Chapter 31
Other CEQA/NEPA Required Sections

31.4 Summary of Significant and Unavoidable Adverse Impacts

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

Alternative 4 Potential Impact	Impact Conclusions Before Mitigation	Proposed Mitigation	Impact Conclusion After Mitigation	
	CEQA		CEQA	NEPA
GW-1: During construction, deplete groundwater supplies or interfere with groundwater recharge, alter local groundwater levels, or reduce the production capacity of preexisting nearby wells	S	GW-1: Maintain water supplies in areas affected by construction dewatering	SU	A
GW-5: During operations of new facilities, interfere with agricultural drainage in the Delta	S	GW-5: Agricultural lands seepage minimization	SU	A
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 CM2–~~CM22~~CM21	S	GW-5: Agricultural lands seepage minimization	SU	A
GW-7: Degrade groundwater quality as a result of implementing CM2–~~CM22~~CM21	S	GW-7: Provide an alternate source of water	SU	A
GW-8: During operations, deplete groundwater supplies or interfere with groundwater recharge, alter groundwater levels, or reduce the production capacity of pre-existing nearby wells	S	No feasible mitigation to address this impact	SU	A
GW-9: Degrade groundwater quality	S	No feasible mitigation to address this impact	SU	A
~~WQ-5: Effects on bromide concentrations resulting from facilities operations and maintenance (CM1)~~	~~S~~	~~WQ-5: Avoid, minimize, or offset, as feasible, adverse water quality conditions~~	~~SU~~	~~A~~
~~WQ-7: Effects on chloride concentrations resulting from facilities operations and maintenance (CM1)~~	~~S~~	~~WQ-7: Following initial operations of CM1, conduct additional evaluation and modeling of chloride levels to determine feasibility of mitigation to reduce chloride levels~~ ~~WQ-7a: Conduct additional evaluation and modeling of increased chloride levels following initial operations of CM1.~~ ~~WQ-7b: Consult with Delta water purveyors to identify means to avoid, minimize, or offset for reduced seasonal availability of water that meets applicable water quality objectives~~ ~~WQ-7c:~~ ~~Mitigation Measure WQ-7d: Site and Design Restoration Sites and consult with CDFW/USFWS, and Suisun Marsh Stakeholders to Identify Potential Actions to Avoid or Reduce Chloride Consult with CDFW/USFWS, and Suisun Marsh stakeholders, to identify potential actions to avoid or minimize chloride level increases in the Marsh.~~	~~SU~~	~~A~~
WQ-11: Effects on electrical conductivity concentrations resulting from facilities operations and maintenance (CM1)	S	WQ-11: Avoid, minimize, or offset, as feasible, reduced water quality conditions WQ-11a: Design Restoration Sites to Reduce Effects on Compliance with the Fish and Wildlife EC Objective between Prisoners Point and Jersey Point, Evaluate Striped Bass Monitoring Data, and Consult with CDFW/USFWS/NMFS to Determine Whether Additional Actions are Warranted~~Conduct additional evaluation and modeling of increased EC levels following initial operations of CM1.~~ WQ-11b: Site and Design Restoration Sites and consult with CDFW/USFWS, and Suisun Marsh Stakeholders to Identify Potential Actions to Avoid or Reduce EC Level Increases in the Marsh~~Consult with CDFW/USFWS, and Suisun Marsh stakeholders, to identify potential actions to avoid or minimize EC level increases in the Marsh.~~ WQ-11c: Design Restoration Sites to Reduce Effects on Compliance with the Fish and Wildlife EC Objective between Prisoners Point and Jersey Point, Evaluate Striped Bass Monitoring Data, and Consult with CDFW/USFWS/NMFS to Determine Whether Additional Actions are Warranted WQ-11d: Site and Design Restoration Sites and consult with CDFW/USFWS, and Suisun Marsh Stakeholders to Identify Potential Actions to Avoid or Reduce EC Level Increases in the Marsh	SU	A
WQ-14: Effects on mercury concentrations resulting from implementation of CM2–~~CM22~~CM21	S	No available mitigation to address this impact	SU	A

Alternative 4 Potential Impact	Impact Conclusions Before Mitigation	Proposed Mitigation	Impact Conclusion After Mitigation	
	CEQA		CEQA	NEPA
~~WQ-18: Effects on organic carbon concentrations resulting from implementation of CM2–CM22~~CM21	~~S~~	~~WQ-18: Design wetland and riparian habitat features to minimize effects on municipal intakes~~	~~SU~~	~~A~~
~~WQ-22: Effects on pesticide concentrations resulting from implementation of CM2–CM22~~CM21	~~S~~	~~WQ-22: Implement principals of integrated pest management~~	~~SU~~	~~A~~
WQ-32: Effects on Microcystis Bloom Formation Resulting from Facilities Operations and Maintenance (CM1).	S	WQ-32a: Design Restoration Sites to Reduce Potential for Increased Microcystis Blooms WQ-32b: Investigate and Implement Operational Measures to Manage Water Residence Time	SU	A
WQ-33: Effects on Microcystis Bloom Formation Resulting from Other Conservation Measures (CM2–CM21).	S	No available mitigation to address this impact	SU	A
SOILS-2: Loss of topsoil from excavation, overcovering, and inundation as a result of constructing the proposed water conveyance facilities	S	SOILS-2a: Minimize extent of excavation and soil disturbance SOILS-2b: Salvage, stockpile, and replace topsoil and prepare a topsoil storage and handling plan	SU	A
SOILS-7: Loss of topsoil from excavation, overcovering, and inundation as a result of implementing the proposed conservation measures CM2–CM11	S	SOILS-2a: Minimize extent of excavation and soil disturbance SOILS-2b: Salvage, stockpile, and replace topsoil and prepare a topsoil storage and handling plan	SU	A
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 (CM1)	S	TRANS-1a: Implement site-specific construction traffic management plan TRANS-1b: Limit hours or amount of construction activity on congested roadway segments	SU	A
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.	S	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 AG-1a: Promote agricultural productivity of Important Farmland to the extent feasible AG-1b: Minimize impacts on land subject to Williamson Act contracts or in Farmland Security Zones AG-1c: Consideration of an Optional Agricultural Land Stewardship Approach or Conventional Mitigation Approach	SU	A
AG-2: Other effects on agriculture as a result of constructing and operating the proposed water conveyance facility	S	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 GW-1: Maintain water supplies in areas affected by construction dewatering GW-6: Agricultural lands seepage minimization WQ-11: Avoid, minimize, or offset, as feasible, reduced water quality conditions	SU	A
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 Conservation Measures 2-11, 13, 15, 16, 20, and 21	S	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	SU	A
AG-4: Other effects on agriculture as a result of implementing the proposed Conservation Measures 2-11, 13, 15, 16, 20, and 21	S	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 GW-6: Agricultural lands seepage minimization	SU	A
REC-2: Result in long-term reduction of recreation opportunities and experiences as a result of constructing the proposed water conveyance facilities	S	REC-2: Provide alternative bank fishing access sites BIO-75: Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds 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 AES-1b: Install visual barriers between construction work areas and sensitive receptors ~~AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan~~AES-1c: Develop and Implement a Tunnel Work and Reusable Tunnel Material Area Management Plan AES-1d: Restore barge unloading facility sites once decommissioned AES-1e: Apply aesthetic design treatments to all structures to the extent feasible AES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilities	SU LTS (for impacts related to construction of the intakes)	A NA (for impacts related to construction of the intakes)

Alternative 4 Potential Impact	Impact Conclusions Before Mitigation	Proposed Mitigation	Impact Conclusion After Mitigation	
	CEQA		CEQA	NEPA
		AES-1g: Implement best management practices to implement project landscaping plan AES-4a: Limit construction to daylight hours within 0.25 mile of residents AES-4b: Minimize fugitive light from portable sources used for construction AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences TRANS-1a: Implement site-specific construction traffic management plan TRANS-1b: Limit hours or amount of construction activity on congested roadway segments TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments NOI-1a: Employ noise-reducing construction practices during construction NOI-1b: Prior to construction, initiate a complaint/response tracking program		
REC-3: Result in long-term reduction of recreational navigation opportunities as a result of constructing the proposed water conveyance facilities	S	TRANS-1a: Implement site-specific construction traffic management plan	SU	A
AES-1: Substantial alteration in existing visual quality or character during construction of conveyance facilities	S	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 AES-1b: Install visual barriers between construction work areas and sensitive receptors ~~AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan~~AES-1c: Develop and Implement a Tunnel Work and Reusable Tunnel Material Area Management Plan AES-1d: Restore barge unloading facility sites once decommissioned AES-1e: Apply aesthetic design treatments to all structures to the extent feasible AES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilities AES-1g: Implement best management practices to implement project landscaping plan	SU	A
AES-2: Permanent effects on a scenic vista from presence of conveyance facilities.	S	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 ~~AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan~~AES-1c: Develop and Implement a Tunnel Work and Reusable Tunnel Material Area Management Plan AES-1e: Apply aesthetic design treatments to all structures to the extent feasible	SU	A
AES-3: Permanent damage to scenic resources along a state scenic highway from construction of conveyance facilities	S	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 ~~AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan~~AES-1c: Develop and Implement a Tunnel Work and Reusable Tunnel Material Area Management Plan AES-1e: Apply aesthetic design treatments to all structures to the extent feasible	SU	A
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.	S	AES-4a: Limit construction to daylight hours within 0.25 mile of residents AES-4b: Minimize fugitive light from portable sources used for construction AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences	SU	A
AES-6: Substantial alteration in existing visual quality or character during construction of CM2–~~CM22~~CM21.	S	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 AES-1b: Install visual barriers between construction work areas and sensitive receptors ~~AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan~~AES-1c: Develop and Implement a Tunnel Work and Reusable Tunnel Material Area Management Plan AES-1d: Restore barge unloading facility sites once decommissioned AES-1e: Apply aesthetic design treatments to all structures to the extent feasible AES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilities	SU	A

Alternative 4 Potential Impact	Impact Conclusions Before Mitigation	Proposed Mitigation	Impact Conclusion After Mitigation	
	CEQA		CEQA	NEPA
		AES-1g: Implement best management practices to implement project landscaping plan AES-4a: Limit construction to daylight hours within 0.25 mile of residents AES-4b: Minimize fugitive light from portable sources used for construction AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences AES-6a: Underground new or relocated utility lines where feasible AES-6b: Develop and implement an afterhours low-intensity and lights off policy AES-6c: Implement a comprehensive visual resources management plan for the Delta and study area		
CUL-1: Effects on identified archaeological sites resulting from construction of conveyance facilities	S	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	SU	A
CUL-2: Effects on archaeological sites to be identified through future inventory efforts	S	CUL-2: Conduct inventory, evaluation, and treatment of archaeological resources	SU	A
CUL-3: Effects on archaeological sites that may not be identified through inventory efforts	S	CUL-3: Implement an archaeological resources discovery plan, perform training of construction workers, and conduct construction monitoring	SU	A
CUL-4: Effects on buried human remains damaged during construction	S	CUL-4: Follow state and federal law governing human remains if such resources are discovered during construction	SU	A
CUL-5: Direct and indirect effects on eligible and potentially eligible historic architectural/built environment-resources resulting from construction activities	S	CUL-5: Consult with relevant parties, prepare and implement a built environment treatment plan	SU	A
CUL-6: Direct and indirect effects on unidentified and unevaluated historic architectural/built environment resources resulting from construction activities	S	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	SU	A
CUL-7: Effects of other conservation measures on cultural resources	S	CUL-7: Conduct cultural resource studies and adopt cultural resource mitigation measures for cultural resource impacts associated with implementation of ~~conservation measures~~ CM2–CM21~~2~~	SU	A
TRANS-1: Increased construction vehicle trips resulting in unacceptable LOS conditions	S	TRANS-1a: Implement site-specific construction traffic management plan TRANS-1b: Limit hours or amount of construction activity on congested roadway segments TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments	SU[1]	A[1]
TRANS-2: Increased construction vehicle trips exacerbating unacceptable pavement conditions	S	TRANS-2a: Prohibit construction activity on physically deficient roadway segments TRANS-2b: Limit construction activity on physically deficient roadway segments TRANS-2c: Improve physical condition of affected roadway segments as stipulated in mitigation agreements or encroachment permits	SU[2]	A[2]
TRANS-3: Increase in safety hazards, including interference with emergency routes during construction	S	TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments	SU[3]	A[3]

[1] Although TRANS-1a through TRANS-1c would reduce the severity of this impact/effect, the BDCP 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 LOS 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.

[2] Although TRANS-1a through TRANS-1c would reduce the severity of this impact/effect, the BDCP 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.

[3] Mitigation Measure TRANS-1c will reduce the severity of this impact, the BDCP 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.

Alternative 4 Potential Impact	Impact Conclusions Before Mitigation	Proposed Mitigation	Impact Conclusion After Mitigation	
	CEQA		CEQA	NEPA
TRANS-6: Disruption of transit service during construction.	S	TRANS-1a: Implement site-specific construction traffic management plan TRANS-1b: Limit hours or amount of construction activity on congested roadway segments TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments	SU	A
~~TRANS-10: Increased traffic volumes during implementation of CM2–CM22~~CM21~~.~~	~~S~~	~~TRANS-1a: Implement site-specific construction traffic management plan~~ ~~TRANS-1b: Limit hours or amount of construction activity on congested roadway segments~~ ~~TRANS-1c: Make good faith efforts to enter into mitigation agreements to enhance capacity of congested roadway segments~~	~~SU~~[4]	~~A~~[4]
UT-6: Effects on regional or local utilities as a result of constructing the proposed water conveyance facilities.	S	UT-6a: Verify locations of utility infrastructure UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability UT-6c: Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety	SU[5]	A[5]
UT-8: Effects on public services and utilities as a result of implementing the proposed CM2–CM11	S	UT-6a: Verify locations of utility infrastructure UT-6b: Relocate utility infrastructure in a way that avoids or minimizes any effect on operational reliability UT-6c: Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety	SU	NA
~~AQ-13: Exposure of Sensitive Receptors to Health Threats in Excess of BAAQMD's Health Risk Assessment Thresholds~~	~~S (cancer risk)~~	~~AQ-13: Relocate Sensitive Receptors to Avoid Excess Cancer Risk from Exposure to Diesel Particulate Matter~~	~~SU (cancer risk)~~[6]	~~A (cancer risk)~~
AQ-~~17~~23: Generation of cumulative greenhouse gas emissions from increased CVP pumping as a result of implementation of CM1	S	No feasible mitigation to address this impact	SU	A
AQ-~~18~~24: Generation of regional criteria pollutants from implementation of CM2–CM11	S	AQ-~~12~~48: 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.	SU	A
AQ-~~12~~79: Generation of cumulative greenhouse gas emissions from implementation of CM2–CM11	S	AQ-2418: 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. AQ-2719 Prepare a land use sequestration analysis to quantify and mitigate (as needed) GHG flux associated with conservation measures and associated project activities	SU	A
NOI-1: Exposure of noise-sensitive land uses to noise from construction of water conveyance facilities	S	NOI-1a: Employ noise-reducing construction practices during construction, NOI-1b: Prior to construction, initiate a complaint/response tracking program	SU	A
NOI-2: Exposure of sensitive receptors to vibration or groundborne noise from construction of water conveyance facilities	S	NOI-2: Employ vibration-reducing construction practices during construction of water conveyance facilities	SU	A
NOI-4: Exposure of noise-sensitive land uses to noise from implementation of proposed Conservation Measures 2-10	S	NOI-1a: Employ noise-reducing construction practices during construction NOI-1b: Prior to construction, initiate a complaint/response tracking program	SU	A
HAZ-8: Increased risk of bird – aircraft strikes during implementation of conservation components that create or improve wildlife habitat	S	HAZ-8: Consult with individual airports and USFWS, and relevant regulatory agencies	SU	A

~~[4] Although TRANS-1a through TRANS-1c would reduce the severity of this impact/effect, the BDCP 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 roadway segment LOS 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.~~

[5] 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).

~~[6] The BDCP proponents cannot ensure that the affected landowner will accept DWR's offer for relocation assistance. If the landowner chooses not to accept DWR's offer of relocation assistance, a significant impact in the form of exposure to excess cancer risk would occur at the receptor location adjacent to Byron Highway. Therefore, this impact would be significant and unavoidable. If, however, the landowner accepts DWR's offer of relocation assistance, the impact would be less than significant.~~

Alternative 4 Potential Impact	Impact Conclusions Before Mitigation	Proposed Mitigation	Impact Conclusion After Mitigation	
	CEQA		CEQA	NEPA
PH-2: Exceedances of water quality criteria for constituents of concern such that there is an adverse effect on public health as a result of operation of the water conveyance facilities.	S	WQ-5: Avoid, minimize, or offset, as feasible, adverse water quality conditions	SU[7]	A[7]
PH-8: Increase in Microcystis Bloom Formation as a Result of Operation of the Water Conveyance Facilities	S	WQ-32a: Design Restoration Sites to Reduce Potential for Increased Microcystis Blooms WQ-32b: Investigate and Implement Operational Measures to Manage Water Residence Time	SU	A
PH-9: Increase in Microcystis Bloom Formation as a Result of Implementing CM2 and CM4	S	WQ-32a: Design Restoration Sites to Reduce Potential for Increased Microcystis Blooms WQ-32b: Investigate and Implement Operational Measures to Manage Water Residence Time	SU	A
MIN-5: Loss of availability of locally important natural gas wells as a result of implementing ~~Conservation Measures~~ CM2~~–CM21-22~~	S	MIN-5: Design ~~Conservation Measures 4, 5, and 10~~ CM4, CM5, and CM10 to avoid displacement of active natural gas wells to the extent feasible	SU	A
MIN–6: Loss of availability of extraction potential from natural gas fields as a result of implementing CM2–CM21~~Conservation Measures 2-22~~	S	MIN-6: Design CM4, CM5, and CM10~~Conservation Measures 4, 5, and 10~~ to maintain drilling access to natural gas fields to the extent feasible	SU	A
PALEO-1: Destruction of unique or significant paleontological resources as a result of construction of water conveyance facilities.	S	PALEO-1a: Prepare a monitoring and mitigation plan for paleontological resources PALEO-1b: Review 90% design submittal and develop specific language identifying how the mitigation measures will be implemented along the alignment PALEO-1c: Educate construction personnel in recognizing fossil material PALEO-1d: Collect and preserve substantial potentially unique or significant fossil remains when encountered	SU	A

[7] This impact/effect would be less than significant/not adverse if all financial contributions, technical contributions, or partnerships required to avoid significant impacts prove feasible and any necessary agreements are completed before the project's contribution to the effect.

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

31.5.1 Environmental and Other Commitments

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. As described in more detail in Chapter 3, *Description of Alternatives*, DWR has developed a Draft Geotechnical Exploration Plan (Phase 2) for the Alternative 4 conveyance alignment (MPTO). 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 (California Department of Water Resources 2014). 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.

31.5.2 Mitigation Measures

31.5.2.2 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, measures 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,

and through implementation of environmental commitments described in Appendix 3B, *Environmental Commitments.* These environmental commitments include *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). 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, measures 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, and through implementation of environmental commitments described in Appendix 3B, *Environmental Commitments.* These environmental commitments include *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). Therefore, this impact would be less than significant.

31.5.2.6 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 Measures AG-1 and AMMs would reduce the severity of this effect, as described in Section 31.5.2.3, would reduce the severity of this effect. Further, BDCP 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.

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 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.

Air Quality

Increased GHGs and criteria pollutants would result from the operation of construction equipment if wetlands are rehabilitated or restored. These effects are expected to be further evaluated and identified in subsequent project-level environmental analysis. 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, 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, implementation of AMM3 and AMM4, as well as environmental commitment measures implemented by the BDCP 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 BDCP 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.

~~31.5.2.19~~31.5.2.21 Mitigation Measure AES-6a: Underground New or Relocated Utility Lines Where Feasible

Under this mitigation measure, BDCP 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 for 31.5.2.12 for 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 Measures 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 Measures 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. ~~Effects on cultural and paleontological resources would be minimized with implementation of mitigation measures. Overall, impacts of Mitigation Measure AES-6a would be less than significant.~~

~~31.5.2.23~~31.5.2.25 Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

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 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. 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. ~~Effects on cultural and paleontological resources would be minimized with implementation of mitigation measures. Impacts related to disruption of power and utilities would be minimized with implementation of environmental commitments and mitigation measures. Overall, impacts of Mitigation Measure UT-6c would be less than significant.~~

~~31.5.2.24~~31.5.2.26 Mitigation Measure AQ-9: Implement Measures to Reduce Re-Entrained Road Dust and Recept~~ion~~or 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., disturbances of natural communities would be minimized by implementing Avoidance and Minimization Measures.

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.

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 Measure AQ-2 through AQ-4, and AQ-24, as well as AMMs and environmental commitments, as described in Section 31.5.1.2 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 Hazardous Material Management Plans (HMMPs), Spill Prevention, Containment, and Countermeasure Plans (SPCCPs), and Stormwater Pollution Prevention Plans (SWPPPs) (described in Appendix 3B, *Environmental Commitments*), 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 BDCP 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 BDCP 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~~adverse~~.