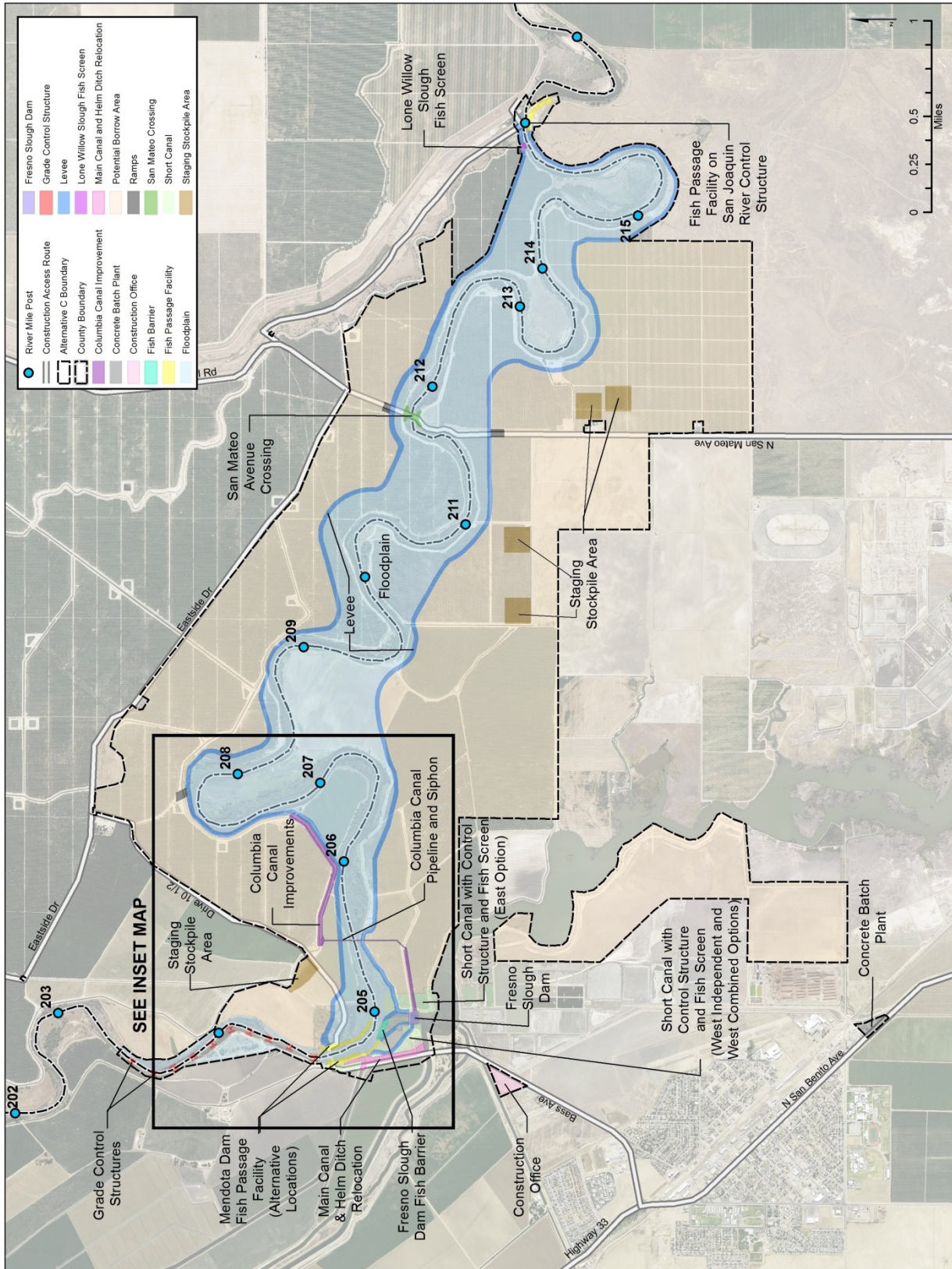
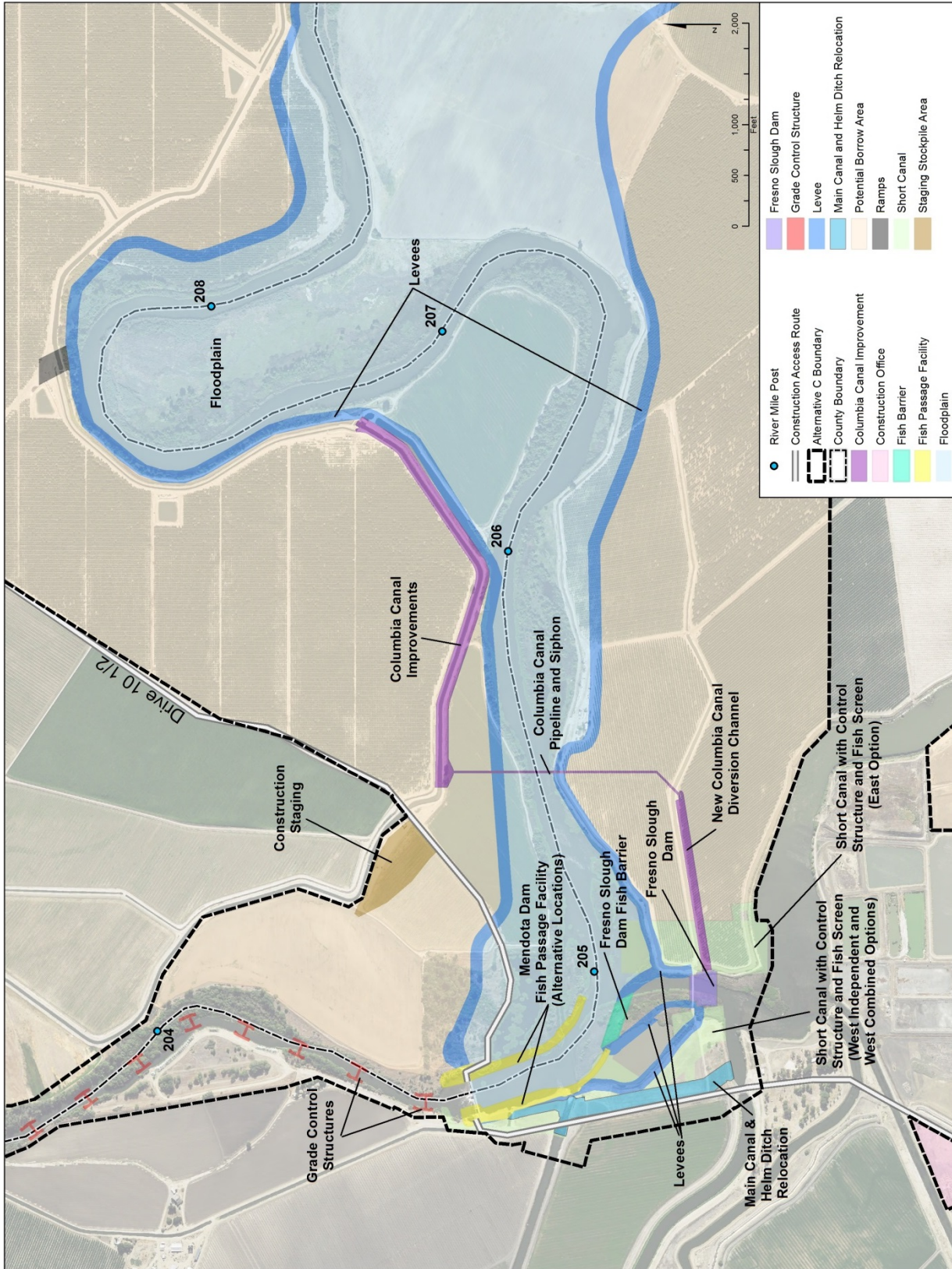


Figure S-7. Plan View of Alternative C
(Fresno Slough Dam with Narrow Floodplain and Short Canal)



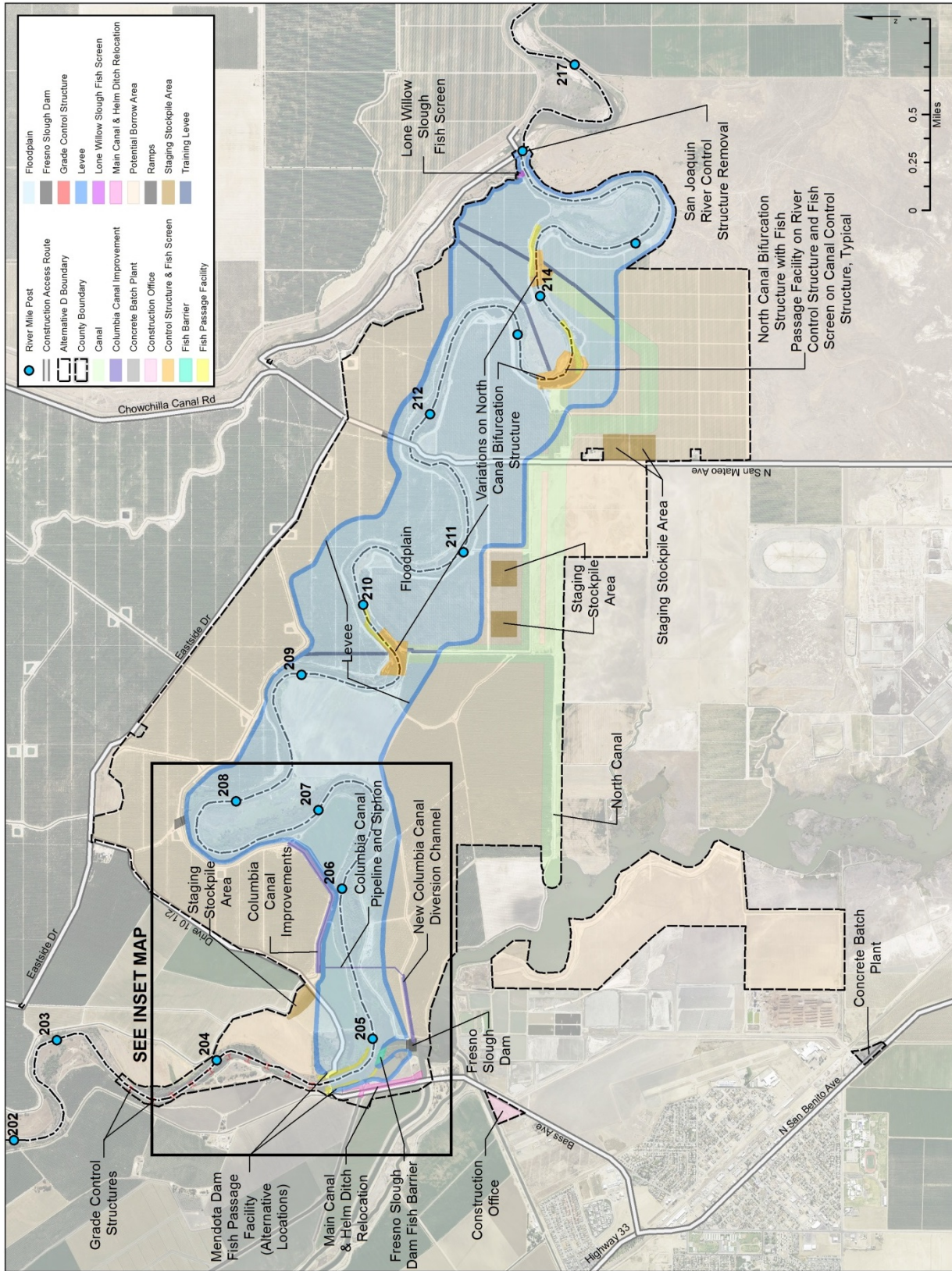
ALTERNATIVES
IN THIS EIS/R

Figure S-8. Inset Map of Alternative C
(Fresno Slough Dam with Narrow Floodplain and Short Canal)



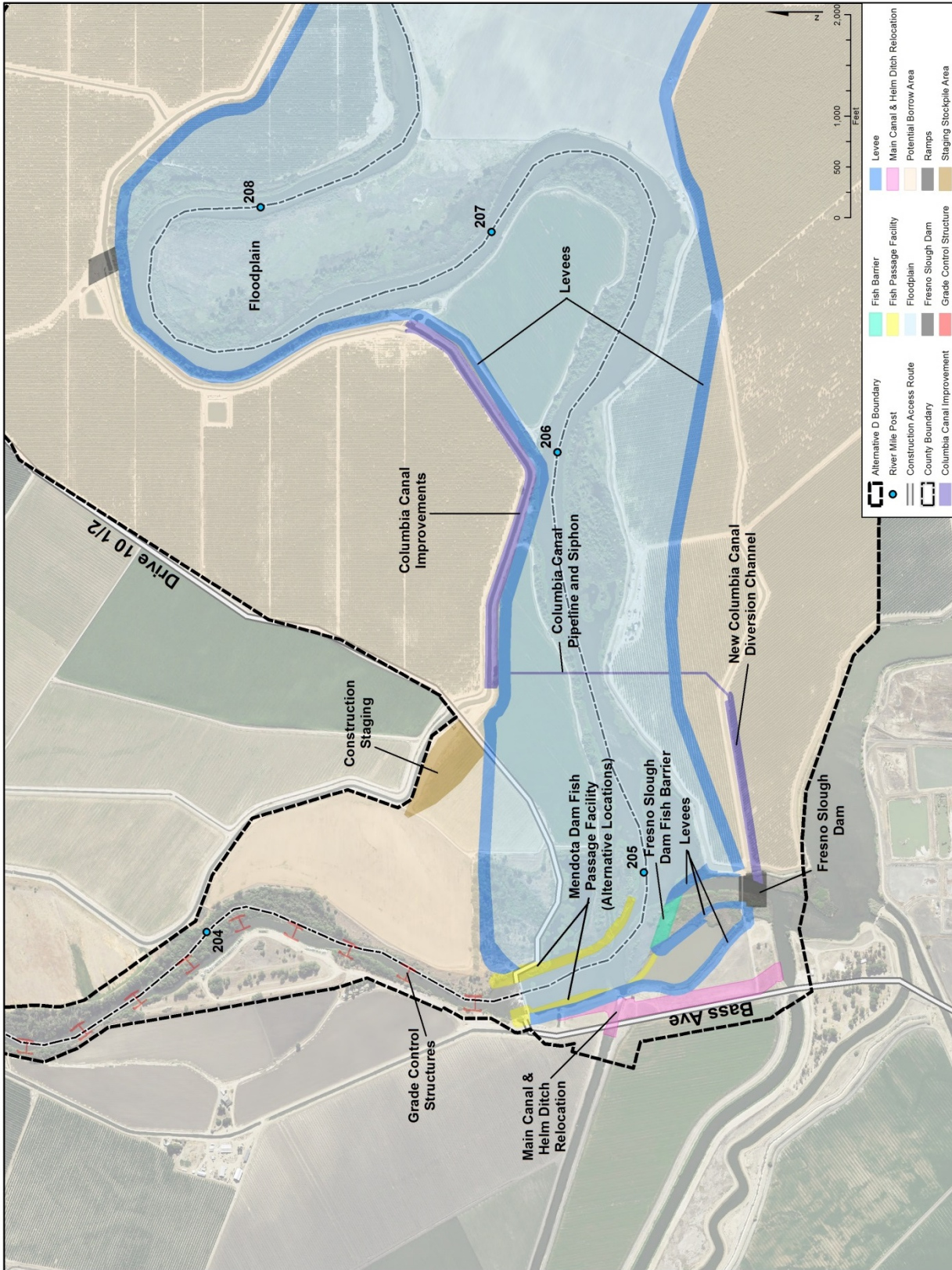
ALTERNATIVES
IN THIS EIS/R

Figure S-9. Plan View of Alternative D
(Fresno Slough Dam with Wide Floodplain and North Canal)



ALTERNATIVES
IN THIS EIS/R

Figure S-10. Inset Map of Alternative D
(Fresno Slough Dam with Wide Floodplain and North Canal)



ALTERNATIVES
IN THIS EIS/R

- Removal of Existing Levees – Removal of portions of the existing levees is included and designed to expand the inundation area of the floodplain out to the proposed levees and improve connectivity between the river channel and proposed floodplain. The locations of existing levee removal would be based upon the hydraulic performance of the channel and floodplain. In certain locations, however, highly desirable existing vegetation (native and sensitive vegetation communities that can serve as seed banks for future vegetation communities) can be found on the existing levees. Where hydraulic performance and connectivity of the floodplain would not be negatively affected, portions of the existing levees with highly desirable vegetation would remain in place.
- Floodplain Grading – Floodplain and channel grading can provide benefits to salmon and other native fish by allowing inundation to occur at lower flows, by distributing suitable rearing habitats further into the floodplain, by connecting rearing habitat to primary production areas (shallow water habitat), by providing escape routes during receding flows, and by confining flows to a deeper, narrower channel to limit temperature increases.
- Infrastructure for Fish Monitoring – The designs for control structures, fish passage facilities, and fish screens include security fences and gates, mounting hardware, and electrical supply in order to conduct fish monitoring activities. The fish monitoring activities themselves are not included in this Project, and will be addressed in subsequent environmental analysis, as appropriate.
- Existing Infrastructure Relocations or Floodproofing – ~~Some e~~Existing infrastructure such as groundwater wells, pumps, electrical and gas distribution lines, water pipelines, and canals ~~is~~ located in the Project area ~~and~~ would require relocation or floodproofing to protect them from future Restoration Flows and increased floodplain area.
- Construction Access – Access for vehicles carrying materials, equipment, and personnel to and from the construction area would be provided via several existing roadways in the Project vicinity. Improvements may be required to upgrade roadways, pavements, and crossings for anticipated construction traffic and loads, provide adequate turning radii and site distances, and to control dust on non-paved roads.
- Revegetation of Temporary Disturbance Areas – Areas temporarily disturbed during construction would be restored to their previous contours, if feasible, and then seeded with a native vegetation seed mixture to prevent soil erosion. Some areas, such as borrow areas, may not be feasible to restore previous contours, but these areas would be smoothed and seeded.
- Land Acquisition – Additional lands would be acquired to accommodate the floodplain, levees, bypass channel, structures, and borrow. The amount of land acquisition varies with alternative.
- Phased Implementation – The Project ~~may utilize~~ would use a phased approach to implementation of the selected alternative. Phased implementation would involve building selected components of the Project in separate construction phases, allowing Project funding to be secured over time.



Reach 2B Riparian Corridor

This phasing refers only to the sequence in which the actual Project components would be constructed.

In addition to these elements, the following activities are also common to all Action Alternatives:

- Operations and Maintenance – The Project includes long-term operations and maintenance of the proposed facilities and features.
- Monitoring Activities – Monitoring activities in Reach 2B could include flow monitoring, groundwater level monitoring, aerial and topographic surveys, vegetation surveys, sediment mobilization and monitoring, and passage and screen effectiveness.



Field Surveys in Reach 2B



Vegetation Surveys in Reach 2B

Environmental Commitments

Conservation Strategy

As part of SJRRP implementation, a comprehensive strategy for the conservation of listed and sensitive species and habitats has been prepared, and will be implemented in coordination with USFWS, NMFS, ~~and~~ DFW and other regulatory agencies, as appropriate. The goals of the strategy are as follows:

- Conserve riparian vegetation and waters of the United States, including wetlands
- Control and manage invasive species
- Conserve special-status species

The SJRRP's Conservation Strategy includes conservation measures for biological resources that may be affected by Project actions (listed in Table S-2). These measures are ~~the same as~~ based on those presented in the PEIS/R (SJRRP 2011a, pages 2-55 to 2-79) and those detailed in Section 2.2.10 of this EIS/R.



Elderberry in Reach 2B

Table S-2. Conservation Measures for Biological Resources

IDENTIFIER	CONSERVATION MEASURE
VELB	VALLEY ELDERBERRY LONGHORN BEETLE
VELB-1	Avoid and minimize effects to species
VELB-2	Compensate for temporary or permanent loss of habitat
BNLL	BLUNT-NOSED LEOPARD LIZARD
BNLL-1	Avoid and minimize effects to species
BNLL-2	Compensate for temporary or permanent loss of habitat or species
PLANTS	OTHER SPECIAL-STATUS PLANTS
PLANTS-1	Avoid and minimize effects to special-status plants
GGS	GIANT GARTER SNAKE
GGS-1	Avoid and minimize loss of habitat for giant garter snake
GGS-2	Compensate for temporary or permanent loss of habitat
WPT	WESTERN POND TURTLE
WPT-1	Avoid and minimize loss of individuals
EAGLE	BALD EAGLE AND GOLDEN EAGLE
EAGLE-4	Avoid and minimize effects to bald and golden eagles (as defined in the Bald and Golden Eagle Protection Act)
SWH	SWAINSON'S HAWK
SWH-1	Avoid and minimize impacts to Swainson's Hawk
SWH-2	Compensate for loss of nest trees and foraging habitat
RAPTOR	OTHER NESTING RAPTORS
RAPTOR-1	Avoid and minimize loss of individual raptors
RAPTOR-2	Compensate for loss of nest trees
RNB	RIPARIAN NESTING BIRDS: LEAST BELL'S VIREO
RNB-1	Avoid and minimize effects to species
RNB-2	Avoid, minimize, and compensate for effects to species
MBTA	OTHER BIRDS PROTECTED BY THE MIGRATORY BIRD TREATY ACT
MBTA-1	Avoid and minimize effects to species
TRI	TRICOLORED BLACKBIRD
<u>TRI-1</u>	<u>Avoid Nesting Colonies</u>
SWA	CLIFF SWALLOWS
<u>SWA-1</u>	<u>Avoid Nesting Colonies</u>
BRO	BURROWING OWL
BRO-1	Avoid loss of species individuals
BRO-2	Minimize impacts to species
BAT	SPECIAL-STATUS BATS
BAT-1	Avoid and minimize loss of species individuals
BAT-2	Compensate for loss of habitat
FKR	FRESNO KANGAROO RAT
FKR-1	Avoid and minimize effects to species
FKR-3	Compensate for temporary or permanent loss of habitat or species
SJKF	SAN JOAQUIN KIT FOX
SJKF-1	Avoid and minimize effects to species
PL	PACIFIC LAMPREY

Table S-2. Conservation Measures for Biological Resources

IDENTIFIER	CONSERVATION MEASURE
PL-1	Avoid and minimize effects to species
RHSNC	RIPARIAN HABITAT AND OTHER SENSITIVE NATURAL COMMUNITIES
RHSNC-1	Avoid and minimize loss of riparian habitat and other sensitive natural communities
RHSNC-2	Compensate for loss of riparian habitat and other sensitive natural communities
WUS	WATERS OF THE UNITED STATES/WATERS OF THE STATE
WUS-1	Identify and quantify wetlands and other waters of the United States
WUS-2	Obtain permits and compensate for any loss of wetlands and other waters of the United States/waters of the State
INV	INVASIVE PLANTS
INV-1	Implement the Invasive Vegetation Monitoring and Management Plan
CP	CONSERVATION PLANS
CP-1	Remain consistent with approved conservation plans
CP-2	Compensate effects consistent with approved conservation plans
GS	SOUTHERN DISTINCT POPULATION SEGMENT OF NORTH AMERICAN GREEN STURGEON
GS-1	Avoid and minimize loss of habitat and individuals
CVS	CENTRAL VALLEY STEELHEAD
CVS-1	Avoid loss of habitat and risk of take of species
CVS-2	Minimize loss of habitat and risk of take of species
SRCS	CENTRAL VALLEY SPRING-RUN CHINOOK SALMON
SRCS-1	Avoid and minimize loss of habitat and individuals
EFH	ESSENTIAL FISH HABITAT (PACIFIC SALMONIDS AND STARRY FLOUNDER)
EFH-1	Avoid loss of habitat and risk of take of species
EFH-2	Minimize loss of habitat and risk of take from implementation of construction activities



Ash-throated Flycatcher in Reach 2B



Minimize Flood Risk from ~~Interim and~~ Restoration Flows

The SJRRP's strategy for minimizing flood risk is to limit the maximum downstream extent and rate of ~~Interim and~~ Restoration flows for the given reach to then-existing channel capacities. This strategy is incorporated by reference from the PEIS/R (SJRRP 2011a, pages 2-22 through 2-28) and summarized in Section 2.2.10 of this EIS/R. These Program-wide commitments are documented in the PEIS/R Record of Decision (ROD), and no new Project-level actions to minimize flood risk from ~~Interim and~~ Restoration flows are being proposed.



Reach 2B during Interim Flows

Areas of Known Controversy and Issues to be Resolved

State CEQA Guidelines section 15123, subdivision (b), requires that an Executive Summary identify “areas of controversy known to the lead agency including issues raised by agencies and the public.” The alternatives development process provided opportunities for early stakeholder involvement and input. Primary stakeholders include Federal, State, and local agencies, landowners, the Restoration Administrator and Technical Advisory Committee of the SJRRP, non-governmental organizations, and the public. Comments received during the scoping process include topics related to agriculture, air quality, canal distribution systems, economic development, flood control and levees, groundwater and wells, wells, Interim Flows, surface water, traffic, water quality, wetland and riparian environment, SJRRP actions, and the construction schedule. Areas of known controversy include the potential for groundwater seepage to occur in agricultural areas outside of the floodplain, the potential for future long-term recreational development of the Project area, and the need for a Mendota Pool Fish Screen and Reach 3 Fish Barrier. Groundwater seepage will be addressed during levee design and through the SJRRP’s seepage management activities, which are being analyzed in separate environmental analysis, as appropriate (potential groundwater impacts of the Project are analyzed and disclosed in this EIS/R and mitigation measures are discussed as appropriate). Although recreational development is not within the scope of the Project, portage facilities around Project structures would include signage regarding safety and trespass issues. The Mendota Pool Fish Screen and Reach 3 Fish Barrier are analyzed in the Project alternatives; The Record of Decision for this Project will describe the project elements that Reclamation intends to implement as the selected alternative for the Project. There are no remaining issues to be resolved.



Red-tailed Hawk in Reach 2B

Consensus-Based Alternative Selection

A meeting was held on January 29, 2013, ~~in order~~ to introduce the consensus-based alternative concept and approach to ~~the~~ adjacent landowners, canal companies, irrigation districts, levee districts, cities, and the Settling Parties. The consensus-based alternative approach gave these entities the opportunity to provide input on the Project alternatives, and their input was considered during the identification of the preferred alternative. Following several meetings with the individuals and groups listed above, Reclamation and CSLC identified a preferred alternative, Alternative B, based on the input received on the Action Alternatives. ~~The preferred alternative identified in this EIS/R is preliminary, and a final alternative will not be selected for implementation until consideration of comments received on the public draft EIS/R.~~ The alternative selected for implementation will be articulated in the Record of Decision, which will be completed no less than 30 days following the release of the final EIS/R, and in the findings and other documents completed in accordance with CEQA.



Orchard in bloom in the San Joaquin Valley



Summary and Comparison of Impacts and Mitigation Measures

The impact conclusions and associated mitigation measures for the 21 resource topics evaluated in this EIS/R are summarized Tables S-3 and S-4. Impacts with the potential to result in a cumulatively considerable contribution to a significant cumulative impact are shown in Table S-5. Most action alternatives have the same impact level of significance before and after mitigation. For these impacts, Table S-3 below compares the No-Action alternative to the Action Alternatives together.

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
AIR QUALITY				
AQ-1: Create Excess Amounts of Construction Related Criteria Air Pollutants that Exceed SJVAPCD Thresholds of Significance or Cause or Contribute to Exceedances of the AAQS	No-Action	No Impact	--	No Impact
	Action Alternatives	Significant	AQ-1A: Reduce Criteria Exhaust Emissions from Construction Equipment AQ-1B: Reduce Criteria Exhaust Emissions from Material Hauling Vehicles AQ-1C: Offset Project Construction Emissions Through a SJVAPCD Voluntary Emission Reduction Agreement	LTS
AQ-2: Conflict with Applicable Plans or Policies Related to Air Quality	No-Action	No Impact	--	No Impact
	Action Alternatives	Significant	AQ-2: Reduce or Offset Project Emissions	LTS
AQ-3: Expose Sensitive Receptors to Substantial Air Pollutants Associated with Construction	No-Action	No Impact	--	No Impact
	Action Alternatives	Significant	AQ-3A: Reduce Diesel Particulate Matter Emissions from Construction Equipment AQ-3B: Reduce Diesel Particulate Matter Emissions from Material Hauling Vehicles	SU LTS
AQ-4: Create Excess Amounts of Operational Related Criteria Air Pollutants that Exceed SJVAPCD Thresholds of Significance or Cause or Contribute to Exceedances of the AAQS	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
AQ-5: Expose Sensitive Receptors to Substantial Air Pollutants Associated with Operation	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
AQ-6: Create Objectionable Odors from Construction	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
AQ-7: Create Objectionable Odors from Operation	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
BIOLOGICAL RESOURCES - FISHERIES				
AQUA-1: Effects on Fish Habitat and Passage for Local Fish Populations	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
AQUA-2: Effects on Salmonid Rearing Habitat	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
AQUA-3: Effects on Upstream Migration of Adult Salmonids	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
AQUA-4: Effects on Downstream Migration of Juvenile Salmonids	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
AQUA-5: Effects of In-Channel Construction Activities on Fish Species Within Reach 2B	No-Action	No Impact	--	No Impact
	Action Alternatives	--	<u>Essential Fish Habitat (Pacific Salmonids)</u> EFH-1: Avoid Loss of Habitat and Risk of Take of Species EFH-2: Minimize Loss of Habitat and Risk of Take from Implementation of Construction Activities <u>Central Valley Steelhead</u> CVS-1: Avoid Loss of Habitat and Risk of Take of Species CVS-2: Minimize Loss of Habitat and Risk of Take of Species <u>Pacific Lamprey</u> PL-1: Avoid and Minimize Effects to Species <u>Southern Distinct Population Segment of North American Green Sturgeon</u> GS-1: Avoid and Minimize Loss of Habitat and Individuals <u>Central Valley Spring-Run Chinook Salmon</u> SRCS-1: Avoid and Minimize Loss of Habitat and Individuals	LTS

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
AQUA-6: Effects of Floodplain Use By Agriculture on Fish Species Within Reach 2B	No-Action	No Impact	--	No Impact
	A	LTS	--	LTS
	B	LTS	--	LTS
	C	No Impact	--	No Impact
	D	LTS	--	LTS
AQUA-7: Effects on Occurrence of Native Fish Species Within Reach 2B	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
AQUA-8: Effects on Predation of Juvenile Salmonids and Native Fish Species	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
AQUA-9: Effects on the Aquatic Food Web within Reach 2B	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
BIOLOGICAL RESOURCES - VEGETATION				
VEG-1: Substantially Alter Riparian Habitat and Other Sensitive Communities during Construction	No-Action	No impact	--	No impact
	Action Alternatives	--	<u>Riparian Habitat and Other Sensitive Natural Communities</u> RHSNC-1: Avoid and Minimize Loss of Riparian Habitat and Other Sensitive Natural Communities RHSNC-2: Compensate for Loss of Riparian Habitat and Other Sensitive Natural Communities <u>Invasive Plants</u> INV-1: Implement the Invasive Vegetation Monitoring and Management Plan	LTS
VEG-2: Substantially Alter Riparian Habitat and Other Sensitive Communities during the Operations and Maintenance Phase of the Project	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
VEG-3: Facilitate Increase in Distribution and Abundance of Invasive Plants in the Project Area	No-Action	--	<u>Invasive Plants</u> PEIS/R INV-1: Implement the Invasive Vegetation Monitoring and Management Plan	LTS
	Action Alternatives	--	<u>Invasive Plants</u> INV-1: Implement the Invasive Vegetation Monitoring and Management Plan	LTS
VEG-4: Conflict with Provisions of Local Plans in the Project Area	No-Action	No Impact	--	No Impact
	Action Alternatives	Beneficial	--	Beneficial

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
BIOLOGICAL RESOURCES - WILDLIFE				
WILD-1: Project Effects on Special-Status Invertebrate Species	No-Action	Beneficial	--	Beneficial
	Action Alternatives	--	<u>Valley Elderberry Longhorn Beetle</u> VELB-1: Avoid and Minimize Effects to Species VELB-2: Compensate for Temporary or Permanent Loss of Habitat	LTS
WILD-2: Project Effects on Special-Status Reptile Species	No-Action	LTS	--	LTS
	Action Alternatives	--	<u>Blunt-Nosed Leopard Lizard</u> BNLL-1: Avoid and Minimize Effects to Species BNLL-2: Compensate for Temporary or Permanent Loss of Habitat or Species <u>Giant Garter Snake</u> GGS-1: Avoid and Minimize Loss of Habitat for Giant Garter Snake GGS-2: Compensate for Temporary or Permanent Loss of Habitat <u>Invasive Plants</u> INV-1: Implement the Invasive Vegetation Monitoring and Management Plan	LTS
WILD-3: Project Effects on	No-Action	Beneficial	--	Beneficial

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
Special-Status Bird Species	Action Alternatives	--	<p><u>Other Birds Protected by the Migratory Bird Treaty Act</u> MBTA-1: Avoid and Minimize Effects to Species</p> <p><u>Other Nesting Raptors</u> RAPTOR-1: Avoid and Minimize Loss of Individual Raptors RAPTOR-2: Compensate for Loss of Nest Trees</p> <p><u>Riparian Nesting Birds (Least Bell's Vireo)</u> RNB-1: Avoid Effects to Species RNB-2: Avoid, Minimize, and Compensate for Effects to Species Swainson's Hawk SWH-1: Avoid and Minimize Impacts to Swainson's Hawk SWH-2: Compensate for Loss of Nest Trees and Foraging Habitat</p> <p><u>Tricolor Blackbird</u> TRI-1: <u>Avoid Nesting Colonies</u> Cliff Swallows SWA-1: <u>Avoid Nesting Colonies</u> Burrowing Owl BRO-1: Avoid Loss of Species BRO-2: Minimize Impacts to Species</p> <p><u>Invasive Plants</u> INV-1: Implement the Invasive Vegetation Monitoring and Management Plan</p>	LTS
WILD-4: Project Effects on Special-Status Mammal Species	No-Action	Beneficial	--	Beneficial
	Action Alternatives	--	<p><u>Special-Status Bats</u> BAT-1: Avoid and Minimize Loss of Species BAT-2: Compensate for Loss of Habitat</p> <p><u>Fresno Kangaroo Rat</u> FKR-1: Avoid and Minimize Effects to Species FKR-3: Compensate for Temporary or Permanent Loss of Habitat or Species San Joaquin Kit Fox SJKF-1: Avoid and Minimize Effects to Species</p>	LTS
WILD-5: Project Effects on Wildlife Movement Corridors	No-Action	Beneficial	--	Beneficial
	Action Alternatives	--	<p><u>Riparian Habitat and Other Sensitive Natural Communities</u> RHSNC-1: Avoid and Minimize Loss of Riparian Habitat and Other Sensitive Natural Communities RHSNC-2: Compensate for Loss of Riparian Habitat and Other</p>	LTS

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
			Sensitive Natural Communities <u>Essential Fish Habitat (Pacific Salmonids)</u> EFH-1: Avoid Loss of Habitat and Risk of Take of Species EFH-2: Minimize Loss of Habitat and Risk of Take from Implementation of Construction Activities	
WILD-6: Long-term Habitat Improvement in Reach 2B	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS				
CC-1: Impacts from GHG Emissions Associated with Project Construction	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
CC-2: Impacts from GHG Emissions Associated with Project Operation	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
CC-3: Changes in Land Use That Result in a Net Increase in GHG Emissions	No-Action	No Impact	--	No Impact
	Action Alternatives	Beneficial	--	Beneficial
CULTURAL RESOURCES				
CUL-1: Effects on Archaeological Resources from Ground Disturbing Activities during Construction	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	CUL-1A: Comply with Section 106 of the NHPA or Equivalent CUL-1B: Conduct Subsurface Testing and/or Archaeological Monitoring in Proximity to Identified Sites or Areas of Sensitivity CUL-1C: Halt Work in the Event of An Archaeological Discovery CUL-1D: Plan an Intentional Site Burial Preservation in Place CUL-1E: Avoid Soil Borrowing in the Vicinity Known Archaeological Resources	LTS
CUL-2: Effects on Historical Properties Listed or Eligible for Listing in the National or California Register	No-Action	No Impact	--	No Impact
	A	No Impact	--	No Impact
	B	No Impact	--	No Impact
	C	PS	CUL-3: Follow the Secretary of the Interior's Standards for the Treatment of Historic Properties	LTS
	D	PS		LTS
CUL-3: Effects on Cultural Resources during the Operations and Maintenance Phase of the Project	No-Action	PS	--	PS
	Action Alternatives	LTS	--	LTS
GEOLOGY AND SOILS				
GEO-1: Effects on Mineral and	No-Action	No Impact	--	No Impact



Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
Soils Resources	Action Alternatives	LTS	--	LTS
GEO-2: Soil Erosion Effects	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
GEO-3: Adverse Soil Conditions	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
GEO-4: Adverse Seismicity Effects	No-Action	No Impact	--	No Impact
	Action Alternatives	No Impact	--	No Impact
HYDROLOGY - FLOOD MANAGEMENT				
FLD-1: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding	No-Action	PS	--	PS
	Action Alternatives	LTS	--	LTS
FLD-2: Substantially Reduce Opportunities For Levee and Flood System Facilities Inspection and Maintenance	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
FLD-3: Substantially Alter Existing Drainage Patterns or Substantially Increase the Rate or Amount of Surface Runoff in a Manner Which Would Result in Flooding On- or Off-Site	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
FLD-4: Placement of Structures Within a 100-Year Flood Hazard Area that Would Adversely Impede or Redirect Flood Flows	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
HYDROLOGY - GROUNDWATER				
GRW-1: Temporary Construction-Related Effects on Groundwater Quality	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	GRW-1A: Prepare and Implement a Stormwater Pollution Prevention Plan GRW-1B: Prepare and Implement a Construction Groundwater Management Plan	LTS
GRW-2: Long-term Changes in Groundwater Quality	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
GRW-3: Changes in Groundwater Levels	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
GRW-4: Changes in Groundwater Recharge	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
HYDROLOGY - SURFACE WATER RESOURCES AND WATER QUALITY				
GEM-1: Substantially Altering the Existing Drainage Pattern, Including Alteration of the Course of the River, in a Manner Which Would Result in Substantial On- or Off-Site Erosion	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
GEM-2: Increased Aggradation or Degradation that Causes a Substantial Increase in Channel Instability within Reach 2B.	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
GEM-3: Increases in Lateral Erosion that Could Damage Existing and/or Proposed Levees or Other Infrastructure within Reach 2B	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
GEM-4: Short- and Long-Term Increases in Sediment Load that Could Cause Substantial Increases in Channel Instability in Downstream Reaches	No-Action	LTS	--	No Impact
	Action Alternatives	LTS	--	LTS
SWQ-1: Construction-Related Effects on Water Quality	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	SWQ-1: Develop & Implement SWPPP	LTS
SWQ-2: Long-Term Effects on Water Quality from Mobilization of Mendota Pool Sediments	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
SWQ-3: Long-Term Effects on Water Quality from Floodplain Inundation of Prior Agricultural Soils	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	SWG-3: Minimize Use of Pesticide and Herbicide Contaminated Soil	LTS
SWQ-4: Long-Term Effects on Water Quality from Agricultural Practices Within the New Floodplain	No-Action	No Impact	--	No Impact
	A	LTS	--	LTS
	B	LTS	--	LTS
	C	No Impact	--	No Impact
	D	LTS	--	LTS
HYDROLOGY - WETLANDS AND AQUATIC RESOURCES				
WET-1: Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands or Other Waters during Construction	No-Action	No Impact	--	No Impact
	Action Alternatives	--	<u>Waters of the United States/Waters of the State</u> WUS-1: Identify and Quantify Wetlands and Other Waters of the United States WUS-2: Obtain Permits and Compensate for Any Loss of Wetlands and Other Waters of the	LTS



Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
			United States/Waters of the State	
WET-2: Fill, Fragment, Isolate, Divert, or Substantially Alter Potentially Jurisdictional Wetlands or Other Waters during the Operations and Maintenance Phase	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
WET-3: Conflict with Provisions of Local or Regional Plans Regarding Conservation Lands	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
LAND USE PLANNING AND AGRICULTURAL RESOURCES				
LU-1: Removal of Land from Agricultural Production	No-Action	No Impact	--	No Impact
	Action Alternatives	Significant	LU-1: Preserve Agricultural Productivity of Designated Farmland to the Extent Possible	SU
LU-2: Conversion of Designated Farmland to Non-Agricultural Uses	No-Action	No Impact	--	No Impact
	Action Alternatives	Significant	LU-2: Preserve Agricultural Productivity of Designated Farmland to the Extent Possible	SU
LU-3: Conflict with Williamson Act Contracts	No-Action	No Impact	--	No Impact
	Action Alternatives	Significant	LU-3: Preserve Agricultural Productivity of Designated Farmland to the Extent Possible	SU
LU-4: Degradation of Agricultural Land Productivity due to Seepage	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
LU-5: Conflict with Applicable Land Use Plans Regarding Agricultural Lands	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	LU-5: Notify County Planning Agencies of General Plan and Zoning Ordinance Inconsistencies	LTS
LU-6: Diminishment of Agricultural Production by Increased Disease	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
NOISE AND VIBRATION				
NOI-1: Exposure of Sensitive Receptors to Temporary Construction Noise	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	NOI-1: Reduce Temporary and Short-Term Noise Levels from Construction-Related Equipment Near Sensitive Receptors	LTS
NOI-2: Exposure of Sensitive Receptors to Temporary Construction Vibration	No-Action	No Impact	--	No Impact
	A	LTS	--	LTS
	B	LTS	--	LTS
	C	PS	NOI-2: Minimize Vibration Related Effects	LTS
D	PS	LTS		
NOI-3: Increased Off-Site Vehicular Traffic Noise Due to Construction Related Trips	No-Action	LTS	--	LTS
	Action Alternatives	PS	NOI-3: Reduce Temporary Noise Levels from Construction-Related Traffic Increases Near Sensitive Receptors	LTS

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
NOI-4: Noise Effects Due to Operations and Maintenance Activities	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
PALEONTOLOGY				
PAL-1: Possible Damage to or Destruction of Unique Paleontological Resources	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	PAL-1: Stop Work If Paleontological Resources Are Encountered During Earthmoving Activities and Implement Recovery Plan	LTS
PUBLIC HEALTH AND HAZARDOUS MATERIALS				
HAZ-1: Creation of a Substantial Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials or through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
HAZ-2: Increased Exposure to Hazardous Materials of People Residing or Working in the Project Area	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	HAZ-2A: Follow General Hazardous Materials Guidelines HAZ -2B: Properly Dispose of Hazardous Building Components HAZ -2C: Properly Dispose of Pesticides HAZ -2D: Properly Manage Discolored or Odiferous Soils HAZ -2E: Properly Remove Underground Storage Tanks	LTS
HAZ-3: Creation of a Substantial Hazard from Disturbance of Known Hazardous Material Sites	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	HAZ-3: Minimize Disturbance to Known Hazardous Material Site	LTS
HAZ-4: Creation of a Substantial Hazard from Mobilization of Soil Contaminants on the Floodplain	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	HAZ-4: Minimize Use of Pesticide and Herbicide Contaminated Soil	LTS
HAZ-5: Exposure of People to Increased Risk of Diseases	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	HAZ-5A: Minimize Exposure to Potential West Nile Virus Vectors HAZ-5B: Minimize Exposure to Potential Hantavirus Vectors HAZ-5C: Minimize Exposure to Valley Fever	LTS
HAZ-6: Creation of a Substantial Hazard from Decommissioned Wells	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	HAZ-6: Minimize the Disturbance of Idle or Abandoned Wells	LTS



Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
HAZ-7: Increased Hazardous Emissions or Handling of Hazardous Materials, Substances, or Wastes within One-Quarter Mile of a School	No-Action	No Impact	--	No Impact
	Action Alternatives	No Impact	--	No Impact
HAZ-8: Exposure of People or Structures to a Substantial Risk of Loss, Injury, or Death involving Wildland Fires	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
HAZ-9: Creation of a Substantial Hazard in Areas Designated by Airport Land Use Plans, within 2 miles of an Airport, or in the Vicinity of a Private Airstrip	No-Action	No Impact	--	No Impact
	Action Alternatives	No Impact	--	No Impact
HAZ-10: Impairment of the Implementation or Physical Interference with an Adopted Emergency Response or Emergency Evacuation Plan	No-Action	No Impact	--	No Impact
	Action Alternatives	No Impact	--	No Impact
RECREATION				
REC-1: Construction-Related Effects on Recreation Opportunities and Facilities	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	REC-1: Minimize Construction Effects on Recreation Uses	LTS
REC-2: Permanent Displacement of Existing Recreation Uses and Access Restrictions from Project Facilities	No-Action	No Impact	--	No Impact
	Action Alternatives	PS	REC-2: Establish Boat Portage Facilities Around Project Facilities	LTS
REC-3: Effects on Recreational Angling at Project Structures	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
REC-4: Effects of Aquatic Habitat Improvements on Recreational Angling	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
REC-5: Effects of Increased Flows on Recreation Opportunities and Facilities	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
REC-6: Conflicts with Recreation Goals and Policies	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
SOCIOECONOMIC AND ECONOMICS				
ECON-1: Change in Agricultural Production Values	No-Action	LS	--	LS
	Action Alternatives	LS	--	LS
ECON-2: Effects on the Regional Economy from Changes in Agricultural Production	No-Action	LS	--	LS
	Action Alternatives	LS	--	LS
ECON-3: Effects on the	No-Action	No Impact	--	No Impact

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
Regional Economy from Construction and Operations and Maintenance Spending	Action Alternatives	Beneficial	--	Beneficial
ECON-4: Effects on Local Tax Revenues	No-Action	No Impact	--	No Impact
	Action Alternatives	LS	--	LS
ECON-5: Change in Population Growth and Housing Demand	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
ECON-6: Losses to the Lower San Joaquin Valley Levee District	No-Action	LS	--	LS
	Action Alternatives	LS	--	LS
TRANSPORTATION AND TRAFFIC				
TRA-1. Potential to Cause an Increase in Traffic which is Substantial in Relation to the Existing Traffic Load and Capacity of the Roadway System	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
TRA-2. Potential to Exceed, Either Individually or Cumulatively, a LOS Standard Established by the County Congestion Management Agency for Designated Roads or Highways	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
TRA-3. Potential to Substantially Increase Hazards to a Design Feature or Increase Incompatible Uses	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
TRA-4. Potential to Result in Inadequate Emergency Access	No-Action	PSU	--	PSU
	A	PS	TRA-4A: Provide Temporary Roadway and Crossing at San Mateo Avenue	SU
	B	PS	TRA-4B: Use Construction Sequencing to Provide Continuous Emergency Access at Drive 10 ½	SU
	C	PS	TRA-4A: Provide Temporary Roadway and Crossing at San Mateo Avenue	SU
	D	PSU	--	PSU
UTILITIES AND SERVICE SYSTEMS				
UTL-1: Increased Need for New or Physically Altered Governmental Facilities due to Reduced Emergency Access and Increased Emergency Response Times	No-Action	LTS	--	LTS
	Action Alternatives	LTS	--	LTS
UTL-2: Potential For Generation of Solid Waste in	No-Action	No Impact	--	No Impact
	Action	No Impact	--	No Impact

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
the Project Area in Excess of Permitted Landfill Capacity	Alternatives			
UTL-3: Potential For Noncompliance with Federal, State, and Local Statutes and Regulations Related to Solid Waste	No-Action	No Impact	--	No Impact
	Action Alternatives	No Impact	--	No Impact
UTL-4: Potential For Insufficient Water Supply Resources in the Project Area	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
UTL-5: Potential for New or Physically Altered Utility Infrastructure to Conflict With Any Applicable Land Use Plan, Policy, or Regulation	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
UTL-6: Effects on Energy Resources	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
UTL -7: Reduced Capacity of Existing Operational Diversion Facilities	No-Action	No Impact	--	No Impact
	Action Alternatives	LTS	--	LTS
VISUAL RESOURCES				
VIS-1: Construction Related Effects on the Visual Quality of the Project Site and Its Surroundings	No-Action	No impact	--	No impact
	Action Alternatives	PS	VIS-1: Minimize Visual Disruption from Construction Activities	LTS
VIS-2: Long-term Changes in the Visual Character or Quality of the San Mateo Avenue Crossing	No-Action	Beneficial	--	Beneficial
	Action Alternatives	Beneficial	--	Beneficial
VIS-3: Long-term Changes in the Visual Character or Quality of the Mendota Pool Park	No-Action	No impact	--	No impact
	A	No impact	--	No impact
	B	No impact	--	No impact
	C	LTS	--	LTS
VIS-4: Long-term Changes in the Visual Character or Quality of the Mendota Dam Area	D	LTS	--	LTS
	No-Action	No impact	--	No impact
	A	No impact	--	No impact
	B	No impact	--	No impact
VIS-5: Long-term Changes in the Visual Character or Quality of the Bass Avenue Residential Area	C	LTS	--	LTS
	D	LTS	--	LTS
	No-Action	No impact	--	No impact
	A	LTS	--	LTS
VIS-6: Substantial Changes in Light or Glare	B	LTS	--	LTS
	C	No impact	--	No impact
	D	No impact	--	No impact
	No-Action	No Impact	--	No Impact
VIS-6: Substantial Changes in Light or Glare	Action Alternatives	PS	VIS-6: Require Conformance to Lighting Standards	LTS

Key:
AAQS = Ambient Air Quality Standards

NHPA = National Historic Preservation Act
PS = potentially significant

Table S-3. Summary of Impacts and Mitigation Measures

IMPACTS	ALTERNATIVE	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES / CONSERVATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION / CONSERVATION MEASURE
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DWR = California Department of Water Resources
 GHG = greenhouse gases
 LOS = Level of Service
 LS = less than substantial
 LTS = less than significant

PSU = potentially significant and unavoidable
 SJVAPCD = San Joaquin Valley Air Pollution Control District
 SU = significant and unavoidable
 SWPPP = stormwater pollution prevention plan

Table S-4. Summary of Impacts for Environmental Justice

EFFECTS ON ENVIRONMENTAL JUSTICE COMMUNITIES OF CONCERN	ALTERNATIVE	DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS ON MINORITY AND LOW-INCOME POPULATIONS
EJ-1: Removal of Land from Agricultural Production	No-Action	No
	Action Alternatives	Yes
EJ-2: Changes in Regional Activity Attributed to Agricultural Production	No-Action	No
	Action Alternatives	Yes
EJ-3: Changes in Regional Activity Attributed to Project Construction and Operations	No-Action	No
	Action Alternatives	No
EJ-4: Construction-related Emissions of Criteria Air Pollutants and Precursors and Exposure of Sensitive Receptors to Substantial Concentrations of Toxic Air Contaminants	No-Action	No
	Action Alternatives	Yes
EJ-5: Conflicts with Adopted Land Use Plans, Goals, Policies, and Ordinances	No-Action	No
	Action Alternatives	No
EJ-6: Conversion of Designated Farmland to Nonagricultural Uses and Cancellation of Williamson Act Contracts	No-Action	Yes
	Action Alternatives	Yes
EJ-7: Physical Impacts on Resources Used for Subsistence Consumption (Fish and Wildlife)	No-Action	No
	Action Alternatives	No
EJ-8: Reduced Inadequate or Emergency Access	No-Action	No
	Action Alternatives	No

Table S-5. Impacts of Action Alternatives with the Potential to Result in a Cumulatively Considerable Incremental Contribution to a Significant Cumulative Impact

RESOURCE AREA	IMPACT
Air Quality	Exposure of sensitive receptors to Project inputs and additional industrial sources, construction projects, and vehicles on roadways in the Project area.
Cultural Resources	Disturbance or Destruction of Cultural Resources
Environmental Justice	Regional economic factors that are adversely affecting minority and/or low-income populations
Land Use Planning and Agriculture	Conversion of designated Farmland to nonagricultural uses
Socioeconomics and Economics	Substantial short term economic impacts associated with losses in agricultural production
Transportation and Traffic	Temporary or permanent road closure(s) that could affect emergency access or emergency response times

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SAN JOAQUIN RIVER RESTORATION PROGRAM

