RECLAMATION

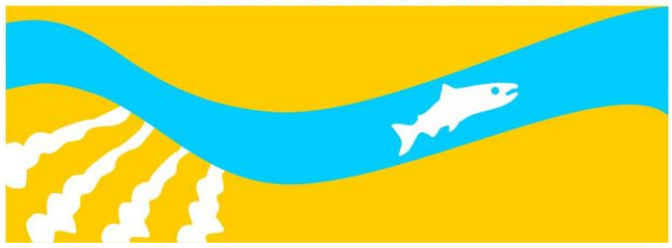
Managing Water in the West

Draft

Environmental Assessment

Interim San Joaquin Salmon Conservation and Research Facility Operations & Maintenance Funding

SAN JOAQUIN RIVER RESTORATION PROGRAM



U.S. Department of the Interior
Bureau of Reclamation

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Abbreviations and Acronyms

APE	area of potential effect
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
Delta	Sacramento-San Joaquin Delta
DWR	California Department of Water Resources
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
elevation	elevation in feet above mean sea level
ESA	Federal Endangered Species Act of 1973, as amended
FONSI	Finding of No Significant Impact
FPA	Friant Power Authority
FRFH	Feather River Fish Hatchery
FWCA	Fish and Wildlife Coordination Act
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act of 1918
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRDC	Natural Resources Defense Council
O&M	operations and maintenance
OCID	Orange Cove Irrigation District
Porter-Cologne	Porter-Cologne Water Quality Control Act
Reclamation	U.S. Department of the Interior, Bureau of Reclamation

Restoration Area	San Joaquin River from Friant Dam to confluence with Merced River
SJFH	San Joaquin Fish Hatchery
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
State	State of California
SWRCB	State Water Resources Control Board
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WDR	Waste Discharge Requirements

1.0 Introduction

The San Joaquin River Restoration Program (SJRRP) was established in 2006 to implement the Stipulation of Settlement in *NRDC, et al. v. Kirk Rodgers, et al.* (Settlement). The SJRRP is a comprehensive long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of Merced River and restore a self-sustaining Chinook salmon (*Oncorhynchus tshawytscha*) fishery in the river while reducing or avoiding adverse water supply impacts from restoration flows. The Settlement states in Paragraph 14:

> *The Secretary, through the FWS, and in consultation with the Secretary of Commerce, the DFG* [CDFW], *and the Restoration Administrator, shall ensure that spring and fall run Chinook salmon are reintroduced at the earliest practical date after commencement of sufficient flows and the issuance of all necessary permits.*

The U.S. Fish and Wildlife Service (USFWS) is currently coordinating with the National Marine Fisheries Service (NMFS) for enhancement of species permits under Section 10 of the Endangered Species Act (ESA) for broodstock collection and direct translocation of spring-run Chinook salmon. The permit applications described specific criteria, guidelines, and measures to be followed by USFWS during implementation of SJRRP spring run Chinook salmon actions. Recognizing the status of spring-run Chinook salmon and the limited availability of donor fish from other populations in the Central Valley, artificial propagation was an essential component of USFWS's approach to establish a population described in the applications. The applications identified the Interim San Joaquin Salmon Conservation and Research Facility (Interim Facility) and the future San Joaquin Salmon Conservation and Research Facility (Conservation Facility) as the primary captive rearing facilities for spring run Chinook salmon. Without the Interim Facility and the future Conservation Facility, the USFWS would not be able to achieve the Settlement's requirement to establish a naturally-reproducing and self-sustaining population.

1.1 Background

The Interim Facility is a small, temporary, pilot-scale hatchery facility adjacent to the San Joaquin River Fish Hatchery (SJFH) approximately 1-mile downstream of Friant Dam, in the town of Friant, Fresno County, California. Both facilities are operated by the California Department of Fish and Wildlife (CDFW). The SJFH has been supplying trout stock for Sierra foothill and Central Valley lakes, reservoirs, ponds and creeks in twelve California counties since the 1950s. Currently the water flow supplied from the U.S. Bureau of Reclamation's (Reclamation) Friant Dam facility to the SJFH is 35 cubic feet per second (cfs). Water is conveyed through an 18-24-inch pipeline tapped into Friant Dam's river outlet penstocks and/or a 30-inch diameter pipeline connected to the Friant-Kern Canal, and then through a power plant operated by Orange Cove Irrigation District (OCID) which discharges into a 44-inch diameter pipeline connected to the SJFH.

The Interim Facility is intended to operate as a conservation facility, differing from conventional hatcheries in that it is managed in such a way as to maximize genetic diversity of its captive broodstock. Conventional hatcheries operate on streams where returning adults may be captured, spawned in captivity, and their progeny typically returned to the system as juveniles. The SJRRP has limited opportunities to capture fall-run Chinook salmon in the San Joaquin River above the Merced River confluence, and no opportunity to capture spring-run Chinook salmon. Spring-run will be acquired from Feather River Fish Hatchery and donor streams consistent with ESA Section 10 permits. Relatively small numbers of donor fish will be raised in the Interim Facility and eventually the full-scale Conservation Facility over several years in captivity to maturity. CDFW will spawn these fish in captivity at the Conservation Facility, and their offspring will be reintroduced to the San Joaquin River. This captive broodstock strategy enables large-scale fish stocking with minimal impacts to donor streams and has been used successfully at other sites including the Livingston Stone National Fish Hatchery on the Sacramento River.

Construction costs for the Conservation Facility will be funded by CDFW through Proposition 84 state bond funds. CDFW constructed and funded the operations of the Interim Facility through June 30, 2012 and has requested funding from Reclamation for future operations and maintenance at the Interim Facility.

1.2 Description of the Proposed Action

Reclamation will fund CDFW's operation of the existing Interim Facility from July 1, 2012- December 31, 2015. CDFW currently estimates the Conservation Facility will be operational by late 2015.

Operation and maintainance of the Interim Facility would include the development and maintenance of a genetically diverse brood stock of spring-run Chinook salmon, and potentially fall run Chinook. CDFW will also operate the Interim Facility to conduct and support research that furthers conservation of the Chinook salmon species in the SJRRP Restoration Area.

Under the Proposed Action the Interim Facility will continue to operate using a portion of the 35 cfs SJFH water supply. The Proposed Action does not include an increase in combined SJFH and Interim Facility water supply.

1.3 Related Actions

1.3.1 San Joaquin River Restoration Program

In Water Year 2010 Reclamation began releasing Interim Flows required by Paragraph 15 of the Settlement to collect relevant information concerning future channel improvements and reintroduction actions. In 2012 Reclamation, as the federal lead agency, and California Department of Water Resources (DWR), as the state lead agency, produced a Programmatic Environmental Impact Statement/ Environmental Impact

Report (PEIS/R) for the SJRRP which analyzes flows at a project level and all SJRRP actions at a program level. Examples of channel and facilities modifications subject to ongoing or future project-level analyses include constructing and operating new pumping infrastructure along the lower reaches of the river to recapture flows; constructing a Mendota Pool Bypass channel; modifying channel capacity in to accommodate at least 4,500 cfs; modifying or removing water control structures; and filling gravel pits. Environmental documents for the site-specific projects will be tiered off of the PEIS/R.

1.3.2 San Joaquin Salmon Conservation and Research Facility

CDFW is currently planning the development of the Conservation Facility adjacent to the existing SJFH and Interim Facility sites to rear spring-run Chinook salmon. The full expansion is planned for construction in 2015. Once built, the facility is expected to continue salmon operations through 2025. The facility will be operated in accordance with the "Hatchery and Genetic Management Plan," prepared by the SJRRP, dated December 2010. Fish stocks will be selected from waterways tributary to the Delta.

Reclamation is currently planning water supply infrastructure to provide 20 cfs to the Conservation Facility from Friant Dam. This action would also include a new water service agreement between Reclamation and CDFW for supply of CVP water for non-consumptive use at the Conservation Facility. While related to the Proposed Action, these actions are severable and do not necessarily result from the Proposed Action so they do not receive further consideration in the current analysis.

1.3.3 Chinook Salmon Reintroduction

SJRRP will reintroduce spring-run Chinook salmon to the San Joaquin River consistent with ESA Section 10 permitting and National Environmental Policy Act (NEPA)/ California Environmental Quality Act (CEQA) documentation. Potential methods include direct translocation from donor streams and releases of juveniles reared at the Conservation Facility. Reintroduction methods are described in the "Reintroduction Strategy for Spring Run Chinook Salmon", prepared by SJRRP, dated January 2011.

Interim Facility operations and maintenance through December 31, 2015 will enable development of multiple years of captive broodstock, but will not include substantial progeny available for release to the San Joaquin River. Reintroduction and any potenial environmental impacts will be addressed by the relevant fisheries agencies.

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2.0 Compliance with NEPA

2.1 Purpose and Need

NEPA regulations require a statement of "the underlying purpose and need to which the agency is responding in proposing the alternatives, including the Proposed Action" (40 Code of Federal Regulations (CFR) 1502.13).

The purpose of the action is to fund the operations and maintenance of the Interim Facility from July 1, 2012- December 31, 2015. The Interim Facility will support captive spring-run Chinook salmon broodstock, a critical part of the SJRRP strategy to reintroduce salmon, implement initial phases of Paragraph 14 of the Settlement, and achieve the Restoration Goal.

2.2 Federal Action and State Action

The Proposed Action is for Reclamation to fund operations and maintenance of the Interim Facility. The extent of Reclamation's involvement would be management of a funding agreement, participation on technical workgroups, and participation on management workgroups to ensure use of federal funding results in the Interim Facility achieving its intended purpose in terms of broodstock development, fish production, and research. Reclamation woud not provide any funding for construction, or increase in water supply to CDFW. CDFW has discretion over how to priortize 35 cfs currently provided to the SJFH, and is currently addressing any necessary infrastructure reconfiguration (such as installation of water recirculation equipment) at the Interim Facility incidental to that decision.

2.3 Level of Analysis

Reclamation has concluded that the Proposed Action is not categorically exempt because:

1. The action would occur in an "ecologically significant or critical area" (43 CFR 46.215(b)), referring to the SJRRP.

2. The action would have substantial indirect beneficial impacts to threatened and endangered species, namely spring-run Chinook salmon (43 CFR 46.215(h)).

3. The action could involve unresolved conflicts concerning alternative uses of available resources.

4. The action has a direct relationship to other actions, such that the proposed action could be considered individually insignificant it would be cumulatively significant when considered along those other related actions (43 CFR 46.215(f)).

In this case, the Proposed Action plays a supportive role in a related action with significant beneficial environmental effects – the SJRRP.

This Environmental Assessment (EA) provides an abbreviated review of the existing conditions at the Interim Facility site, the nearby San Joaquin River, and adjacent land uses in order to effectively address direct, indirect, and cumulative impacts of the Proposed Action. A substantial amount of information has already been gathered on the effects of the SJRRP on the San Joaquin River watershed in the PEIS/R. Applicable information regarding existing conditions and other important contextual information are summarized from the SJRRP documents to support the analysis of direct, indirect, and cumulative effects at a level Reclamation believes to be commensurate with the limited size of the action.

2.4 Alternatives Considered

2.4.1 No Action Alternative

Under the No Action Alternative, Reclamation would not provide operations and maintenance funding for the Interim Facility operations. CDFW would have to look elsewhere for financial assistance to run the Interim Facility operation. In the worst circumstance, this would delay development of spring-run Chinook salmon broodstock and other fisheries actions on the San Joaquin River.

2.4.2 Fund Interim Facility Operations and Maintenance (Proposed Action)

The Preferred Alternative would include Reclamation providing financial assistance for CDFW's operation and maintenance of the Interim Facility. The actual commitment of funds will be made once a funding mechanism is in place between CDFW and Reclamation and contingent upon the availability of federal funding.

3.0 Existing Site Conditions

3.1 Hatchery Facility

A fish hatchery has been located in Friant as early as 1932 when the Friant Bass Hatchery was opened by a local sportsman club. The San Joaquin River Fish Hatchery (SJFH) was built on the same site as the Friant Bass Hatchery in 1955. The SJFH began trout rearing operations the following year and has done so continually since. The SJFH currently provides rainbow trout for planting in foothill lakes, streams, and ponds in twelve California counties.

The SJFH is located just above the San Joaquin River at an elevation of 320 feet above sea level, approximately 1 mile downstream of Friant Dam. Settling ponds stretch out from the SJFH to the west in a cascading series down to the floodplain and into the river. The settling ponds remove solids from the SJFH effluent before it reaches the San Joaquin River. A worm farm uses the effluent water that gravity feeds into two of the settling ponds.

Non-paved areas on and around the SJFH grounds support mostly non-native grasses, and ruderal vegetation (species which typically colonize disturbed areas), with some ornamental non-native plants. Weeds and non-native grasses are regularly maintained through mowing and herbicide use. Eucalyptus and other ornamental tree species are common in the area. Former dredge ponds used to settle out solids from SJFH water before it is released into the San Joaquin River are perennially inundated and contain a range of wetland plant species including broadleaf cattail and willows.

Common species in the ruderal margins around the SJFH include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild oats (*Avena sativa*), hare barley (*Hordeum murinum ssp. leporinum*), and rattail fescue (*Vulpia myuros*). Forbs commonly occurring in non-native grasslands on site include red-stem filaree (*Erodium cicutarium*), broad-leaf filaree (*Erodium botrys*), telegraph weed (*Heterotheca grandiflora*), and smooth cat's-ear (*Hypochaeris glabra*).

3.2 Adjacent Water Control and Hydropower Facilities

Friant Dam is located approximately one mile upstream of the SJFH facility. The concrete dam structure was completed in 1942 for flood control and to provide water primarily for agricultural uses. The dam is a part of the CVP and contributes to the network of canals, laterals, and ditches that supply water for agricultural and municipal uses as far south as Kern County. Two canals flow off of Millerton Lake: the Friant-Kern Canal and the Madera Canal. Water from these canals are diverted and delivered through smaller structures maintained by regional water authorities in the Central Valley. Water releases from Friant Dam support a hydropower plant run by the Friant Power Authority

(FPA) that produces 25 megawatt hours of power per year. Other smaller hydropower generation facilities are located between the dam and the SJFH on the existing fishwater outlet that feeds into the SJFH, on the Madera Canal, and on the Friant-Kern Canal.

3.3 Adjacent Land Uses

The SJFH facility is surrounded by residences to the north, west, and south. To the east is a strip of open space grassland separating the SJFH and the Friant US Post Office.

4.0 Affected Environment and Environmental Consequences

This section provides an overview of the physical environment and existing conditions that could be affected by the Proposed Action consistent with NEPA guidelines. Each resource discussion in this section will evaluate the impacts of the Proposed Action's alternatives. The baseline conditions assumed in this document consist of the existing physical environmental conditions as of July 2012. Therefore, the baseline environment includes the existing releases of Interim Flows on the San Joaquin River between Friant Dam and the confluence of the Merced River, operation of the SJFH, and operation of the Interim Facility.

CEQ regulations for implementing NEPA specify that environmental documents must succinctly describe the environment in the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than necessary to understand the impacts of the alternatives. Data and analysis must be commensurate with the importance of an impact, with less important material summarized, consolidated, or simply referenced.

4.1 Biological Resources

4.1.1 Open Space and Wildlife Habitat

4.1.1.1 Affected Environment

Interim Facility operations and maintenance will occur in an area that is developed and not considered open space or wildlife habitat.

4.1.1.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not provide funding to CDFW for operations and maintenance of the Interim Facility. It is reasonable to assume CDFW would be unable to continue funding operations and maintenance nor secure financial assistance from an alternative source, resulting in delays to development of a broodstock program and other fisheries actions. Under the No Action Alternative, there would be no change in existing open space and wildlife habitat in the project area.

Proposed Action

The Proposed Action would include Reclamation providing financial assistance to CDFW for operation and maintenance of the Interim Facility until the Conservation Factility is complete. Operations and maintenance of the Interim Facility will have no direct or indirect adverse impacts on open space or wildlife habitat.

4.1.2 Aquatic Resources: Riparian, Riverine, and Wetland Habitats

4.1.2.1 Affected Environment

There are no wetlands or other waters of the U.S. within the Interim Facility site which is a leveled, compacted gravel equipment parking area.

4.1.2.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no change in existing riparian, riverine, and wetland habitats in the project area.

Proposed Action

Operations and maintenance of the Interim Facility resulting from Reclamation's Proposed Action would have no direct impact to riparian or wetland habitat.

4.1.3 Protected Species, Critical Habitat, and Essential Fish Habitat

4.1.3.1 Affected Environment

The Settlement requires the USFWS to submit an application to the NMFS for an ESA Section 10(a)(1)(A) permit for scientific research and the propagation and transport of an experimental population of endangered species. A Section 10(a)(1)(A) permit has been approved by the NMFS that will allow CDFW to collect, transport and propagate spring-run Chinook salmon. A second 10(a)(1)(A) permit will need to be approved prior to translocation of spring-run Chinook salmon to the San Joaquin River.

The Magnuson-Stevens Fishery Conservation and Management Act established a management system for national marine and estuarine fishery resources. The purpose of the Act is to conserve and manage the fisheries resources off the U.S. coasts (including anadramous fish) and to protect and promote the aquatic habitat used by these species, designated as EFH. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." All Federal agencies are required to consult with NMFS regarding actions or proposed actions permitted, funded, or undertaken that may adversely affect "essential fish habitat." The Act states that migratory routes to and from spawning grounds of anadromous fish are considered essential fish habitat. The San Joaquin River above the confluence with the Merced River is currently designated as Essential Fish Habitat for Chinook salmon. It was designated by NMFS due to the presence of suitable spawning habitat and in anticipation of reintroduction of the fish.

Federally-listed threatened and endangered species, candidate species and designated critical habitat (CH) that may be present in the Friant, California 7.5-Minute, 1:24,000 scale USGS Quadrangle are identified in Table 4-1. Critical Habitat within 5 miles of the project area includes Vernal Pool Fairy Shrimp Critical Habitat, California Tiger Salamander Critical Habitat, Fleshy Owl's Clover Critical Habitat, and San Joaquin Valley Orcutt Grass Critical Habitat.

Table 4-1.
Federally-listed threatened, endangered and candidate species, and designated critical habitat (CH) for listed species in the Friant, California 7.5-Minute USGS Quadrangle

Species Common Name	Species Scientific Name	Status
Vernal pool fairy shrimp	*Branchinecta lynchi*	Endangered
Vernal pool fairy shrimp CH	*Branchinecta lynchi*	Designated
Conservancy fairy shrimp	*Branchinecta conservation*	Endangered
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Threatened
Delta smelt	*Hypomesus transpacificus*	Threatened
Central Valley steelhead	*Oncorhynchus mykiss*	Threatened
California tiger salamander	*Ambystoma californiense*	Threatened
California tiger salamander CH	*Ambystoma californiense*	Designated
California red-legged frog	*Rana draytonii*	Threatened
Blunt-nosed leopard lizard	*Gambelia sila*	Endangered
Giant garter snake	*Thamnophis gigas*	Threatened
Fresno kangaroo rat	*Dipodomys nitratoides exilis*	Endangered
San Joaquin kit fox	*Vulpes macrotis mutica*	Endangered
Fleshy (=Succulent) owl's clover	*Castilleja campestris* ssp. *succulenta*	Threatened
Fleshy (=Succulent) owl's clover CH	*Castilleja campestris* ssp. *succulenta*	Designated
San Joaquin Orcutt grass	*Orcuttia inaequalis*	Threatened
San Joaquin Orcutt grass CH	*Orcuttia inaequalis*	Designated
Hartweg's golden sunburst	*Pseudobahia bahiifolia*	Endangered

The hatchery site does not provide suitable habitat for the above listed species. There is no designated Critical Habitat within the project area.

Large populations of bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaeto*) are known to occur around Millerton Lake (USBR, 2010) and have been observed along the San Joaquin River in the last 20 years. Both birds are protected under the Band and Golden Eagle Protection Act and Migratory Bird Act. The wintering population of bald eagles are known to forage below Friant Dam along the San Joaquin River with individuals observed near the gravel pits by birders and during field surveys by biologists surveying the area immediately downstream of the Hatchery as a part of the Lost Lakes Master Plan (Live Oak Associates, 2008).There are several mature trees, shrubs, and emergent wetland vegetation near the Interim Facility that may provide suitable nesting habitat for migratory birds.

4.1.3.2 Environmental Consequences

No Action

Since there is no suitable habitat for federally-listed species or EFH present at the Interim Facility, there would be no direct or indirect effects on protected species or EFH.

Operations of the Interim Facility is not expected to harm or harass nesting migratory birds, including bald eagle or golden eagle who may forage in the area since no trees or other vegetation would be disturbed and equipment use would be similar to that already used within the Hatchery.

Proposed Action

The action to approve the funding of the operations and maintenance activities at the Interim Facility will have no direct adverse impact to special status species protected under the ESA; designated critical habitat for ESA protected species; designated Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act; migratory birds protected by the Migratory Bird Treaty; and the Bald and Golden Eagle Protection Act. The Proposed Action will indirectly have a cumulative beneficial effects from the spring-run Chinook salmon reintroduction efforts of the SJRRP.

4.2 Physical Environment

4.2.1 Water Supply, Water Quality and Hydrology

4.2.1.1 Affected Environment

Direct discharges from hatcheries are regulated by the U.S. Environmental Protection Agency (USEPA) under Section 402 of the Clean Water Act (CWA). National Pollution Discharge Elimination System (NPDES) regulations specify that an NPDES permit is required for the discharge of concentrated aquatic-animal production facilities (USBR, 2011). USEPA's regulatory authority to issue NPDES permits have been delegated to the California State Water Resources Control Board and its nine regional boards.

The Porter-Cologne Water Quality Control Act is a California State law. Under Porter-Cologne, projects that will affect waters of the State must meet waste discharge requirements (WDR). WDR are typically issued with the water quality certification under Section 401 of the CWA. WDR are determined based on water quality control basin plans. Each plan sets forth water quality standards for surface water and groundwater and actions to control point and non-point sources of pollution to achieve those standards. The plan that covers the study area is Water Quality Control Plan for the Sacramento and San Joaquin River Basins. CDFW is responsible for demonstrating compliance with the Porter-Cologne for the Interim Facility operations and maintenance.

Downstream water quality can be degraded as a result of discharge from aquaculture facilities. These impacts may include:

- increased water temperature,
- decreased dissolved oxygen,
- changes in water chemistry (pH and salinity),
- increased nutrient inputs, and

- increased suspended solids.

Water discharged from the Interim Facility may contain food, waste, soluble metabolites, algae, parasites and disease microorganisms, drugs, and other chemicals, all of which have the potential to alter instream water quality. Many changes in water quality parameters associated with these inputs have the potential to degrade aquatic habitat quality for salmonids and other taxa that are sensitive to water quality impairments, such as macroinvertebrates.

4.2.1.2 Environmental Consequences

No Action

The No Action Alternative will not result in an increase in discharge to the San Joaquin River as the Interim Facility would operate on a portion of the 35 cfs water supply currently dedicated to the SJFH.

At any given time, the hatchery contains 1 million rainbow trout and other fish. Under the No Action Alternative, the addition of 1,000 additional fish to the hatchery stock (0.1 percent increase) would lead to a minor increase in the concentration of organic waste materials in the wastewater. Since there would be no increase in water use over the amount already provided to the hatchery, the volume of the wastewater discharging from the facility would not change. The increase in organic settable material and other hatchery waste products would be minimal and not expected to exceed the effluent limitations set forth in the hatchery's NPDES permit.

Proposed Action

The Proposed Action will not result in an increase in discharge to the San Joaquin River as the Interim Facility would operate on a portion of the 35 cfs water supply currently dedicated to the SJFH.Water discharged from the Interim Facility would enter the effluent treatment system for the hatchery and the Interim Facility would be subject to compliance with NPDES requirements, Sacramento and San Joaquin River Basin Plan limitations, and regular monitoring of water quality within Interim Facility and the SJFH for fish health. These measures are protective of beneficial uses of the San Joaquin River, including cold and warm water fisheries. Therefore, due to the compliance of these plans, impacts to water quality associated with discharges from the Conservation Facility are considered less than significant. The Proposed Action will have no adverse impact on water supply in the region or increased waste discharges.

4.2.2 Noise

4.2.2.1 Affected Environment

The existing noise (and vibration) environment in and surrounding the Restoration Area is influenced by transportation noise emanating from vehicular traffic on area roadways, train operations, and aircraft overflights. Agricultural activities, mining operations, urban uses, light industrial uses, commercial uses, and recreational uses are nontransportation noise sources that also contribute to the existing background noise levels in the Restoration Area. Sources of noise in the Restoration Area include the following:

- Vehicular Traffic
- Railroads
- Aeronautical Sources
- Parks and School Playgrounds
- Agriculture
- Industry
- Quarries

4.2.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not provide funding to CDFW for operations and maintenance of the Interim Facility. It is reasonable to assume CDFW would be unable to continue funding operations and maintenance nor secure financial assistance from an alternative source, resulting in delays to development of a broodstock program and other fisheries actions. Under the No Action Alternative, there would be no change in noise in the project area.

Proposed Action

The Proposed Action would include Reclamation providing financial assistance to CDFW for operation and maintenance of the Interim Facility until the Conservation Factility is complete. The nearest noise receptors are residences immediately to the north and to the east of the Interim Facility. The three closest residences may experience minor increases in the ambient noise levels by pumps and recirculation equipment associated with the operation of the Interim Facility. However, the noise-related impacts due to these activities would not result in any exposure of persons to or generation of noise levels in excess of applicable standards, exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, a substantial permanent increase in ambient noise levels, or a substantial temporary or periodic increase in ambient noise levels. Therefore, there would be minor impacts from noise associated with the Proposed Action.

4.3 Socioeconomic Resources

4.3.1 Commercial and Recreational Fisheries

4.3.1.1 Affected Environment

The SJFH at any given time contains over a million rainbow trout and other fish. CDFW has operated the hatchery since the 1950s primarily to supply trout stock for Sierra foothill and Central Valley lakes, reservoirs, ponds and creeks in twelve California counties.

Reach 1 is planted throughout the year with rainbow trout from the SJFH. The area is fished year-round, primarily by local anglers. Lost Lake, a borrow pit created during the

construction of the dam and similar pits created by gravel mining in the past, are also areas for the public to fish for warm water species.

Common fish species in the San Joaquin River include rainbow trout (*Oncorhynchus mykiss*), smallmouth bass (*Micropterus dolomieui*), largemouth bass (*Micropterus salmoides*), Sacramento sucker (Ctostomus occidentalis), Sacramento pikeminnow (*Ptychocheilus grandis*), , brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), hardhead catfish (*Arius felis*), and Common carp (*Cyprinus carpio*). Of these, striped bass, largemouth bass, brown trout, and brook trout are common species fished from the river and from Millerton Lake for consumption.

4.3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no change in commercial and recreation fisheries in the project area.

Proposed Action

The Interim Facility will be operated to conserve water and may include use of recirculation equipment to reduce fresh water needs. These efforts will minimize water needed from the SJFH's supply, enabling CDFW to avoid reducing trout production at the SJFH and stocking rates of local recreational fisheries. Therefore, there would be no adverse impacts to commercial or recreational fisheries associated with the Proposed Action.

4.3.2 Archaeological and Cultural Resources

4.3.2.1 Affected Environment

Cultural resources are defined as prehistoric and historic-era archaeological sites, Traditional Cultural Properties, Sites of Religious and Cultural Significance, and architectural properties (e.g., buildings, bridges, and structures). This definition includes historic properties as defined by the National Historic Preservation Act (NHPA).

Historic-era resources identified through formal recordation in on-site records, California Department of Parks and Recreation property inventory forms (Historic Resources Inventory Form Number 523), or through other state or local landmark inventory programs, are referred to in this analysis as "known" or "previously recorded" resources. To develop sensitivity assessments, archival research and historic mapping were undertaken. The actual presence or integrity of historic-era architectural resources identified only through archival research and historic mapping is unknown, and these are referred to in this study as "identified resources."

Known cultural resources within the Restoration Area include several places of importance to the various Yokuts Tribes in particular. Some of the sites are close to the river. Major areas of resource concentrations appear to be in Firebaugh, Friant, the lower river from Fremont Ford to the Stanislaus County border, Herndon, Lanes Bridge, various current and former river alignments in the Sanjon de Santa Rita, and a number of sloughs and river locales north of San Luis Island.

Cultural resource archival records are relatively limited within the Restoration Area. Based largely on the Central California and San Joaquin Valley information centers records search results, 213 cultural resources studies have been documented. Archaeological surveys have inventoried 12 percent of the Restoration Area, as shown in Table 3-2.

Table 3-2.
Summary of Cultural Resources Results by Reach

Reach	1	2	3	4	5	Bypasses	Total
Acreage	47,883	23,667	23,600	43,821	17,678	12,750	169,399
Archaeological Survey (%)	24.6	5.1	1.6	9.7	8.3	11.7	12.2
Recorded Archaeological Sites (resources with trinomials)							
Historic-Era	15	1	0	2	0	0	18
Prehistoric	42	7	0	12	18	5	84
Prehistoric/Historic-Era	5	0	0	2	0	0	7
Total	62	8	0	16	18	5	109
Recorded Historic-Era Architecture							
Primary Number Only	20	0	1	1	3	0	25
Caltrans Bridge Inventory	4	0	0	0	1	0	5
Partially Documented	10	0	0	0	0	0	10
Archaeological Sites with Architecture [1]	3	1	0	2	0	0	6
From Fresno County Historic Places List[4]	–	–	–	–	0	0	10
Total	37	1	1	3	4	0	56
Potential Prehistoric Surface Site Distribution[3]							
Using Survey Results by Reach	171	59	52[2]	82	156	17	536
Buried Prehistoric Site Potential							
Very Low-Low (%)	31	41	14	41	38	73	35
Moderate (%)	0	0	6	20	4	22	8
Very High-High (%)	57	54	78	37	55	3	51
Potentially Sensitive Historic-Era Archaeological Sites							
Number	139	20	23	26	6	0	214
%	65	9.3	10.7	12.1	2.8	0	99.9
Potential Historic-Era Architectural Resources							
Number	841	90	101	94	121	14	1,242
By Weighted Value	942	123	141	138	121	13	–

Notes:
[1] Also counted in archaeological site numbers.
[2] Average density for Reaches 2 and 4 (2.2) used to generate this value.
[3] Conservative estimate–higher densities indicated by landform age data.
[4] Locations uncertain.
Key:
– = Not available

A total of 109 archaeological sites have been recorded within the Restoration Area. This includes 84 prehistoric sites, 18 historic-era sites, and 7 sites with both prehistoric and historic-era components. Most are concentrated in Reach 1 (57 percent) where inventory efforts have been the most rigorous, while Reach 3 lacks documented sites (with only 2 percent surveyed).

The 91 prehistoric sites and components include 35 major residential sites, 11 residential sites, 28 bedrock milling localities, 11 artifact scatters, 3 artifact scatters with bedrock milling, 2 lithic scatters, and 1 site with a single house pit. Many of the major residential sites have mounds (n=7), house pit depressions on the surface (n=21), and human remains (n=17). Human remains have also been noted at six other sites.

The 25 historic-era archaeological sites include 8 refuse deposits, 7 structural remains, 4 structural remains with refuse deposits, 4 water-related resources (2 check dams, 1 ditch, and 1 canal with refuse), and 2 railroad grades. Those with structural remains include residential and commercial buildings, Dickerson's Ferry, and ranches.

A total of 56 historic-era architectural resources were variously documented within the Restoration Area. These include 32 residential and commercial buildings, 7 bridges, 6 canals, 3 ferries, 2 dams, and 6 miscellaneous (1 rookery, 2 forts, 1 point, 1 pueblo, and 1 railroad grade). Most are concentrated in Reach 1 where inventory efforts have been the most rigorous.

4.3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not provide funding to CDFW for operations and maintenance of the Interim Facility. It is reasonable to assume CDFW would be unable to continue funding operations and maintenance nor secure financial assistance from an alternative source, resulting in delays to development of a broodstock program and other fisheries actions. Under the No Action Alternative, there would be no change in cultural resources in the project area.

Proposed Action

The Proposed Action would include Reclamation providing financial assistance to CDFW for operation and maintenance of the Interim Facility until the Conservation Factility is complete. The Proposed Action would not cause a substantial adverse change in the significance of a historical or archeological resource, not directly or indirectly destroy a unique paleontological resource/site or geologic feature, or likely disturb any human remains. Therefore, there would be no adverse impact to Cultural Resources.

4.3.3 Indian Trust Assets

4.3.3.1 Affected Environment

Indian Trust Assets (ITA) are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. "Assets" are anything owned that holds monetary value. "Legal interests" means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITA cannot be sold, leased or otherwise alienated without the United States' approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

4.3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not provide funding to CDFW for operations and maintenance of the Interim Facility. It is reasonable to assume CDFW would be unable to continue funding operations and maintenance nor secure financial assistance from an alternative source, resulting in delays to development of a broodstock program and other fisheries actions. Under the No Action Alternative, there would be no change in ITAs in the project area.

Proposed Action

The Proposed Action would include Reclamation providing financial assistance to CDFW for operation and maintenance of the Interim Facility until the Conservation Factility is complete.

There are no ITAs within the area of potential effect (APE). The closest ITA is approximately 4 miles away. Therefore the action does not have the potential to impact Indian Trust Assets.

4.3.4 Energy Production, Consumption, and Conservation

4.3.4.1 Affected Environment

Water delivery to the hatchery is primarily through gravity flow. Water flows out of Friant Dam and through a power plant before arriving via pipe to the Hatchery. Above the Hatchery at a series of aeration towers, the pipe splits off to separately feed the Interim Facility and the Hatchery.

Minor pumping is required to flush the water through the raceways. Power consumption at the hatchery is generally associated with appurtenant structures such as on-site residences, maintenance activities, and visitor areas. Electrical power service to the hatchery is provided by Pacific Gas and Electric Company via service drops from above-ground power lines. Current hatchery operations use electrical power for effluent treatment, restrooms, staff residences and other buildings involved in fry production, incubation, freezing, spawning, office space, and research areas.

At Friant Dam, the current power generation potential of the existing hydropower facilities (the River Outlet Powerhouse and the Fishwater Powerhouse) are currently at 2.31 megawatts with a total annual output of approximately 3,300 megawatt-hours. With the construction of the proposed New River Outlet Powerhouse by the Friant Power Authority, power generation would jump to 7.51 megawatts with a total annual output of approximately 33,400 megawatts. The New River Outlet Powerhouse would harness Restoration Flows from the San Joaquin River Restoration Program.

4.3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not provide funding to CDFW for operations and maintenance of the Interim Facility. It is reasonable to assume CDFW would be unable to continue funding operations and maintenance nor secure financial assistance from an alternative source, resulting in delays to development of a broodstock program and other fisheries actions. Under the No Action Alternative, there would be no change in energey production, consumption, and conservation in the project area.

Proposed Action

The Proposed Action would include Reclamation providing financial assistance to CDFW for operation and maintenance of the Interim Facility until the Conservation Factility is complete. Operation of the Interim Facility will not change the overall SJFH water supply of 35 cfs released from Friant Dam; thus power plant operations will be unaffected. Operation of the Interim Facility may require the use of additional electric pumps and ultra-violet (UV) disinfection and micro-screen filtration facilities in order recycle and flush water through the system. Additional electric costs will vary from year to year depending on the pumping and filtration requirements but would not result in adverse impacts to engergy production, consumption, or conservation associated with the Proposed Action.

4.3.5 Environmental Justice

4.3.5.1 Affected Environment

Based on the 2000 U.S. Census data, the population of Friant stood at 1,119 persons. The tabulation area includes residents in the U.S. Postal Service zip code 93626. The population of Friant is predominantly white. Only 12% identify with other groups. A majority of the residents in Friant earn between $30,000 and $75,000 per year. Most (approximately 1/3) earn less than $30,000 with 10% of the total population earning at or below the federal poverty threshold. Direct community affects from the No Action and

Proposed Action alternatives would be contained within the hatchery facility. There are no known low-income or minority communities residing or working at the hatchery site.

No Action

Under the No Action Alternative, there would be no disproportionate adverse effect on minority or low-income communities.

Proposed Action

The Proposed Action will not directly impact the Friant community or ethnic communities therein, or disproportionately adversely affect a low income community or community of color. The action is also not expected to indirectly affect community cohesion, ethnic commuities, or low income communities.

4.4 Environmental Consequences Analysis

This section presents the environmental consequences and analysis of cumulative impacts potentially resulting from implementation of the Proposed Action. Because the No-Action Alternative has not changed from the conditions described in the PEIS/R, the analysis of the potential impacts associated with the No-Action Alternative for each resource area remains unchanged and is not repeated here.

The following sections summarize information and findings from the PEIS/R relevant to implementation of the Proposed Action. Section 4.4.1 includes a discussion of the resource topics that would not result in any new adverse impacts or substantial increase in the severity of impacts previously analyzed.

4.4.1 Resource Topics Not Requiring Further Evaluation

It was determined that the following resource topics would not result in any adverse impacts due to implementation of the Proposed Action.

Geology and Soils

The Proposed Action would not involve conditions that could result in seismic activity or related ground failure or landslides. The Proposed Action would not increase the risk of landslides, lateral spreading, liquefaction, or collapse, would not increase risks to life or property due to the presence of expansive soils within the region, and would not involve temporary or long-term installation or use of wastewater disposal systems. Therefore, there will be no adverse impacts to Geology and Soils

Land Use and Planning

The Proposed Action would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact, and not conflict with any applicable habitat conservation plan or natural community conservation plan. Implementation of the Proposed Action would have no adverse impacts to Land Use and Planning.

Protected Areas: Wilderness Areas, Wild and Scenic Rivers, Scenic Routes and Preserves

The San Joaquin River is not designated as a Wild and Scenic River. Its headwaters are relatively pristine and lie within the Sierra National Forest managed by the U.S. Forest Service and the Bureau of Land Management, but the river has been heavily modified from Reach 1 down to the Merced River. The closest officially designated Scenic Routes are several miles to the north and south of the SJFH site (Highway 41, Highway 48, Highway 180, and Highway 168). The Proposed Action will not have direct impacts to Wilderness Areas, Wild and Scenic Rivers, Scenic Routes, or preserves.

Aesthetics

The Proposed Action will not have a direct impacts on aesthetics in the area as it includes no construction.

Agriculture

There are no agricultural lands within or in the immediate vicinity of the SJFH. Therefore no direct or indirect impacts to agricultural lands would result from implementation of the Proposed Action.

Economy and Employment

The Proposed Action is not expected to have any direct, indirect, or cumulative impact on the local economy or employment.

Mineral Resources

Implementation of the Proposed Action would not result in the loss of availability of known resources that would be of value to the region or the residents of the state, and would not result in the loss of availability of a locally important mineral resource recovery site. Therefore, there would be no adverse impacts to Mineral Resources.

Population and Housing

Implementation of the Proposed Action would not directly or indirectly induce substantial population growth in an area, displace substantial numbers of existing homes or people. Therefore, there would be no adverse impacts to Population and Housing.

Public Services

The Proposed Action would not result in substantial adverse physical impacts associated with the provision of new or physically altered public facilities, or the need for new or physically altered public facilities in order to maintain acceptable service ratios, response times, or other performance objectives for public services. Therefore, the Proposed Action would not result in adverse impacts to Public Services.

Recreation

The Proposed Action would not result in an increase in the use of existing neighborhood and regional parks or other recreational facilities and would not include construction or expansion of recreational facilities. There would be no adverse impacts to recreation from the Proposed Action.

Transportation/Traffic

The Proposed Action would not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system, exceed, either individually or cumulatively, a level of service standard, result in a change in air traffic patterns, substantially increase hazards due to a design feature or incompatible uses, result in inadequate emergency access, result in inadequate parking, or conflict with adopted policies, plans, or programs supporting alternative transportation. Implementation of the Proposed Action would not result in adverse impacts to transportation or traffic.

Utilities and Service Systems

Because the Proposed Action does not involve increased generation or treatment of wastewater or solid waste, demands for related facilities would not increase. Therefore, there would be no adverse impacts to utilities and service systems.

Air Quality

The project area is located within the San Joaquin Valley Air Basin (SJVAB) which is the second largest air basin in California. Despite years of improvements, the SJVAB does not meet State and Federal health-based air quality standards. The governing body over SJVAB, the San Joaquin Valley Air Pollution Control District (SJVAPCD), has adopted stringent control measures to reduce emissions and improve overall air quality within the SJVAB. The Proposed Action will not result in additional air quality emissions.

Hazardous Materials

There are no known sources of hazardous materials at the Interim Facility site. Therefore, there would be no impacts resulting from hazardous materials.

Public Health and Safety

The Proposed Action will not have any direct public health and safety affects. The amount of flow that would be discharged from the Interim Facility is only a small fraction of the total flow released daily by Friant Dam. The action is not expected to cause or contribute to indirect and cumulative impacts to public health and safety conditions in the San Joaquin River.

4.5 Cumulative Impacts

According to the CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Past and Present Actions and Operations

Past and present human actions along the San Joaquin River have created legacies that continue to adversely affect various natural resources and biological communities including the extirpation of spring-run Chinook from the San Joaquin River. Human activities that have contributed to this condition include incremental development, population growth, agricultural practices, levees, the introduction of non-native species, gravel and mineral extraction, construction of Friant Dam, and CVP operations. Development in the region has led to impacts on water sources including increased demand for water supplies, point source and non-point sources of pollution, increases in impervious surfaces, and increased stormwater runoff.

San Joaquin River Restoration Program

The No Action and Proposed Action alternatives are linked those SJRRP actions taken to reach the Restoration Goal of the Settlement. The cumulative effects of the SJRRP were described in the PEIS/R for the SJRRP. Reasonably foreseeable future actions that would occur as a part of the SJRRP include the implementation of Restoration Flows in the San Joaquin River, recapture and recirculation of flows, water control structure removals or improvements, major fish passage and habitat improvements such as the Mendota Pool Bypass, minor fish passage improvements, sediment extraction, bank stabilization projects, and mitigation projects related to these actions.

The No Action and Proposed Action alternatives are linked to actions being taken by CDFW at the hatchery to meet the Restoration Goal of the Settlement. The Interim Facility constructed by CDFW has allowed CDFW to begin a small-scale propagation an experimental population of salmon and will house the first generation of spring-run Chinook salmon broodstock. The results from the propagation of salmon in the Interim Facility will guide how the fish are propagated in the full-scale Conservation Facility.

The Conservation Facility will be completed by CDFW in 2015. CDFW is in the process of preparing a draft environmental impact report (DEIR) to satisfy CEQA requirements for the Conservation Facility. The DEIR will be made available for public review in 2013.

In addition to funding the operations and maintenance of the Conservation Facility, Reclamation will work with CDFW initiating a new water service agreement to supply the Conservation Facility. New infrastructure may be required in order to deliver the

additional water to the Conservation Facility. Both of these actions related to the Conservation Facility are pending evaluation by Reclamation under separate environmental assessments.

The program-level effects of the San Joaquin River Restoration Program were evaluated in the PEIS/R, including the overall beneficial impact of the SJRRP on the restoration of habitat and reintroduction of salmon to the San Joaquin River. The PEIS/R included a cumulative effects analysis of proposed developments in Fresno County and Madera County. The PEIS/R included a cumulative impact analysis on effects to power generation and determined that the SJRRP would not make a cumulatively considerable incremental contribution to a significant cumulative power generation based on existing facilities. The PEIS/R also evaluated cumulative effects on fisheries and determined that the SJRRP would likely have beneficial impacts to native fishes and their habitat along the San Joaquin River.

Foreseeable Residential and Commercial Development

There are reasonably foreseeable actions in the Restoration Area not expected to involve Federal funding and/or permitting (e.g., some private development and some management activities). Several development proposals are in in the process of receiving or have received the necessary permits and authorizations to begin construction around Millerton Lake and the San Joaquin River near the hatchery. Developments include those within the Rio Mesa Area Plan such as North Shore at Millerton Lake, Tesoro Viejo, Tra Vigne, Avenue 12 Village, and Cobb Ranch; the Friant Ranch Specific Plan Area; and the Millerton Newtown Specific Plan Area.

Development around Millerton Lake, along the San Joaquin River, and along Friant Road, would add thousands of homes, acres of commercial zones, thousands of vehicles to area roads, add tens of thousands of people to the population of the Friant and Fresno County area, and convert hundreds or thousands of acres of pervious land into impervious surfaces. Developments on the Madera County and Fresno County side of the river and lake would have significant cumulative impacts to aesthetics, water quality, water supply, wildlife habitat, federally-listed threatened and endangered species, growth, air quality, greenhouse gas emissions, traffic, transportation, public utilities and facilities, agriculture, economics, energy consumption and recreation.

Upper San Joaquin Basin Storage Investigation

Reclamation is currently studying the feasibility of constructing a 1.3 million acre-foot storage facility at Temperance Flat, behind Friant Dam on the San Joaquin River among other water storage alternatives. If built, the dam at Temperance Flat would have significant impacts to aesthetics, recreation, fisheries, federally-listed threatened and endangered species, wildlife habitat, energy production, water quality, water supply, and agriculture.

Existing and Reasonably Foreseeable Power Generation Facilities

The FPA has proposed to construct a new powerhouse on the Friant Dam outlets. The New River Outlet Powerhouse would have a capacity of 370 cfs, harnessing additional flows put through the outlet works for the San Joaquin River Restoration Program. In total, the power generation facilities would use up to 535 cfs of flow to generate power. The Federal Energy Regulatory Commission evaluated the New River Outlet Powerhouse and made a Finding of No Significant Impact.

Reclamation is currently designing new water delivery infrastructure to provide water supply for the Conservation Facility which may change the how flows are released from Friant Dam and the availability flows for power generation by existing and proposed facilities.

Also, an undetermined number of future actions could go forward without a Section 404 permit to fill wetlands, an incidental-take permit through Section 10 of the ESA, or other Federal action. Future actions that could potentially impact resources include actions that affect or result in any of the following:

- Habitat conversion or fragmentation
- Herbicide or pesticide applications
- Vegetation management, including along waterways
- Grazing practices
- Crop selection (including crop types cultivated, fallowing or idling of cropland, and abandonment of agricultural land)
- Ground-disturbing activities (including ripping of soils)
- Discharge of contaminants into waterways
- Presence of humans along waterways on agricultural lands, or in natural vegetation
- Predator abundance (e.g., coyotes)
- Dispersal and establishment of invasive species
- Flow regimes of waterways
- Use of off-road vehicles and traffic levels on local roads

All of these activities and scenarios can degrade habitat or cause the injury or death of listed species. These activities regularly change in response to market conditions and new technologies. For some of these activities (such as some agricultural practices),

attempting to predict future changes and their consequences for listed species would be speculation. Nonetheless, the vulnerability of listed species to different types of actions varies, many actions are associated with particular land uses or management practices, and the distribution of potential habitat with regard to existing and planned land uses is known. Therefore, this analysis uses these known relationships between types of non-Federal actions and impacts on species, and among habitats, non-Federal actions, and land use, as the primary basis for evaluating the cumulative impacts of foreseeable future actions.

No Action

Considering all of the proposed residential and commercial development as a whole, the No Action Alternative is not expected to make a considerable contribution to cumulative adverse impacts from these developments.

Since the No Action Alternative will have no effect on water flows discharged from Friant Dam, the No Action Alternative would not interfere with or contribute to any cumulative adverse impacts to water supply from the New River Outlet Powerhouse.

The No Action Alternative would be expected to make a minor contribution to the cumulative construction and operational impacts to fishery resources, water quality, and energy consumption from CDFW's proposed Conservation Facility. The duration of these cumulative impacts would last a minimum of 10 years or until spring-run Chinook salmon are successfully reintroduced as a self-sustaining population in the San Joaquin River.

The No Action Alternative would be expected to have a major contribution to the cumulative benefits of the Restoration Goal of the SJRRP including reintroducing spring-run Chinook salmon, improving and restoring instream and riparian habitat, and removing fish passage barriers in the San Joaquin River.

Proposed Action

The Proposed Action when added to foreseeable actions to be undertaken by CDFW and the SJRRP would have long-term, moderate beneficial effects on in-stream habitat, riparian habitat, fish diversity, recovery of an endangered species, and recreation on the San Joaquin River. There are multiple interrelated past, present, and reasonably foreseeable actions that combined, had, have, or will have significant cumulative effects on the human environment within the San Joaquin River watershed that led to the existing condition of the river and will affect the outcome or success of actions related to the Restoration Goal of the SJRRP. Overall, the Proposed Action's contribution to the cumulative effects of these actions on the human environment is negligible, however, Proposed Action's role in achieving the Restoration Goal is substantial.

Considering all of the proposed residential and commercial development as a whole, the Proposed Action Alternative is not expected to make a considerable contribution to cumulative adverse impacts from these developments.

Since the Proposed Action Alternative will have no effect on water flows discharged from Friant Dam, the Proposed Action Alternative would not interfere with or contribute to any cumulative adverse impacts to water supply from the New River Outlet Powerhouse.

The Proposed Action Alternative would be expected to make a minor contribution to the cumulative construction and operational impacts to fishery resources, water quality, and energy consumption from CDFW's proposed Conservation Facility. The duration of these cumulative impacts would last a minimum of 10 years or until spring-run Chinook salmon are successfully reintroduced as a self-sustaining population in the San Joaquin River.

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5.0 Consultation and Coordination

5.1 Public Review Period

Reclamation intends to sign a Finding of No Significant Impact for the Proposed Action (FONSI) and will make the EA available for a 30-day period from July 1, 2013 to July 31, 2013. All comments will be addressed in the FONSI. Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

5.2 Endangered Species Act (16 USC §1531 et seq.)

Section 7 of the Endangered Species Act requires federal agencies to ensure that discretionary federal actions to not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. Reclamation provided in an email to USFWS on June 20, 2013 outlining our intent to make a no effect determination for listed species.

5.3 Fish and Wildlife Coordination Act

Under the Fish and Wildlife Coordination Act (FWCA), federal agencies undertaking water projects are required to fully consider the recommendations made by the USFWS, NMFS, and other appropriate fish and wildlife agencies like CDFW to implement measures that reduce impacts on fish and wildlife. Reclamation provided an email to USFWS on June 20, 2013 and USFWS responded stating the project does not trigger FWCA.

5.4 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act is designed for taking immediate action to conserve and manage the fishery resources found off the coasts of the United States, and the anadromous species and continental shelf fishery resources of the United States. Consultation with NMFS is required when any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, may adversely affect any EFH. Within the study area, EFH is found in the San Joaquin River downstream from the Merced River confluence, in three major San Joaquin River tributaries (Merced, Tuolumne, and Stanislaus rivers), and in the Delta. Reclamation provided in an email to NMFS on June 20, 2013 outlining our intent to make a no effect determination for EFH.

5.5 National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended (16 USC 470 *et seq*), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the impacts of an undertaking on historic properties, properties that are eligible for inclusion in the NRHP. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the NHPA requires federal agencies to consider the impacts of federal undertakings on historic properties, properties determined eligible for inclusion in the NRHP. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess impacts on any identified historic properties. The activities associated with the Proposed Action would include no new ground disturbance, no change in land use, and the use of existing conveyance features to move and store water. Reclamation has determined that there would be no potential to affect historic properties by the Proposed Action pursuant to 36 CFR 800.3(a)(1).

5.6 Migratory Bird Treaty Act of 1918 (16 USC § 703 et seq.)

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the MBTA, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

Reclamation has determined the Proposed Action would have no impact on birds protected by the MBTA.

5.7 Executive Order 113007 and American Indian Religious Freedom Act of 1978 – Indian Trust Assets and Sacred Sites on Federal Lands

Executive Order 113007 and the American Indian Religious Freedom Act of 1978 are designed to protect Indian Trust Assets, accommodates access and ceremonial use of Native American sacred sites by Native American religious practitioners, avoid adversely

affecting the physical integrity of such sacred sites, and protect and preserve the observance of traditional Native American religions. The Proposed Action would not violate these protections.

5.8 Executive Order 12898 – Environmental Justice in Minority and Low-Income Populations

Executive Order 12898 requires Federal agencies to identify and address disproportionately high and adverse human health and environmental impacts of Federal programs, policies, and activities on minority and low-income populations. The Proposed Action has been assessed for potential environmental, social, and economic impacts on minority and low-income populations. Minority and low-income populations would not be disproportionately exposed to adverse impacts by implementation of the Proposed Action.

5.9 Central Valley Project Improvement Act

Public Law 102-575, the Reclamation Projects Authorization and Adjustment Act of 1992, includes Title 34, the Central Valley Project Improvement Act (CVPIA). The CVPIA amended previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement as having equal priority with power generation. The Proposed Action is consistent with CVPIA.

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