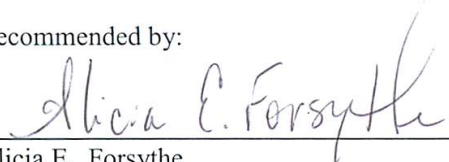


U.S. Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Region

**RECORD OF DECISION**

**MENDOTA POOL BYPASS AND REACH 2B IMPROVEMENTS PROJECT**

Recommended by:

 \_\_\_\_\_ Date 10/25/16

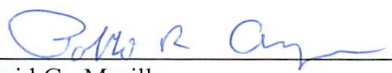
Alicia E. Forsythe  
San Joaquin River Restoration Program Manager  
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Concurred by:

 \_\_\_\_\_ Date 10/25/2016

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Approved by:

For  \_\_\_\_\_ Date 10/28/16

David G. Murillo  
Regional Director  
Mid-Pacific Region  
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# 1.0 Introduction

This document constitutes the Record of Decision (ROD) of the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), Mid-Pacific Region, for the Mendota Pool Bypass and Reach 2B Improvements Project (Project), a component of Phase 1 of the San Joaquin River Restoration Program (SJRRP). The potential impacts of the Project alternatives are analyzed and disclosed in the Final Environmental Impact Statement/Report (Final EIS/R) (July 2016), prepared by Reclamation in compliance with the National Environmental Policy Act (NEPA), and by the California State Lands Commission (CSLC), as the state of California (State) lead agency, in compliance with the California Environmental Quality Act (CEQA).

This ROD has been prepared in accordance with NEPA, the Council on Environmental Quality's (CEQ) NEPA implementing regulations (40 Code of Federal Regulations (CFR) Parts 1500 – 1508), and the Department of the Interior's NEPA implementing regulations (43 CFR Part 46). The decision is based on information and analysis presented in the Draft and Final EIS/R, which are hereby incorporated by reference.

# 2.0 Background

The SJRRP was established in late 2006 to implement the Stipulation of Settlement (Settlement) in *Natural Resources Defense Council (NRDC), et al., v. Kirk Rodgers, et al.* Reclamation, as the Federal lead agency under NEPA, and California Department of Water Resources, as State lead agency under CEQA, prepared a joint Program EIS/R to implement the Settlement in 2012 and Reclamation issued a ROD on September 28, 2012. Federal authorization for implementing the Settlement is provided in the San Joaquin River Restoration Settlement Act (Settlement Act), included in Public Law 111-11. The Settlement establishes two primary goals:

- **Restoration Goal** – To restore and maintain fish populations in “good condition” in the mainstem San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- **Water Management Goal** – To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim and Restoration flows provided for in the Settlement.

To achieve the Restoration Goal, the Settlement calls for releases of water from Friant Dam to the confluence of the Merced River (referred to as Interim and Restoration flows), a combination of channel and structural modifications along the San Joaquin River below Friant Dam, and reintroduction of Chinook salmon. Restoration Flows are specific volumes of water released from Friant Dam during different year types, according to Exhibit B of the Settlement; Interim Flows were experimental flows that were released between 2009 and 2013, to collect relevant data concerning flows, temperatures, fish needs, seepage losses, recirculation, recapture, and reuse. Restoration Flow releases began in 2014 and are released as allowed by hydrologic conditions and channel capacity, in accordance with the Settlement.

To achieve the Water Management Goal, the Settlement calls for recirculation, recapture, reuse, exchange, or transfer of the Interim and Restoration flows to reduce or avoid impacts to water deliveries to all of the Friant Division long-term contractors caused by these flows. In addition, the Settlement establishes a Recovered Water Account and recovered water program to make water available to all of the Friant Division long-term contractors who provide water to meet Interim or Restoration flows, to reduce or avoid the impact of these flows on such contractors.

The Project is a Phase 1 component of the SJRRP, and implementation of the Project includes the construction, operation, and maintenance of the Mendota Pool Bypass and improvements in the San Joaquin River channel in Reach 2B. Project components include a floodplain width which conveys at least 4,500 cubic feet per second (cfs), a method to bypass Restoration Flows around Mendota Pool, and a method to deliver water to Mendota Pool.

The Project footprint extends from approximately 0.3 mile above the Chowchilla Bifurcation Structure to approximately 1.7 miles below Mendota Dam. The Project footprint comprises the area that could be directly affected by the Project. The Project study area or “Project area” includes areas directly and indirectly affected by the Project, including nearby portions of Reach 2A and Reach 3. The Project area is in Fresno and Madera counties, near the town of Mendota, California.

The purpose of the Project is to implement portions of the Settlement consistent with the Settlement Act. The Settlement Act authorizes and directs the Secretary to implement the Settlement. Specifically, this Project is intended to implement Paragraphs 11(a)(1) and 11(a)(2) of the Settlement, which are authorized in Section 10004(a)(1) of the Settlement Act.

Paragraph 11(a)(1)

*Creation of a bypass channel around Mendota Pool to ensure conveyance of at least 4,500 cfs from Reach 2B downstream to Reach 3. This improvement requires construction of a structure capable of directing flow down the bypass and allowing the Secretary to make deliveries of San Joaquin River water into Mendota Pool when necessary;*

Paragraph 11(a)(2)

*Modifications in channel capacity (incorporating new floodplain and related riparian habitat) to ensure conveyance of at least 4,500 cfs in Reach 2B between the Chowchilla Bifurcation Structure and the new Mendota Pool bypass Channel;*

The Settlement specifies the need for the Project, including modifications to Reach 2B and construction of a bypass around Mendota Pool, in support of achieving the Restoration Goal (Settlement Paragraph 2):

*... a goal of this Settlement is to restore and maintain fish populations in “good condition” in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally-reproducing*

*and self-sustaining populations of salmon and other fish (the “Restoration Goal”).*

The purpose of providing increased capacity and floodplain and riparian habitat in Reach 2B is to respond to the need to restore and maintain fish populations in “good condition” by providing fish passage and rearing habitat which benefit salmon and other native fish. Without the Project in Reach 2B, restoration activities would be unlikely to achieve the Settlement goals.

### 3.0 Alternatives Considered

The alternatives development process identified a No Action Alternative and four action alternatives for detailed consideration in the EIS/R. Project alternatives include the following:

- **No Action Alternative** – Under the No Action Alternative, current conditions are projected to the most reasonable future conditions that could occur during the life of the Project without any action alternative being implemented. The No Action Alternative would not achieve the goals and objectives of the Settlement. The conditions under the No Action Alternative would be the conditions that are predicted to exist in the Project area during the planning period if the Project is not implemented, and includes implementation of other SJRRP projects and programs considered reasonably foreseeable by that time.
- **Alternative A (Compact Bypass with Narrow Floodplain and South Canal)** – Alternative A includes construction of setback levees capable of conveying flows up to 4,500 cfs with 3 feet of freeboard and breaching portions of the existing levees. This alternative would restore floodplain habitat with an average width of approximately 3,000 feet to provide benefit to salmonids and other native fishes and construct a compact bypass channel and structures capable of conveying up to 4,500 cfs of Restoration Flows around the Mendota Pool. Alternative A would also include construction of the South Canal and structures capable of conveying up to 2,500 cfs from Reach 2B to Mendota Pool. This alternative would provide upstream and downstream fish passage for adult salmonids and other native fishes, and downstream fish passage for juvenile salmonids, between Reach 2A and Reach 3.
- **Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure), the Preferred Alternative** – Alternative B includes construction of setback levees capable of conveying flows up to 4,500 cfs with 3 feet of freeboard and breaching portions of the existing levees. This alternative would restore floodplain habitat with an average width of approximately 4,200 feet to provide benefit to salmonids and other native fishes and construct a compact bypass channel and structures capable of conveying up to 4,500 cfs of Restoration Flows around the Mendota Pool. Alternative B would also include construction of the Compact Bypass bifurcation structure capable of conveying up to 2,500 cfs from Reach 2B to Mendota Pool. This alternative would provide upstream and downstream fish passage for adult salmonids and other native fishes, and downstream fish passage for juvenile salmonids, between Reach 2A and Reach 3.

Alternative B is also the consensus-based alternative developed as part of a consensus-based alternative process further described below.

- **Alternative C (Fresno Slough Dam with Narrow Floodplain and Short Canal) –** Alternative C includes construction of setback levees capable of conveying flows up to 4,500 cfs with 3 feet of freeboard and breaching portions of the existing levees. This alternative would restore floodplain habitat with an average width of approximately 3,000 feet to provide benefit to salmonids and other native fishes. Alternative C would include construction of a dam across Fresno Slough capable of containing Mendota Pool within Fresno Slough so that 4,500 cfs of Restoration Flows could be conveyed around the Mendota Pool. This alternative would include construction of the Short Canal and structures capable of conveying up to 2,500 cfs from Reach 2B to Mendota Pool. Similar to Alternatives A and B, Alternative C would provide upstream and downstream fish passage for adult salmonids and other native fishes, and downstream fish passage for juvenile salmonids, between Reach 2A and Reach 3.
- **Alternative D (Fresno Slough Dam with Wide Floodplain and North Canal) –** Alternative D includes construction of setback levees capable of conveying flows up to 4,500 cfs with 3 feet of freeboard and breaching portions of the existing levees. This alternative would restore floodplain habitat with an average width of approximately 4,200 feet to provide benefit to salmonids and other native fishes. Similar to Alternative C, Alternative D would include construction of a dam across Fresno Slough capable of containing Mendota Pool within Fresno Slough so that 4,500 cfs of Restoration Flows can be conveyed around the Mendota Pool. This alternative, however, would include construction of the North Canal and structures capable of conveying up to 2,500 cfs from Reach 2B to Mendota Pool. Alternative D, like the other action alternatives, would provide upstream and downstream fish passage for adult salmonids and other native fishes, and downstream fish passage for juvenile salmonids, between Reach 2A and Reach 3.

Reclamation undertook a consensus-based alternative development process in accordance with *Guidance on Use of Consensus-Based Management in the National Environmental Policy Act Process*, September 21, 2004, and 43 CFR 46.110 to obtain stakeholder input and reach a preferred alternative that minimized impacts to the local community. A meeting was held on January 29, 2013, to introduce the consensus-based alternative concept and approach to 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. Landowners and water districts identified Alternative B as the landowner-preferred alternative. Reclamation then met with several landowners to further refine levee alignments to reduce the impacts to site-specific infrastructure and land use. Following several additional meetings with the individuals and groups listed above, Reclamation and CSLC identified a preferred alternative in the Draft EIS/R, Alternative B, based on the input received on the action alternatives.

The EIS/R presents project-level analysis of the potential impacts of the alternatives conducted in accordance with CEQ Regulations (40 CFR 1502). Detailed descriptions of each of the Project alternatives are included in Chapter 2.0 of the Final EIS/R.

## 4.0 Environmentally Preferable Alternative

Section 1505.2(b) of NEPA requires that, in cases where an EIS has been prepared, the ROD must identify all alternatives that were considered, specifying the alternative or alternatives which were considered to be environmentally preferable. The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. This means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources (CEQ 40 Most Asked Questions number 6(a)). It is implicit in NEPA that the environmentally preferable alternative must be reasonable and feasible to implement. However, CEQ Guidelines do not require adoption of the environmentally preferable alternative for implementation.

To identify the environmentally preferable alternative, each Project alternative was evaluated based on the environmental effects identified. The relative potential for each action alternative to benefit the resource areas was also identified. The action alternative with the fewest adverse environmental effects and greatest environmental benefits (where applicable) was identified for each resource category.

In identifying the environmentally preferable alternative, Reclamation considered effects to all resources, and on balance, Alternative B, Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure, would have the least environmental effects associated with implementing the Project. Construction, operation, and maintenance effects were analyzed for air quality, fisheries, vegetation, wildlife, climate change and greenhouse gases, cultural resources, environmental justice, geology and soils, flood management, groundwater, surface water resources and water quality, wetlands and aquatic resources, land use planning and agricultural resources, noise and vibration, paleontological resources, public health and hazardous materials, recreation, socioeconomics and economics, transportation and traffic, utilities and service systems, and visual resources for the Project alternatives. Impacts and benefits of the Project alternatives are described in Chapters 4.0 through 24.0 of the Final EIS/R.

The No Action Alternative would provide some benefits to biological, hydrological, and visual resources, as well as some new recreation opportunities, because of the release of Restoration Flows. However, the No Action Alternative would not meet the purpose of and need for the Project, and the beneficial effects provided by the action alternatives would be substantially greater than those provided by the No Action Alternative, especially for fisheries.

All of the action alternatives would achieve implementation of the Project purpose and would contribute to the success of the Restoration Goal to varying extents. The action alternatives would result in the same significant adverse impacts and result in similar types of minor and moderate impacts. For a comprehensive comparison of the impacts for each alternative, refer to Section 26.8 of the Final EIS/R.

Alternative B was identified as the consensus-based alternative and minimizes agricultural impacts to the extent feasible while contributing to achieving the Restoration Goal. Alternative B, includes agriculture on the floodplain, which allows for flexibility for floodplain management

and minimizes the amount of agricultural land taken out of production. This minimizes but does not eliminate the significant and unavoidable impacts to agricultural resources. Agriculture in the floodplain adds less than significant impacts to water quality as a result of pesticide runoff. Alternative B, which is the environmentally preferable alternative and the consensus-based alternative, balances the needs of the Chinook salmon fishery with local agriculture concerns.

## **5.0 Decision**

Reclamation's decision is to implement Alternative B, making it the Selected Alternative. After consideration of the analysis in the Draft and Final EIS/R (released June 2015 and July 2016, respectively), and subsequent public comments, Reclamation has determined that Alternative B would best meet the purpose of and need for the Project, and in addition, it is the consensus-based alternative and the environmentally preferable alternative.

The Selected Alternative meets the purpose of and need for the Project, as outlined in Section 2.0 and described in detail in Chapter 1 of the Final EIS/R, which is to implement portions of the Settlement consistent with the Settlement Act. Specifically, the Selected Alternative is intended to implement Paragraphs 11(a)(1) and 11(a)(2) of the Settlement, which are authorized in Section 10004(a)(1) of the Settlement Act. The purpose of providing increased channel capacity and floodplain and riparian habitat in Reach 2B responds to the need to restore and maintain fish populations in "good condition" by providing fish passage and rearing habitat, which benefit salmon and other native fish. The Selected Alternative will further achieve the Settlement goals.

Based on the levee alignments and amount of floodplain habitat it would provide, the Selected Alternative provides the best opportunity to contribute to achieving the Settlement Restoration Goal while resulting in the least environmental impacts. The Selected Alternative provides greater benefits to the fishery and environment and includes levee alignments that have been coordinated with landowners to minimize agricultural impacts. Agriculture on the floodplain allows for flexibility for floodplain management and minimizes the amount of agricultural land taken out of production. The Selected Alternative balances the needs of the Chinook salmon fishery with local farming concerns.

Attachment A provides the full project description for actions to be implemented in association with the Selected Alternative, including the construction of the Mendota Pool Fish Screen (see Section 2.2.8 of Attachment A.) Attachment B describes the Environmental Commitments Plan and Tracking Program for the Selected Alternative.

## **6.0 Basis for Decision**

Reclamation's decision to implement the Selected Alternative is based on how the alternatives meet the purpose of and need for the Project, the magnitude of environmental effects, and the feasibility of applying mitigation to reduce those effects.



All the action alternatives meet the purpose of and need for the Project, but the Selected Alternative is the consensus-based alternative and the environmentally preferable alternative.

Although the magnitudes of the impacts vary for each resource area, the intensity of the environmental effects was generally found to be similar for the action alternatives, particularly for the more severe impacts to agricultural resources and emergency access. Variations in intensity were found only for minor to moderate impacts. For a comparison of the magnitude of the impacts for each resource area, refer to Section 26.8 of the Final EIS/R.

As described in Section 7.0, potential impacts of the Project alternatives were analyzed for 21 resource topics. The results of this evaluation indicate that the Selected Alternative would meet the purpose of and need for the Project, and compared with the other action alternatives, would have the least net environmental impacts with the wider floodplain levee alignment resulting in greater benefits to fisheries.

In consideration of the potential impacts presented in the Final EIS/R, and the comments received on the Draft and Final EIS/R, Reclamation identified Alternative B as the Selected Alternative. Reclamation is working to achieve the Restoration and Water Management goals of the Settlement, and the Selected Alternative would provide the greatest benefits, fulfill the purpose of and need for the Project, and contribute to achieving the SJRRP Restoration Goal while minimizing environmental impacts.

All practicable measures to avoid or minimize environmental harm from the Selected Alternative will be implemented with the Selected Alternative. The Environmental Commitment Plan and Tracking Program, included in Attachment B, will be used by Reclamation to ensure that all conservation measures, environmental commitments, and mitigation measures described in the EIS/R for Alternative B are implemented, as applicable, and that the implementation is documented.

## **7.0 Environmental Issues Evaluated**

The alternatives were evaluated to address potential impacts to the range of environmental and socioeconomic resources relevant to NEPA in the EIS/R. The EIS/R evaluates the environmental impacts of implementing the Project Alternatives, including construction, operation, and maintenance effects on air quality, fisheries, vegetation, wildlife, climate change and greenhouse gases, cultural resources, environmental justice, geology and soils, flood management, groundwater, surface water resources and water quality, wetlands and aquatic resources, land use planning and agricultural resources, noise and vibration, paleontological resources, public health and hazardous materials, recreation, socioeconomic and economics, transportation and traffic, utilities and service systems, and visual resources. Impacts and benefits are described in Chapters 4.0 through 24.0 of the EIS/R.

During initial scoping, it was determined that Indian Trust Assets are not found in the Project area and there would be no impacts to Indian Trust Assets.

All action alternatives have the potential to result in significant impacts to several resources (including air quality, cultural resources, groundwater, surface water quality, land use, noise and vibration, paleontological resources, public health and hazardous materials, recreation, transportation and traffic, and visual resources) before mitigation. These impacts and resulting mitigation measures are summarized below:

- *Air Quality*: All the action alternatives would increase emissions of air pollutants due to construction activities, conflict with air quality plans, and expose sensitive receptors to air pollutants, but these adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures AQ-1A, AQ-1B, AQ-1C, AQ-2, AQ-3A, and AQ-3B.
- *Cultural Resources*: All the action alternatives could result in effects on archaeological resources during construction, and Alternatives C and D could affect historic properties, but these adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures CUL-1A, CUL-1B, CUL-1C, CUL-1D, CUL-1E, and CUL-3.
- *Groundwater*: All the action alternatives could result in temporary effects on groundwater quality due to construction, but adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures GRW-1A and GRW-1B.
- *Surface Water Quality*: All the action alternatives could result in effects on surface water quality due to construction and from floodplain inundation of prior agricultural soils, but these adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures SWQ-1 and SWQ-3.
- *Land Use*: All the action alternatives would result in effects on productive agricultural land, conversion of designated farmland to non-agricultural uses, and conflicts with existing Williamson Act contracts, and these adverse effects would remain significant and unavoidable after implementation of Mitigation Measures LU-1, LU-2, and LU-3. All the action alternatives could result in conflicts with land use plans, but these effects would be reduced to less than significant levels through the implementation of Mitigation Measure LU-5.
- *Noise and Vibration*: All the action alternatives could result in effects by exposing sensitive receptors to construction noise and by increasing construction traffic noise, but these adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures NOI-1 and NOI-3. Alternatives C and D could result in effects by exposing sensitive receptors to construction vibration, but these effects would be reduced to less than significant levels through the implementation of Mitigation Measures NOI-2.
- *Paleontological Resources*: All the action alternatives could result in adverse effects on unique paleontological resources, but these effects would be reduced to less than significant levels through the implementation of Mitigation Measure PAL-1.

- *Public Health and Hazardous Materials:* All the action alternatives could result in effects by increasing exposure to hazardous materials, disturbing hazardous material sites, mobilizing agricultural soils, increasing exposure to diseases, and decommissioning wells, but these adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures HAZ-2A, HAZ-2B, HAZ-2C, HAZ-2D, HAZ-2E, HAZ-3, HAZ-4, HAZ-5A, HAZ-5B, HAZ-5C, and HAZ-6.
- *Recreation:* All the action alternatives could result in effects on recreation opportunities during construction and permanent displacement of recreation uses, but adverse effects would be reduced to less than significant levels through the implementation of Mitigation Measures REC-1 and REC-2.
- *Transportation and Traffic:* Alternatives A, B, and C would result in adverse effects on emergency access, and these effects would remain significant and unavoidable after implementation of Mitigation Measures TRA-4A in Alternative A, TRA-4B in Alternative B, and TRA-4C in Alternative C. Alternative D would also result in effects on emergency access, and these effects would potentially be significant and unavoidable.
- *Visual Resources:* All the action alternatives could result in adverse effects on visual quality and increased glare during construction, but these effects would be reduced to less than significant levels through the implementation of Mitigation Measures VIS-1 and VIS-6.

## 8.0 Compliance with Other Regulations

Project coordination, consultation, and environmental compliance documentation is summarized in Table 8-1 and described in further detail in this section.

**Table 8-1.  
Other Project Coordination, Consultation and Environmental Compliance Documentation**

Resource	Applicable Laws/Regulations/Permits	Regulating Agency/Agencies
Federally Listed Species	Section 7 of the Federal Endangered Species Act	U.S. Fish and Wildlife Service and National Marine Fisheries Service
Essential Fish Habitat	Magnuson-Stevens Fishery Conservation and Management Act	National Marine Fisheries Service
Fish and Wildlife Resources	Fish and Wildlife Coordination Act Report	U.S. Fish and Wildlife Service and National Marine Fisheries Service
Cultural Resources	National Historic Preservation Act, Section 106	State Historic Preservation Officer/ ACHP
Wetlands and Waters	Clean Water Act Section 404 Individual Permit Rivers and Harbors Act Section 10 Permit	U.S. Army Corps of Engineers
Water Resources	Clean Water Act Section 401 Water Quality Certification Clean Water Act Section 402 Construction General Permit	Central Valley RWQCB
State Lands	Land Use Lease	CSLC

Resource	Applicable Laws/Regulations/Permits	Regulating Agency/Agencies
Land Use	Williamson Act Contracts Land Use/Zoning	Fresno/Madera Counties
Air Quality	Air Impact Analysis Regulation VIII Dust Control Plan Federal Clean Air Act	SJVAPCD

Key:

ACHP = Advisory Council on Historic Preservation

CSLC = California State Lands Commission

EIS/R = Environmental Impact Statement/Report

RWQCB = Regional Water Quality Control Board

SJVAPCD = San Joaquin Valley Air Pollution Control D

## 8.1 Section 7 of Federal Endangered Species Act

Reclamation consulted in accordance with Section 7 of the Endangered Species Act (ESA) with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) on the effects of implementing the Selected Alternative.

### 8.1.1 U.S. Fish and Wildlife Service

#### **Biological Opinion**

Reclamation initiated formal consultation with USFWS in February 2016 on the effects of the Selected Alternative in accordance with Section 7(a)(2) of the ESA. Reclamation received the USFWS Biological Opinion (BiOp) on the effects of implementation of the Selected Alternative in August 2016. The BiOp addresses the effects of the Selected Alternative on giant garter snake (*Thamnophis gigas*), least Bell's vireo (*Vireo bellii pusillus*), blunt-nosed leopard lizard (*Gambelia sila*), Fresno kangaroo rat (*Dipodomys nitratoideus exilis*), San Joaquin kit fox (*Vulpes macrotis mutica*), and Federally-listed plant species (including California jewelflower [*Caulanthus californicus*], Palmate-bracted bird's beak [*Cordylanthus palmatus*], and San Joaquin woolly threads [*Monolopia (=Lembertia) congdonii*]). There is no designated critical habitat for these species in the Project area.

Several proposed conservation measures are included in the BiOp and were based on the SJRRP's Conservation Strategy and the *Formal Consultation and Conference Report Under Section 7(a)(2) of the Endangered Species Act for the San Joaquin River Restoration Program* (USFWS 2012). The conservation measures in the BiOp introduce some minor changes from the conservation measures in the Final EIS/R. Those changes are reflected in the conservation measures in Attachment A, Section 2.28, and Attachment B, Table B-1, where Reclamation has identified the conservation measures included as part of the Selected Alternative.

The BiOp also includes an incidental take statement for giant garter snake, least Bell's vireo, and Fresno kangaroo rat and found that certain forms of take may occur as the result of the protocol surveys and associated trapping efforts that are proposed as part of the conservation measures for the proposed Project. The BiOp includes the following reasonable and prudent measures to minimize the impact of taking giant garter snakes, which are hereby incorporated into the Selected Alternative and are included in Table B-2:

1. *Minimize take in the form of harassment and/or harm of the giant garter snake during project construction activities and during project implementation. Reclamation will implement this measure as part of construction and implementation.*
2. *The permanent loss and degradation of giant garter snake habitat shall be confined to the proposed project site, and minimized and restored to the greatest extent practicable. Reclamation will implement this measure as part of design, construction, and implementation.*

The BiOp includes the following non-discretionary terms and conditions:

1. *Reclamation personnel, and all agents and contractors representing Reclamation, will implement all the described conservation measures included in [the]biological opinion. Reclamation will comply with this term and condition as part of design, construction, and implementation.*
2. *In order to monitor whether the amount or extent of incidental take anticipated from implementation of the project is approached or exceeded, Reclamation shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Reclamation must immediately reinitiate formal consultation as per 50 CFR 402.16.*
  - a. *For those components of the action that may result in direct encounters between listed species and project workers and their equipment whereby incidental take in the form of harassment, harm, injury, or death is anticipated, Reclamation shall immediately contact USFWS's San Francisco Bay-Delta Fish and Wildlife Office (BDFWO) at (916) 930-3800 to report the encounter. If encounter occurs after normal working hours, Reclamation shall contact the BDFWO at the earliest possible opportunity the next working day. Reclamation will comply with this term and condition as part of surveys, construction, and implementation.*

The BiOp concurred with Reclamation's determination that the proposed project would not likely adversely affect blunt nosed leopard lizard, San Joaquin kit fox, California jewelflower, palmate-bracted bird's beak and San Joaquin woolythreads, and determined that the proposed project would not likely jeopardize the continued existence of giant garter snake, least Bell's vireo, and Fresno kangaroo rat.

In addition, the BiOp includes the following discretionary conservation recommendations:

1. *Assist USFWS in implementing recovery actions identified within the Recovery Plans for federally listed species, and their critical habitat areas. Reclamation will assist in implementing recovery actions as they relate to the Project activities.*
2. *Encourage or require the use of appropriate California native species in revegetation and habitat enhancement efforts associated with projects authorized or undertaken by Reclamation. Reclamation will incorporate appropriate California native vegetation during the Project design, construction, and implementation.*

3. *Sightings of any listed or sensitive animal species should be reported to the California Natural Diversity Database of the DFW. A copy of the reporting form and a topographic map or adequate aerial photograph clearly marked with the location the animals were observed also should be provided to USFWS. Reclamation will implement this measure as part of surveys, construction, and implementation.*

### ***Fish and Wildlife Coordination Act Report***

The Fish and Wildlife Coordination Act Report, prepared by USFWS on May 16, 2016, concluded that all of the action alternatives would have similar environmental impacts, and Alternative B (Compact Bypass with Consensus-Based Floodplain and Bifurcation Structure, the Selected Alternative) is the least damaging to the environment. The USFWS supports the Selected Alternative if implemented along with the conservation measures, which are included in the Selected Alternative and described in Attachment A and B, and the following recommendations which are adopted as part of the Selected Alternative by the ROD:

- *Minimize impacts to ruderal and annual grassland habitat that is temporarily disturbed during construction by reseeding with native grasses and forbs after the construction is complete. Reseeding temporarily disturbed areas with native seeds is included in Section 2.2.4 of the EIS/R.*
- *Implement all appropriate proposed conservation measures for affected species and their habitats as described in the EIS/R for the Project. Reclamation will implement all proposed conservation measures as described in Attachments A and B.*
- *On July 11, 2012, USFWS was petitioned by the Center for Biological Diversity to list 53 amphibian and reptile species across the United States. The western pond turtle was one of the species petitioned for listing. Currently USFWS is reviewing the status of this species. Minimize impacts to Western Pond Turtle by implementing the conservation measure WPT-1 in the EIS/R. Conservation Measure WPT-1 is included in the Final EIS/R, Section 2.2.10.*
- *Where appropriate, minimize impacts to Tricolored Blackbirds by following the DFW Guidance document Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015 (DFW, 2015). Minimizing impacts to tricolored blackbirds as recommended is included in Conservation Measure TRI-1 in the Final EIS/R, Section 2.2.10.*
- *Minimize impacts to cliff swallow nesting colonies under bridges by developing an exclusion plan in coordination with USFWS prior to bridge construction. Minimizing impacts to swallow nesting colonies as recommended is included in Conservation Measure SWA-1 in the Final EIS/R, Section 2.2.10.*
- *Mitigate for habitat impacts of the project based on the following ratios: valley/foothill riparian 4:1, grassland 3:1, natural seasonal wetland 4:1, nontidal freshwater permanent emergent 3:1, and upland cropland 1:1. As described in Conservation Measure RHSNC-2 in the Final EIS/R, Section 2.2.10, the Riparian Habitat Mitigation and Monitoring Plan for the SJRRP will be implemented as applicable for Project*

impacts. Credits for increased riparian habitat acreage or improved ecological function of riparian and wetland habitats resulting from the implementation of SJRRP actions will be applied as compensatory mitigation before additional compensatory measures are required. If losses of other sensitive natural communities (e.g., recognized as sensitive by the California Natural Diversity Database, but not protected under other regulations or policies) would not be offset by the benefits of the SJRRP, then additional compensation will be provided through creating, restoring, or preserving in perpetuity in-kind communities at a sufficient ratio for no net loss of habitat function or acreage.

- *Rodenticide should not be used within the project area.* Barring the use of rodenticide is included in Chapter 2, Section 2.2.4 of the EIS/R.
- *Implement an Erosion Control Plan and Storm Water Pollution Prevention Plan that minimizes erosion and sedimentation during construction by using erosion control devices, such as straw wattles.* Implementation of an Erosion Control Plan and a Storm Water Pollution Prevention Plan is included in the Final EIS/R as Mitigation Measure SWQ-1.
- *Survey the construction sites for ground nesting birds and if nests with eggs are found, it is recommended that either: (1) construction is delayed until nesting season is completed, or (2) eggs are removed from the nest and placed in a facility for incubation.* Minimizing impacts to ground nesting birds is included in conservation measure MBTA-1 in the Final EIS/R.
- *Work towards making the proposed project carbon neutral. Consistent with the Intergovernmental Panel on Climate Change (IPCC) (2007a and 2007b) adaptation strategies/mitigation recommendations, USFWS recommends carbon offsets be achieved through sequestering carbon (e.g., by converting tilled agricultural fields near the project area to native grasslands). Alternatively, compensating for the proposed project's carbon footprint by purchasing carbon offsets.* The Project will convert some row cropland into native vegetation habitat, and Mitigation Measure AQ-1C describes purchasing offsets.
- *Implement a Hazardous Materials Control and Spill Prevention and Response Plan to avoid the release of hazardous materials to the environment (for chemicals such as the galvanizing paint for the radial gates).* Measures to avoid the release of hazardous materials for construction and operations and maintenance are included in the Final EIS/R as part of Mitigation Measure HAZ-2A.
- *Continue the collaborative approach to the planning and implementation of this Project with USFWS.* The USFWS is an Implementing Agency for the SJRRP, and Reclamation will continue to collaborate with USFWS on this Project.

## **8.1.2 National Marine Fisheries Service**

### ***Biological Opinion***

Reclamation initiated formal consultation with NMFS in January 2016 on the effects of the Selected Alternative in accordance with Sections 7(a)(2) and 7(a)(4) of the ESA. Reclamation

received the NMFS BiOp on the effects of implementing the Selected Alternative in October 2016. The BiOp addresses the effects of the Project on the San Joaquin River non-essential experimental population of Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) in accordance with Section 7(a)(4) of the ESA, and California Central Valley steelhead (*Oncorhynchus mykiss*) Distinct Population Segment in accordance with Section 7(a)(2) of the ESA. Reclamation will implement the following measures and other requirements as part of the Selected Alternative.

The BiOp includes the following non-discretionary reasonable and prudent measures necessary or appropriate to minimize the impact of the amount or extent of incidental take:

1. *Measures shall be taken to ensure that future Proposed Actions related to the Mendota Pool Bypass and Reach 2B Improvements Project minimize, to the maximum extent practicable, any adverse effects on Federally listed salmon and steelhead that are subject to [the] consultation.* In addition to the terms and conditions below, Conservation Measures 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), CVS-1 (Avoid Loss of Habitat and Risk of Take of Species), and CVS-2 (Minimize Loss of Habitat and Risk of Take of Species) are included in the Final EIS/R, Section 2.2.10 to provide measures for avoiding and minimizing effects to Essential Fish Habitat for Pacific salmonids and loss of habitat and risk of take for steelhead and spring-run Chinook salmon.
2. *Measures shall be taken to maintain, monitor, and adaptively manage all conservation measures through a Monitoring and Maintenance Plan (MMP) to ensure their effectiveness.* In addition to the terms and conditions below, this ROD includes an Environmental Commitment Plan and Tracking Program in Attachment B that includes the conservation measures, environmental commitments, and mitigation measures from the Final EIS/R as well as columns for tracking completion of the work.
3. *Measures shall be taken to minimize the impacts of bank protection and setback levee construction by implementing integrated conservation measures that provide beneficial growth and survival conditions for salmonids. Also, actions shall be taken to ensure riparian habitat is preserved and protected to the maximum extent allowed within the functional designs of the proposed action. Preserved habitat shall be combined with restorative plantings and features to enhance natural recruitment of riparian vegetation, for protection and creation of fish habitat features that are the subject of [the] BO.* In addition to the terms and conditions below, Conservation Measures EFH-2 (Minimize Loss of Habitat and Risk of Take from Implementation of Construction Activities) and CVS-2 (Minimize Loss of Habitat and Risk of Take of Species), which are included in the Final EIS/R, Section 2.2.10, commit to constructing bank protection in a manner that minimizes predator habitat, minimizes erosion potential, minimizes sedimentation in the waterway, and contains material suitable for supporting riparian vegetation, all of which contribute to providing beneficial conditions for salmonids.
4. *Measures shall be taken to insure that contractors, construction workers, and all other parties involved with these Proposed Actions implement the Proposed Actions as laid out*



*in the biological assessment and [the] BiOp.* In addition to the terms and conditions below, Conservation Measures EFH-1 (Avoid Loss of Habitat and Risk of Take of Species) and CVS-1 (Avoid Loss of Habitat and Risk of Take of Species), which are included in the Final EIS/R, Section 2.2.10, commit to conducting an education program for all agency and contracted employees relative to the Federally listed species that may be encountered within the Project area and the required practices for their avoidance and protection. The measures further commit to having a qualified biological monitor present during all construction activities, including clearing, grubbing, pruning, and trimming of vegetation at each job site during construction initiation, midway through construction, and at the close of construction to monitor implementation of conservation measures and water quality. Additionally, a NMFS-appointed representative will be identified to ensure that questions regarding avoidance and protection measures are addressed appropriately in a timely manner.

5. *Continue to implement the Steelhead Monitoring Plan or similar action to prevent steelhead from entering the action area before completion of all aspects of the proposed action.* Reclamation will continue to implement the Steelhead Monitoring Plan as described in the 2012 SJRRP ROD.

The BiOp includes the following non-discretionary terms and conditions which Reclamation will implement for the Project:

1. *The following terms and conditions implement reasonable and prudent measure 1:*
  - a. *Reclamation shall convene an existing or new interagency working group (such as the Environmental Compliance Workgroup or the Reach 2B and Mendota Pool Bypass Meeting) associated with the SJRRP to coordinate input into future actions associated with the Mendota Pool Bypass and Reach 2B Improvements Project. Membership in the interagency working group will be subject to Reclamation's decision, but should at a minimum include participation of SJRRP resource agency staff from USFWS, NMFS, CDFW, and DFW.*
  - b. *Reclamation shall coordinate with NMFS during project development as future actions are designed to ensure conservation measures are incorporated to the extent practicable and feasible and projects are designed to maximize ecological benefits.*
  - c. *Reclamation shall confer with NMFS at all major engineering and planning decision points, including but not limited to the completion of 30%, 60%, 90% and 100% designs. To initiate conference, Reclamation shall send NMFS a letter requesting concurrence that the plans are within the scope of effects considered in this BO. All relevant plan details would be included in the concurrence request package. Reclamation would give NMFS biologists and engineers 45 days to review plans. If NMFS determines that the plans and designs provided by Reclamation do not comply with NMFS standards then NMFS has the right to request changes, and NMFS would work with Reclamation to the extent possible*

*to find a consensus. Approval would consist of a formal letter documenting NMFS concurrence with the provided plans.*

- d. If Reclamation changes operations of the proposed actions from what is analyzed in [the] BO then NMFS must be notified with a formal letter at least 45 days before proposed changes take place. The notification should include any additional analysis to determine if take would exceed what is currently authorized in the ITS of [the] opinion from the operational changes. NMFS would work with Reclamation to find solutions to operational changes to the extent reasonable and feasible that does not cause harm to populations of listed fish.*
- e. A Fish Rescue and Relocation Plan (FRRP) [will] be developed by Reclamation or their contractors and provided to NMFS for approval 90 days prior to cofferdam construction. The FRRP will include methods of flow bypass, diversion, dewatering, salmonid collection, transport and release, water quality data, and formation of a team of qualified biologists with expertise in handling, collecting, and relocating salmonids. NMFS [will] have 45 days to review and approve the FRRP so contractors can be given time to make necessary changes, if any, to follow NMFS guidance or criteria while staying on construction schedule.*
- f. During Preconstruction Engineering and Design, Reclamation shall coordinate with NMFS to provide documentation of operation of the Mendota Pool Bypass, Mendota Pool Fish Screen, Chowchilla Bypass, compact bypass, and their associated fish passage facilities would allow, without detrimental effects to flood management operations, or water supply needs, fish passage as stated in the opinion.*
- g. Before final approval of 100% designs Effectiveness and Compliance Monitoring Plans shall be submitted for the Mendota Pool Fish Screen, Compact Bypass Control Structure Fish Passage Facility, and Chowchilla Bypass Fish Passage Facility. These plans must include monitoring that shows these facilities are working in their intended manor, to NMFS criteria, and do not cause additional take of listed fish. This monitoring for the Compact Bypass Control Structure should consist of, at a minimum, the following: juvenile survival rates though Mendota Pool while the Compact Bypass Control Structure radial gates are closed, juvenile survival through the fish passage structure on the Compact Bypass Control Structure, and juvenile survival through partially opened radial gates on the Compact Bypass Control Structure.*
- h. Reclamation shall monitor for take at the Mendota Pool Fish Screen to show that take is not exceeding levels given in [the] BO. Monitoring shall be reported to NMFS with a weekly report when the fish screen is in use. The weekly report shall be sent to all appropriate NMFS staff and shall consist of a summarized statement from data collected by the Effectiveness and Compliance Monitoring Plan.*



*ensure that conservation features of the proposed action are developing consistent with the MMP.*

- e. Reclamation shall host an annual meeting and issue annual reports for five years following completion of Proposed Action construction. The purpose is to ensure that conservation features of the Proposed Action are developing consistent with the MMP.*
  - f. Reclamation shall update their O&M Manual to ensure that the self-mitigating elements are meeting the criteria established in the MMP.*
- 3. The following terms and conditions implement reasonable and prudent measure 3:*
- a. Reclamation shall minimize the removal of existing riparian vegetation and replace riparian vegetation where it has been removed.*
  - b. Reclamation shall ensure that native vegetation is used in all replanted areas. All plantings must be provided with the appropriate amount of water to ensure successful establishment.*
  - c. Reclamation shall design floodplains with high-flow channels to increase the inundation extent at lower flows, and remove unconnected low-lying areas in the floodplain to prevent stranding.*
  - d. Reclamation shall develop a vegetation plan in consultation with NMFS to allow for the protection of existing vegetation in place and the planting and establishment of new native riparian vegetation.*
- 4. The following terms and conditions implement reasonable and prudent measure 4:*
- a. Reclamation shall provide a copy of this BO, or similar documentation, to the prime contractor, making the prime contractor responsible for implementing all requirements and obligations included in these documents and to educate and inform all other contractors involved in the proposed action as to the requirements of this BO.*
  - b. A NMFS-approved Worker Environmental Awareness Training Program for construction personnel shall be conducted by the NMFS-approved biologist for all construction workers prior to the commencement of construction activities. The program shall provide workers with information on their responsibilities with regard to Federally-listed fish, their critical habitat, an overview of the life-history of all the species, information on take prohibitions, protections afforded these animals under the ESA, and an explanation of the relevant terms and conditions of [the] BiOp. Written documentation of the training [will] be submitted to NMFS within 30 days of the completion of training.*

The BiOp concluded that the proposed project would not likely jeopardize the continued existence of California Central Valley steelhead and the NEP of spring-run Chinook salmon.

The BiOp also includes the following conservation recommendations as suggestions regarding discretionary measures. Reclamation will consider these recommendations in implementation of the Selected Alternative.

1. *The effectiveness of some types of stream restoration actions are not well documented, partly because decisions about which restoration actions that should be implemented do not always address the underlying processes that led to habitat loss. NMFS recommends that the Action Agencies use species recovery plans to help ensure that their actions will address the underlying processes that limit fish recovery, and to identify key actions in the action area when prioritizing Proposed Action sites each year. The final recovery plan for Central Valley listed salmonids is available at:  
[http://www.westcoast.fisheries.noaa.gov/protected\\_species/salmon\\_steelhead/recovery\\_planning\\_and\\_implementation/california\\_central\\_valley/california\\_central\\_valley\\_salmon\\_recovery\\_domain.html](http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/california_central_valley/california_central_valley_salmon_recovery_domain.html)*
2. *Continue to monitor the effects of water delivery operations on salmonid condition in all water year types. Including predation around structures and potentially increased predation within the slack water created when water elevation is raised to make water deliveries into Mendota Pool, and possible increased stress from temperatures and water conditions (e.g. dissolved oxygen content, turbidity, or exposure to toxins).*
3. *NMFS recognizes that Reclamation is obligated to provide water supply to the Exchange Contractors, either from the Delta-Mendota Canal (DMC) or from Friant Dam operations. Reclamation is not precluded from operation of the CVP facilities in a manner that could ensure Exchange Contractor needs are provided and that minimizes adverse effects to ESA listed species. NMFS recommends that Reclamation include the Friant Division operations in the reinitiation of consultation on the long term operations of the Central Valley Project, including evaluation of effects of Exchange Contract deliveries and unscreened diversions.*
4. *Reclamation should encourage cost share sponsors, stakeholders, and neighboring landowners to develop floodplain and riparian corridor enhancement plans as part of the Proposed Action.*
5. *Reclamation should seek out opportunities for setback levees and other flood management activities that promote overall riverine system restoration.*
6. *Reclamation should support and promote aquatic and riparian habitat restoration within the San Joaquin River and other watersheds, especially those with listed aquatic species. Practices that avoid or minimize negative impacts to listed species should be encouraged.*
7. *Reclamation should continue to work cooperatively with other State and Federal agencies, private landowners, governments, and local watershed groups to identify opportunities for cooperative analysis and funding to support salmonid habitat restoration Proposed Actions.*

8. *Reclamation should continue to work with NMFS and other agencies and interested entities to restore fish passage to support the improved growth, survival, and recovery of native fish species in the San Joaquin River Restoration Area.*
9. *Reclamation should work with NMFS to implement compatible agriculture uses and activities on floodplain areas, as appropriate.*
10. *Reclamation should consider installing instream woody material for actions associated with the Mendota Pool Bypass and Reach 2B Improvements Project. The purpose is to maximize the refugia and rearing habitats for juvenile fish and reduce predation.*

### **Magnuson-Stevens Fishery Conservation and Management Act**

As part of the Selected Alternative, Reclamation will implement the following recommendations to minimize and avoid effects to Essential Fish Habitat (EFH). These measures are included in the Environmental Commitment Plan and Tracking Program (Attachment B).

1. For effects related to the temporary reduction in available habitat area, NMFS recommends that the following Conservation Recommendation should be followed:
  - a. Avoid restoration work during critical fish windows to reduce direct impacts to important ecological functions such as spawning, nursery, and migration. This conservation measure requires scheduling projects when managed species are not expected in the area. These periods should be determined prior to project implementation to reduce or avoid any potential impacts.
  - b. Minimize the removal of existing native riparian vegetation.
  - c. Mitigate fully any unavoidable damage to EFH during project implementation and accomplish within a reasonable period of time after the impacts occurred.
2. For effects related to erosion/sedimentation, increased turbidity, changes in temperature, and potential introduction of pollutants during construction, NMFS recommends the following Conservation Recommendations should be followed:
  - a. Use BMPs in all construction and maintenance activities such as avoiding ground disturbing activities during the wet season, minimizing the time disturbed lands are left exposed, using erosion prevention and sediment control methods, minimizing vegetation disturbance, maintaining buffers of vegetation around wetlands, streams and drainage ways, and avoiding building activities in areas of steep slopes with highly erodible soils. Use methods such as sediment ponds, sediment traps, or other facilities designed to slow water run-off and trap sediment and nutrients.
  - b. Minimize the loss of native riparian vegetation as much as possible.

- c. Include efforts to preserve and enhance EFH by adequately grading low flow channels of the proper depth and velocity to provide adequate ingress and egress to and from flood plain, such that rearing salmonids may utilize the flood plain without stranding.

3. If agriculture activity is implemented within the proposed action area, the following Conservation Recommendations should be followed:

- a. Conservation Recommendation 10 as described above should be followed.
- b. Ensure that agricultural managers should maintain riparian management zones between agriculture and the river. Riparian management zones should be wide enough to restore and support riparian functions including shading, LWD input, leaf litter inputs, sediment and nutrient control, and bank stabilization functions.
- c. Ensure that agricultural managers reduce erosion and run-off by using practices such as contour plowing and terracing, no till agriculture, conservation tillage, crop sequencing, cover and green manure cropping and crop residue, and, by maximizing the use of filter strips, field borders, grassed waterways, terraces with safe outlet structures, contour strip cropping, diversion channels, sediment retention basins and other mechanisms including re-establishment of vegetation.
- d. Ensure that agricultural managers participate in and benefit from existing programs to encourage wetland conservation and conservation reserves, avoid planting in areas of steep slopes and erodible soils and avoid disturbance or draining of wetlands and marshes.
- e. Ensure that agricultural managers incorporate water quality monitoring as an element of land owner assistance programs for water quality, and evaluate monitoring results and adjust practices accordingly.
- f. Ensure that agricultural managers minimize the use of chemical treatments within the riparian management zone. To that end, agricultural managers should: review pesticide use strategies to minimize impact to EFH; reduce pesticide application by evaluating pest problems, past pest control measures and following integrated pest management strategies; and select pesticides considering their persistence, toxicity, runoff potential, and leaching potential.
- g. Ensure that agricultural managers encourage farmers to take advantage of the conservation programs that were reauthorized in the Food, Conservation, and Energy Act of 2008 (i.e., Farm Bill).

4. If grazing activity is implemented within the proposed action area, the following Conservation Recommendations should be followed:

- a. Ensure that grazing managers utilize focused monitoring, management, and grazing regimes or special mitigation activities that allow recovery of degraded areas and maintain streams, wetlands, and riparian areas in properly functioning condition.

- b. Ensure that grazing managers establish proper streambank alteration move triggers and grazing season of use endpoint indicators to reduce the amount streambank damage and allow banks to stabilize over time, reduce the amount of the fine sediment introduced into streams; and reduce the amount of damage to streambanks which will also assist in retaining important undercut streambanks, large woody debris, and overhanging vegetation that provide cover.
- c. Reclamation should determine cumulative effects of past and current grazing operations on EFH when designing grazing management strategies.
- d. Ensure that grazing managers minimize application of chemical treatments within the riparian management zone.
- e. Ensure that grazing managers utilize innovative grazing practices such as variants of restoration grazing systems, late season riparian grazing systems, winter grazing and management of stocking rates.
- f. Encourage livestock owners to take advantage of The Conservation of Private Grazing Land Program (CPGL) and the Conservation Reserve Enhancement Program (CREP). CPGL and CREP are voluntary programs that help owners and managers of private grazing land address natural resource concerns while enhancing the economic and social stability of grazing land enterprises and the rural communities that depend on them. Technical assistance is provided by the Natural Resource Conservation Service.
- g. Ensure that grazing managers establish proper streambank alteration move triggers and endpoint indicators in combination with the other management measures intended to reduce the amount of time livestock spend in riparian areas to reduce the amount of the fine sediment introduced into streams.

The October 2016 NMFS BO included the following recommendations which will be considered by Reclamation in implementing the Selected Alternative:

- a. Reclamation should continue to implement high priority actions in the NMFS Central Valley Salmon and Steelhead Recovery Plan (NMFS 2014) to the maximum extent feasible.
- b. Flood operations and water deliveries should include ramping to prevent dewatering of habitat important to anadromous fish and be scheduled with the intention to minimize impacts on anadromous fish, where possible.

## **8.2 Cultural Resources – National Historic Preservation Act, Section 106 and Native American Graves Protection and Repatriation Act**

Reclamation is responsible for complying with Section 106 of the National Historic Preservation Act (NHPA) (54 United States Code (USC) § 300108) and its implementing regulations at 36



CFR Part 800. The Sacramento District of the U.S. Army Corps of Engineers (Corps) designated Reclamation as lead agency to act on their behalf and to fulfill both agency's collective responsibilities under Section 106, pursuant to 36 CFR 800.2(a)(2). Reclamation entered into consultation with the California State Historic Preservation Officer (SHPO) and two Indian tribes to develop a Programmatic Agreement (PA), pursuant to 36 CFR 800.14(b)(1), because this undertaking involves complex project situations and multiple undertakings. Reclamation, the Corps, and the SHPO entered into a PA for Section 106 compliance. The Indian tribes were invited to be Concurring Parties and will be added to the executed PA, should they choose to sign. The stipulations in the PA provide for Reclamation to phase the Section 106 process, and outline procedures for consulting with the SHPO and other parties. It consists of using a phased approach to conduct historic properties identification and evaluation efforts pursuant to 36 CFR § 800.4(b)(2), and a phased approach to assess effects pursuant to 36 CFR § 800.5(a)(3), as specifically provided for at 36 CFR § 800.14(b). The PA also identifies the approach for resolving adverse effects of the undertaking, should an adverse effect to historic properties be found. Under the PA, Section 106 consultations will continue with Indian tribes and other interested parties as identified throughout the process, as well as continued consultations with the signatory parties to the PA. The Selected Alternative will be implemented in accordance with the stipulations in the PA in order to take into account the effects of the undertaking on historic properties and to satisfy the requirements of Section 106. The PA was executed on September 27, 2016 and is appended to this ROD (Attachment C).

Consultations were also conducted with Indian tribes pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) regarding a Plan of Action for the discovery of Native American human remains and associated objects from Federal lands. A Burial Plan that includes procedures to be followed for discoveries of Native American human remains on Federal land (the Plan of Action) and for procedures for Native American human remains on non-federal land, pursuant to California State laws, is appended to the Section 106 PA.

### **8.3 Clean Water Act, Section 404 and Rivers and Harbors Act, Section 10**

The Selected Alternative will result in fill and dredge of jurisdictional waters of the United States, including wetlands. As a result, this Project will require authorization from the Corps pursuant to Section 404 of the Clean Water Act. In addition to affecting waters of the United States, the Selected Alternative will also result in construction in, over, or under; excavation of material from; or deposition of material into "navigable waters" of the San Joaquin River. As a result, the Project will require authorization from the Corps pursuant to Section 10 of the Rivers and Harbors Act (33 USC 403) for the construction of certain elements of the Project.

Reclamation has submitted an application for and will obtain an Individual Permit for the Selected Alternative in accordance with Section 404 of the Clean Water Act prior to the start of construction activities. A jurisdictional delineation of all waters of the United States, including wetlands, was conducted to identify areas of Corps jurisdiction within the Project site. A delineation report was submitted to the Corps and Reclamation has requested a preliminary jurisdictional determination from the Corps to facilitate the permitting process. The Corps will

document, in compliance with the requirements of U.S. Environmental Protection Agency (EPA) Section 404(b)(1) Guidelines, that the permit is being issued in the absence of practicable alternatives to the proposed discharge that would have less adverse impacts on the aquatic ecosystem. To that end, Reclamation has submitted Clean Water Act Section 404(b)(1) Information to the Corps.

## **8.4 Clean Water Act, Section 401 and Clean Water Act, Section 402**

Reclamation is coordinating with the Central Valley RWQCB to obtain a Section 401 Water Quality Certification, which will occur prior to the start of construction activities. The application describes the proposed action and construction techniques and methods to minimize or avoid erosion, turbidity, and other adverse water quality effects.

The Selected Alternative will result in discharges of waste into waters of the State, which include “any surface water or ground water, including saline waters, within the boundaries of the State.” A National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activity permit will be required for construction-related discharges to surface waters. Reclamation will submit Permit Registration Documents, including a Notice of Intent form to discharge stormwater, a storm water pollution prevention plan (SWPPP), and other documents to the Central Valley RWQCB. The SWPPP will be prepared by a Qualified SWPPP Developer and will list best management practices to protect stormwater runoff. Implementation of these best management practices will be overseen by a Qualified SWPPP Practitioner.

## **8.5 State Lands – Land Use Lease**

The Selected Alternative will directly affect lands, such as the San Joaquin River, under the jurisdiction of the CSLC. The Selected Alternative will therefore require a State lands lease agreement. Reclamation has submitted an application that includes a project description, supporting environmental data, and payment of appropriate fees, and will obtain a State Lands Use Lease from the CSLC prior to the start of construction activities.

## **8.6 Williamson Act Contracts and Land Use/Zoning**

The California Land Conservation Act (Government Code § 51200 et seq.) of 1965, commonly known as the Williamson Act, provides a tax incentive for the voluntary enrollment of agricultural and open space lands in contracts between local government and landowners. Some lands within the Project area are currently in Williamson Act contracts. As stipulated by the Government Code (§ 51290–51295), Reclamation has notified the Director of Conservation and the counties (Fresno and Madera) that administer the Williamson Act contracts of their intention to construct a public improvement within an existing preserve. While the Selected Alternative may be considered a “compatible use” under the Williamson Act, existing Williamson Act contracts are deemed null and void upon acquisition by a government agency. After the land

under contract is acquired, Reclamation will notify the Director of Conservation within 10 working days. The notice will include any changes to the Selected Alternative since the original submittal to the Director of Conservation. At this point, if the land has been acquired by a Federal agency, the existing contract will be deemed null and void.

## **8.7 Federal Clean Air Act and San Joaquin Valley Air Pollution Control District Regulation VIII Dust Control Plan**

The Clean Air Act establishes national ambient air quality standards. For the Project, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has the authority to issue permits and ensure compliance with air quality regulations. The EIS/R includes a conformity analysis consistent with the State Implementation Plan (SIP) developed pursuant to the Clean Air Act. The Department of Water Resources previously submitted an air impact analysis application and associated filing fees on behalf of Reclamation for the entire SJRRP (District Indirect Source Review Project No. C20100109). Reclamation will coordinate with the SJVAPCD to either update this application or submit a new Air Impact Analysis application, will submit a Dust Control Plan, and will also seek a Portable Equipment Certification for construction of the Selected Alternative. Reclamation will coordinate with the SJVAPCD on specific requirements for general conformity and mitigation requirements and a Voluntary Emissions Reduction Agreement and will pay any applicable off-site mitigation fees before initiation of construction.

## **9.0 Mitigation Monitoring and Environmental Commitments**

Reclamation has adopted all practicable means to avoid or minimize environmental harm from the Selected Alternative and is committed to implementing the measures identified in the EIS/R. The conservation measures, environmental commitments, and mitigation measures adopted by Reclamation as part of this ROD are detailed in Attachment B and are based on and consistent with the Conservation Strategy, as described in the SJRRP ROD (2012). Attachment B includes a summary of all the conservation measures, environmental commitments, and mitigation for the Selected Alternative, and provides a method for tracking and reporting on the implementation of these commitments and measures. Reclamation prepared Attachment B to guide the completion of all required conservation measures, environmental commitments, and mitigation measures in an effective manner during Project implementation.

Reclamation will implement a monitoring and enforcement program to ensure that identified conservation measures, mitigation measures, and environmental commitments are accomplished, as identified in Attachment B. If monitoring shows that mitigation is inadequate, Reclamation will confer with the appropriate Federal regulatory agencies, state regulatory agencies, implementing agencies, parties to the Settlement, landowners, or other stakeholders as necessary to ensure successful completion and implementation of alternate or substitute mitigation to achieve an adequate offset of environmental impacts. In this case, any remaining portions of the

Selected Alternative yet to be implemented would not proceed until further environmental compliance documentation has been completed.

## 10.0 Public Issues and Areas of Controversy

During multiple SJRRP meetings and workshops, the public and agency resources staff identified the areas of concern summarized below. The Final EIS/R, Part II – Response to Comments, provides a comprehensive analysis of these issues.

The public comment period for the Draft EIS/R began June 9, 2015, and ended August 10, 2015. Three public hearings were held to receive verbal and written comments on the Draft EIS/R. The hearings were held as follows:

- Wednesday, July 8, 2015, in Fresno, California
- Thursday, July 9, 2015, in Los Banos, California
- Friday, July 10, 2015, in Sacramento, California

The lead agencies received comments on the Draft EIS/R by mail, fax, and e-mail, and through transcripts of comments made at public hearings. A total of 14 letters with 288 comments were received during the public comment period, in which commenters expressed concern about the following:

- *The lack of the Mendota Pool Fish Screen in Alternative B (the preferred alternative) in the Draft EIS/R.* To address this concern, the conditional language regarding the inclusion of the Mendota Pool Fish Screen in Alternative B in the Draft EIS/R was removed in the Final EIS/R, and Alternative B, the Selected Alternative, now clearly includes construction of a fish screen at Mendota Pool.
- *How seepage management would be addressed in the Project area and in downstream reaches.* Additional detail was included in the Final EIS/R to describe the seepage control measures in the current design for the Compact Bypass and how the SJRRP's seepage management actions would be implemented in the Restoration Area.
- *Regional subsidence issues in the San Joaquin Valley and its potential effects on the SJRRP and the Project.* In addition to describing recent subsidence information collected by the SJRRP Geodetic Control Network, the Final EIS/R includes a section describing how ground subsidence effects are accounted for in the Project design.
- *The adequacy of the current level of design and the level of detail in the EIS/R for evaluating Project operation and maintenance (O&M) activities.* The EIS/R is based on the level of engineering and planning adequate to identify environmental impacts of the Project alternatives and to identify appropriate mitigation measures. This is consistent with NEPA, in which the environmental analysis process occurs before the completion of final design.
- *The availability of funding for the entire SJRRP, for the Project construction actions, and for Project O&M activities such as flood management actions.* Part II of the Final EIS/R

describes the SJRRP's funding sources and how construction and O&M activities will be funded for the Project.

- *Flood management operations, specifically related to then-existing channel capacity and flood impacts in river reaches upstream and downstream of the Project area.* The EIS/R includes a discussion of how Restoration Flows would be limited to channel capacity, how that capacity is assessed, and how levee stability evaluations and factors of safety are used in the evaluation. The Final EIS/R also includes a description of the ongoing efforts to characterize levee stability in the Restoration Area, how levee stability projects would be implemented where needed in downstream reaches prior to increases in flows through Reach 2B, and how strengthening levees in Reach 2B would cause little to no change in flood hydrographs in downstream areas.

These issues are addressed in detail in Section II.2, Master Comment Responses, and in the resource chapters, Sections 4.0 to 24.0, of the Final EIS/R.

## **11.0 Comments Received on Final EIS/R**

Reclamation's Notice of Availability of the Final EIS/R was published in the Federal Register on July 8, 2016, and the EPA's Notice of Availability was published on July 15, 2016. The EIS/R was posted on Reclamation's website, and copies were distributed to those who requested a copy. A press release was released on July 8, 2016, and was sent to participants in public meetings and commenters on the Draft EIS.

Reclamation received comments from the following six (6) organizations or individuals after release of the Final EIS/R. Comments received from these organizations and individuals were considered in the decision to implement the Selected Alternative.

- Jean Public (July 8, 2016)
- Rob Simpson (July 11 and 12, 2016)
- Santa Rosa Rancheria Tachi-Yokut Tribe (July 27, 2016)
- Wonderful Orchards (August 8, 2016)
- EPA (August 11, 2016)
- Dennis Fox (August 22, 2016)
- Central California Irrigation District, San Joaquin River Exchange Contractors Water Authority, and San Joaquin River Resources Management Coalition (August 23, 2016)

A summary of these comment letters and communications is as follows.

An email was received from Jean Public which raised concerns about the cost of the project and did not favor funding the project because the commenter does not favor government spending in general.

One phone call and two emails were received from Rob Simpson. The commenter has interest in building a new reservoir outside of the SJRRP area as an alternative to the Temperance Flat reservoir, and filling the new reservoir in part with San Joaquin River floodwaters via the Mendota Pool canals. The commenter was interested in understanding the Mendota Pool area operations. The commenter provided emails containing supplemental material on water storage options for the San Joaquin Valley. Water storage alternatives to the Temperance Flat reservoir do not relate to this Project. Control and diversion of San Joaquin River floodwaters is also not within the scope of this Project.

An email was received from Santa Rosa Rancheria Tachi-Yokut Tribe stating they would like to discuss the potential for the Project to impact known cultural and burial sites. Reclamation is further coordinating with the Santa Rosa Rancheria Tachi-Yokut Tribe as requested. As described in Section 8.2 above and in Attachment C, Reclamation has invited the Santa Rosa Rancheria Tachi-Yokut Tribe as well as other federally recognized tribes known to have an interest in cultural resources in the vicinity of the Project to participate in the NHPA Section 106 process.

A letter was received from Wonderful Orchards noting that Wonderful Orchards holds pre-1914 water rights to divert at Lone Willow Slough and requesting that the associated estimated 125 cfs diversion be included in the diversions during flood control releases from Friant Dam. The Final EIS/R, Section 2.2.4, described this diversion during flood releases as being for the purposes of the Exchange Contractors. Reclamation acknowledges that Wonderful Orchards also claims rights associated with this diversion. Wonderful Orchards further states their understanding that Reclamation does not currently consider fish screens to be required but will incorporate fish screens at Lone Willow Slough and Big and Little Bertha pumps if determined to be necessary in the future. Wonderful Orchards requests that the installation and maintenance of these screens be incorporated into the Project operations and costs. If determined to be necessary in the future for the protection of Federally-listed species and subject to appropriate environmental compliance, Reclamation will incorporate installation and maintenance of the fish screens at Lone Willow Slough and Big and Little Bertha pumps into the Project operations and costs.

A letter was received from the EPA affirming their support for the SJRRP and acknowledging the inclusion of additional information in Part II, Response to Comments, to the Final EIS/R.

A letter was received from Dennis Fox raising concerns about invasive vegetation management, proposed riparian plantings, aeration of Friant Dam releases, the channel design, and the conclusions of, and funding for, biological studies in Reach 1 gravel pits. Comments about aerating Friant Dam releases and the Reach 1 gravel pits do not relate to this Project. Regarding invasive vegetation management, the Project includes removal of invasive non-native species (including *Arundo donax*), and the methods described in the *Invasive Vegetation Monitoring and Management Environmental Assessment* would be used in the Project area to remove invasive species. This can be found in Attachment A: Project Description, Section 2.5.2, and in the Final EIS/R, Chapter 2.0, "Description of Alternatives," Section 2.2.6, under Floodplain and Riparian Habitat. Regarding proposed riparian plantings, the Project includes active restoration planting of native riparian species along both sides of the river up to 450 feet from the bank. Two of the specified purposes of this planting are shading and bank stabilization. This can be found in Attachment A: Project Description, Section 2.5, and in the Final EIS/R, Chapter 2.0,

“Description of Alternatives,” Section 2.2.6, under Floodplain and Riparian Habitat. Regarding the channel design, the existing Reach 2B channel is a highly meandering channel, and no changes to the channel alignment are proposed, with the exception of the Compact Bypass, which includes a gently meandering low-flow channel. A typical riffle-pool channel, which often develops in gravel bedded streams, is not applicable to Reach 2B due to the sand bed substrate; however, the channel does, and will continue to, exhibit pools at channel bends and shallows on straighter sections.

A letter was received from Central California Irrigation District, San Joaquin River Exchange Contractors Water Authority, and San Joaquin River Resources Management Coalition commenting on the construction impacts of the Project, the Mendota Pool Fish Screen, and modifying deliveries to the Exchange Contractors to decrease fishery losses at Mendota Pool.

- In reference to the construction impacts of the Project, the commenters request that the Project construction be phased so that the floodplain and associated levees are built prior to constructing the Compact Bypass in order to prevent seepage impacts along the Columbia Canal side of the river. Regardless of the order of construction phases, Reclamation limits Restoration Flows and will continue to limit Restoration Flows in the San Joaquin River to levels that substantially avoid groundwater seepage impacts. Reclamation does this through an extensive groundwater monitoring network, groundwater level thresholds set in each well, and flow operations which keep Restoration Flows at levels such that groundwater levels do not rise above thresholds. This approach is documented in the Seepage Management Plan. More information is provided in the Final EIS/R, Part II – Response to Comments, Master Comment Response-2: Seepage Management.
- The commenters request that the construction implementation should allow for continuous operation of all water supply and flood control facilities. Reclamation will implement construction so that current operations of water supply and flood control facilities located in the Project area are available, accessible, and unimpaired until newly constructed facilities, as applicable, are ready for operation.
- The commenters request that the Project design take into account the water differentials and potential seepage that would occur during operations of the Compact Bypass and Mendota Pool control structures. Reclamation’s design process will take these conditions into account.
- The commenters acknowledge and appreciate the inclusion of the Mendota Pool Fish Screen into the Project, but note that the document states there is an “increased likelihood that the SJRRP could include this feature in the selected alternative for the Project;” they request that this conditional commitment be removed in favor of committing to build the fish screen. The Selected Alternative includes the construction of the Mendota Pool Fish Screen.
- In reference to modifying deliveries to the Exchange Contractors to decrease fishery losses at Mendota Pool, the commenters describe what they see as shortcomings of the entrainment assessment performed by Reclamation to determine the need for the Mendota Pool Fish Screen. The Selected Alternative includes the construction of the Mendota Pool Fish Screen. If the entrainment analysis is updated in the future, Reclamation will consider incorporating the factors mentioned by the commenters into

the analysis (*i.e.*, Shasta Lake storage and pool requirements, Delta pumping restrictions, San Luis Reservoir storage, and salmon population dynamics).

- Attached to the letter are comments previously provided by Central California Irrigation District as a Cooperating Agency participating in the NEPA process. These comments were considered during the preparation of the Final EIS/R.
- The letter also attached comments previously provided by the San Joaquin River Exchange Contractors Water Authority, San Joaquin River Resources Management Coalition, Central California Irrigation District, and Columbia Canal Company during the public comment period on the Draft EIS/R. These comments were considered during the preparation of the Final EIS/R and responses to these comments can be found in the Final EIS/R, Part II – Response to Comments, Section II.6.2, Responses to the Exchange Contractors).