding** | | **NEPA Finding** | |
|---|---|---|---|
| NI = no impact. | S = significant. | B = beneficial. | NA = not adverse. |
| LTS = less than significant. | SU = significant and unavoidable. | NE = no effect. | A = adverse. |

| Effects | CEQA/NEPA Conclusion for Alternatives | Mitigation Measure Effects | CEQA/NEPA Conclusion for Mitigation Measures | Combined Effects of Alternatives and Mitigation Measures | CEQA/NEPA Conclusion |
|---|---|---|---|---|---|
| Operation of water conveyance facilities could result in substantial increases in noise levels affecting nearby communities and residences, but no residential parcels would be affected. | LTS/NA | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—Operating noise of the pump station at Clifton Court Forebay will increase long-term ambient noise levels above nighttime thresholds, which are not as sensitive. | LTS/NA | Noise generated by the simultaneous operations of the CWF Clifton Court pump station and the CCWD-Clifton Court interconnection pump station would increase long-term ambient noise levels in the vicinity of the stations. No residential parcels would be affected. | LTS/NA |
| **Hazardous Materials** | | | | | |
| Potential for conflicts with, or exposure to known hazardous material sites during. There are no known sites Cortese List sites or known sites of concern in the construction footprint. | NI/NE | No mitigation measures would result in conflict with or exposure to known hazardous material sites | NI/NE | No combined effect applicable | NI/NE |
| Create a substantial hazard to the public or environment through release of hazardous materials or by other means during construction. | LTS/NA with application of mitigation measures MM HAZ-1a, MM HAZ-1b, MM UT-6a, UT-6c, and TRANS-1a | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement, MM AES-6a: Underground New or Relocated Utility Lines Where Feasible*, and *MM SW-4: Implement Measures to Reduce Runoff and Sedimentation* would require the use of heavy equipment and the potential for release of hazardous materials during construction. | LTS/NA as result of application of mitigation measures MM HAZ-1a, MM HAZ-1b, MM UT-6a, UT-6c, and TRANS-1a | Increase in the potential for release of hazardous materials greater than that estimated for construction of the water conveyance facilities because each mitigation measure would result in additional ground disturbing activity. | LTS/NA |

| **CEQA Finding** | | **NEPA Finding** | |
|---|---|---|---|
| NI = no impact. | S = significant. | B = beneficial. | NA = not adverse. |
| LTS = less than significant. | SU = significant and unavoidable. | NE = no effect. | A = adverse. |

| Effects | CEQA/NEPA Conclusion for Alternatives | Mitigation Measure Effects | CEQA/NEPA Conclusion for Mitigation Measures | Combined Effects of Alternatives and Mitigation Measures | CEQA/NEPA Conclusion |
|---|---|---|---|---|---|
| **Public Health** | | | | | |
| Increase in surface water area and potential suitable mosquito breeding habitat attributable to construction and operation of some of the components of the water conveyance facility (i.e. intakes, sedimentation basins, forebay, etc.). Management plans and best management practices would address this effect. | LTS/NA | *MM SW-4: Implement Measures to Reduce Runoff and Sedimentation*—creation of onsite stormwater detention facilities could create additional mosquito habitat. | LTS/NA | Construction and operation of conveyance facilities (intakes; sedimentation basins; solids lagoons; intermediate forebay, inundation [emergency overflow] area, and expanded Clifton Court Forebay) combined with sedimentation basins for MM SW-4. Management plans and best management practices would address this effect. | LTS/NA |
| Protect and restore 15,836 acres aquatic habitat that could potentially increase suitable mosquito habitat. Management plans and best management practices would address this effect. | LTS/NA | *MM SW-4: Implement Measures to Reduce Runoff and Sedimentation*—creation of onsite stormwater detention facilities could create additional mosquito habitat | LTS/NA | Increase in aquatic habitat combined with sedimentation basins for MM SW-4. Management plans and best management practices would address this effect. | LTS/NA |
| **Mineral Resources** | | | | | |
| Water conveyance facilities would reduce access to approximately 350 acres of land available for vertical extraction of natural gas from directly underlying gas fields. | LTS/NA | No mitigation measures would affect mineral resources | LTS/NA | No combined effects applicable | LTS/NA |

| **CEQA Finding** | | **NEPA Finding** | |
|---|---|---|---|
| NI = no impact. | S = significant. | B = beneficial. | NA = not adverse. |
| LTS = less than significant. | SU = significant and unavoidable. | NE = no effect. | A = adverse. |

| Effects | CEQA/NEPA Conclusion for Alternatives | Mitigation Measure Effects | CEQA/NEPA Conclusion for Mitigation Measures | Combined Effects of Alternatives and Mitigation Measures | CEQA/NEPA Conclusion |
|---|---|---|---|---|---|
| **Paleontological Resources** | | | | | |
| Result in the destruction of unique or significant paleontological resources as a result of excavation of 56 million cubic yards of material during construction of water conveyance facilities. | SU/A with application of MMs PALEO-1a through PALEO-1d | *MM WQ-7e: Implement Terms of the Contra Costa Water District Settlement Agreement*—ground disturbing activities associated with the construction of an interconnection at either Victoria Island or Clifton Court Forebay occur in a geologic unit that has potential for sensitive paleontological resources.<br>*MM AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible*—trenching for underground utilities could occur in a geologic unit that has potential for sensitive paleontological resources<br>*MM AES-6a: Underground New or Relocated Utility Lines Where Feasible*—Same as MM AES-1a.<br>*MM TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits*—If use of physically deficient roadways cannot be avoided or limited, it may be necessary to improve the deficient roadways or make other necessary infrastructure improvements, if any, before construction to make them suitable for use during construction. Construction of roadways could occur in a geologic unit that has potential for sensitive paleontological resources. | SU/A | Excavation of approximately 56 million cubic yards of material related to construction of conveyance facilities combined with ground disturbance caused by construction of the interconnection, relocating transmission lines and utility infrastructure, undergrounding new or relocated utility lines, and construction of roadways. Additional ground disturbance would be determined by extent of utility and transmission line relocation and roadway construction. MMs PALEO-1a though PALEO-1d would mitigate the effects of surface-related ground disturbance. | SU/A |

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| **CEQA Finding** | | **NEPA Finding** | |
|---|---|---|---|
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# 31.6 Public Trust Considerations

## 31.6.1 Introduction

Actions by state agencies involving the planning and allocation of water resources could implicate the common law "public trust doctrine."[2] The doctrine "is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust."[3] The "traditional triad" of public trust uses includes navigation, commerce, and fishing on navigable waters.[4] The doctrine could extend to actions on non-navigable tributaries of navigable waters that adversely affect those navigable waters.[5] The protection of recreational and ecological values "is among the purposes of the public trust."[6]

"[T]raceable to Roman law," the doctrine "rests on several related concepts. First, that the public rights of commerce, navigation, fishery, and recreation are so intrinsically important and vital to free citizens that their unfettered availability to all is essential in a democratic society. 'An allied principle holds that certain interests are so particularly the gifts of nature's bounty that they ought to be reserved for the whole of the populace.... Finally, there is often a recognition … that certain uses have a peculiarly public nature that makes their adaptation to private use inappropriate. The best known example is found in the rule of water law that one does not own a property right in water in the same way he owns his watch or his shoes, but that he owns only an usufruct—an interest that incorporates the needs of others. It is thus thought to be incumbent upon the government to regulate water uses for the general benefit of the community and to take account thereby of the public nature and the interdependency which the physical quality of the resource implies.'" [7]

Importantly, the public doctrine does not operate as an absolute protection of the resources that come under its ambit. Under the doctrine, the state has an "affirmative duty" to project public trust uses whenever *feasible*."[8] "[B]oth the public trust doctrine and the water rights system embody important precepts which make the law more responsive to the diverse needs and interests involved in the planning and allocation of water resources. To embrace one system of thought and reject the other would lead to an unbalanced structure, one which would either decry as a breach of trust appropriations essential to the economic development of this state, or deny any duty to protect or even consider the values promoted by the public trust."[9] Thus, "[a]s a matter of practical necessity, the state may have to approve appropriations despite foreseeable harm to public trust

[2] *National Audubon Society v. Superior Court* (1923) 33 Cal.3d 419, 446 (*National Audubon*).

[3] *Id.* at p. 441.

[4] *Id*. at p. 434.

[5] *Id.* at p. 437.

[6] *Id*. at p. 435.

[7] *Zack's Inc. v. City of Sausalito* (2008) 165 Cal.App.4th 1163, 1175–1176, quoting Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 Mich. L.Rev. 471, 484–485, citations, paragraph breaks, and footnotes omitted.

[8] *National Audubon*, *supra*, 33 Cal.3d at p. 446, italics added.

[9] *Id.* at p. 445.

uses. In so doing, however, the state must bear in mind its duty as trustee to consider the effect of the taking on the public trust," and "to preserve, so far as consistent with the *public interest*, the uses protected by the trust."[10]

Although the legal principles are well established, "[t]here is no set 'procedural matrix' for determining state compliance with the public trust doctrine."[11] In general, however, "evaluating project impacts within a regulatory scheme like CEQA is sufficient 'consideration' for public trust purposes."[12] Notably, CEQA requires the imposition of all *feasible* means of reducing the severity of significant environmental effects, including those on water-related resources, including fish, and on wildlife species and their habitats.[13] Where governmental action authorizes the *private* use of public trust resources, however, CEQA compliance without more may not be enough; specific findings separately addressing public trust considerations may be necessary.[14]

Here, the California WaterFix, as well as all of the alternatives and sub-alternatives set forth in this EIR/EIS, all involve proposals by which the Department of Water Resources (DWR) and the Bureau of Reclamation (Reclamation) – both *public* agencies – would add new points and diversion and alter the system operations by which they provide water to other *public* agency customers. This EIR/EIS, then, sets forth sufficient analyses for allowing DWR, as lead agency, to consider the public trust doctrines. The EIR/EIS should also be very helpful in assisting both the State Water Resources Control Board (State Board) and the Department of Fish and Wildlife (DFW), as CEQA responsible agencies, to satisfy their own obligations under both the common law public trust doctrine and the statutory public trust doctrine aimed at protecting wildlife and fish species.

## 31.6.2 Public Trust Doctrine Considerations

Compliance with CEQA, with its mandate to mitigate significant environmental effects to the extent feasible,[15] tends to ensure compliance with the public trust doctrine, at least with respect to public projects involving public use of public trust resources.[16] This is because the public trust doctrine gives the state an "affirmative duty" to project public trust uses whenever *feasible*."[17]

Throughout the CEQA/NEPA process, DWR as CEQA lead agency has gone to considerable lengths to develop environmental commitments, conservation measures, avoidance and minimization measures, and mitigation measures intended to reduce otherwise "significant environmental effects" to less-than-significant levels whenever feasible. These effects include effects on the following public trust resources: surface water; water quality; fish and aquatic resources; terrestrial

[10] *Ibid.,* italics added.

[11] *San Francisco Baykeeper, Inc. v. State Lands Commission* (2015) 242 Cal.App.4th 202, 234 (*SF Baykeeper*), quoting *Citizens for East Shore Parks v. California State Lands Commission* (2013) 202 Cal.App.4th 549, 576 (*Citizens for East Shore Parks*).

[12] *Citizens for East Shore Parks*, *supra*, 202 Cal.App.4th at pp. 576–577, citing *National Audubon*, *supra*, 33 Cal.3d at p. 446, fn. 27, and *Carstens v. Coastal Commission* (1986) 182 Cal.App.3d 277, 289-291.

[13] California Public Resources Code Section 21002; State CEQA Guidelines Sections 15002[a][3], 15021[a][2].

[14] *SF Baykeeper*, *supra*, 242 Cal.App.4th at pp. 241-242 [leases authorizing a private lessee to mine sand from the San Francisco Bay].

[15] California Public Resources Code Section 21002; State CEQA Guidelines Sections 15002[a][3], 15021[a][2].

[16] *Citizens for East Shore Parks*, *supra*, 202 Cal.App.4th at pp. 576-577, citing *National Audubon*, *supra*, 33 Cal.3d at p. 446, fn. 27; *Carstens v. Coastal Commission* (1986) 182 Cal.App.3d 277, 289-291; *SF Baykeeper*, *supra*, 242 Cal.App.4th at pp. 241-242 [leases authorizing a private lessee to mine sand from the San Francisco Bay].

[17] *National Audubon*, *supra*, 33 Cal.3d at p. 446, italics added.

biological resources; in-water recreational resources; and in-river transportation. In this EIR/EIS, these topics are addressed in Chapters 6, 8, 11, 12, 15, and 19.

Most of the impacts at issue can be mitigated to less-than-significant levels, thereby resulting in protection of the public trust resources at issue. Some impacts, however, will remain significant and unavoidable. The existence of such impacts is also consistent with the public trust doctrine in that there are no *feasible* means by which such impacts can be mitigated to less-than-significant levels. With respect to Alternative 4A, some impacts are considered significant and have been identified and analyzed in the applicable resources chapter.

#### 31.6.2.1 Impact WQ-14: Effects on Mercury Concentrations Resulting from Implementation of Environmental Commitments 3, 4, 6–12, 15, and 16

Many of these impacts would be the result of large-scale restoration targets relevant to Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9. This analysis can be found in Chapter 8, *Water Quality*.

#### 31.6.2.2 Impact AQUA-201: Effects of Water Operations on Entrainment of Non-Covered Aquatic Species of Primary Management Concern (Striped Bass and American Shad)

Striped bass and American shad are non-native fish species popular with anglers in Northern California. As discussed in Chapter 11, Section 11.1.1.2, *Upstream of the Delta*, the species were introduced into the Sacramento-San Joaquin River Basin in the late 1880s. Both species migrate from the Pacific Ocean via the Delta into the San Joaquin River to spawn in the spring. Earlier life stages (eggs and larvae) of striped bass and American shad, however, would be susceptible to entrainment at the proposed north Delta intakes. For striped bass and American shad in particular, much of the overall Central Valley populations may be spawned upstream of the proposed north Delta intakes and therefore could be susceptible. For Alternative 4A, as with other alternatives proposing water conveyance with north Delta intakes, there is the potential for an appreciable increase in magnitude of entrainment of early life stages.

Given the potential for appreciably greater entrainment of the earliest life stages, however, it is concluded with some uncertainty that the effects of entrainment on striped bass from Alternative 4A would be significant and unavoidable. Although American shad early life stages may rear to sufficiently large size above the Delta, they could also be entrained in appreciably greater magnitude than currently occurs and therefore it is also concluded that the effects of entrainment on American shad from Alternative 4A would also be significant and unavoidable.

#### 31.6.2.3 Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities

As discussed in Chapter 15, *Recreation*, Section 15.3.4.2, potential effects on recreation include loss of access, construction noise, and changes in the visual character of the area surrounding the recreation sites. Two recreation sites, Clifton Court Forebay and Cosumnes River Preserve, are within the construction footprint and six recreation sites or areas (Stone Lakes National Wildlife Refuge [NWR], Clarksburg Boat Launch, Wimpy's Marina, Delta Meadows, Bullfrog Landing Marina,

and Lazy M Marina) are within the 1,200- to 1,400-foot indirect impact area. Also, recreation activities at Stone Lakes NWR that could be adversely affected include wildlife and environmental education. Impacts on recreation opportunities occurring within the Cosumnes River Preserve, including disruption of wildlife viewing and docent-guided tours could also occur. On-water recreation opportunities not associated with formal recreation sites could be affected by the introduction of noise and light during the construction period.

Construction of Alternative 4A intakes and water conveyance facilities would result in permanent and long-term impacts on some recreational opportunities and experiences in the study area because of access, noise, and visual setting disruptions that could result in loss of public use. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences. The following mitigation measures, in combination with environmental commitments, would reduce some construction-related impacts by compensating for effects on wildlife habitat and species; minimizing the extent of changes to the visual setting, including nighttime light sources; manage construction-related traffic; and implementing noise reduction and complaint tracking measures: REC-2, BIO-75, AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4a, AES-4b, AES-4c, TRANS-1a, TRANS-1b, TRANS-1c, NOI-1a, and NOI-1b. However, notwithstanding this mitigation, the impact would not be reduced to a less-than-significant level, because it is not certain the mitigation would reduce the level of these impacts to less than significant in all the instances occurring within the entire study area. These impacts are therefore considered significant and unavoidable.

#### 31.6.2.4 Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities

Construction activities associated with constructing the three intakes on the Sacramento River, siphons near Clifton Court Forebay, Head of Old River barrier and operating barges and constructing temporary barge unloading facilities at Snodgrass Slough, Potato Slough, San Joaquin River, Middle River, Connection Slough, Old River, and the West Canal would disrupt boat passage and navigation at and near these sites. Although implementing Mitigation Measure TRANS-1a and helping to fund measures to reduce aquatic weeds would reduce impacts on recreational navigation, these effects would remain significant because of the long duration of construction, which would continually reduce recreation opportunities and distract from experiences occurring near construction activity (see the discussion of Impact REC-3 in Chapter 15, *Recreation*, Sections 15.3.3.9 and 15.3.4.2).

### 31.6.3 Conclusion

The California WaterFix provides a way to improve ecosystem health while also and protecting water supply reliability. The California WaterFix is grounded in concepts of efficiency and public benefit, and uses best available science for design and implementation.