Final

Fiscal Year 2015 Annual Work Plan

SAN JOAQUIN RIVER
RESTORATION PROGRAM

February 2015

Table of Contents

Figures

Tables

List of Abbreviations and Acronyms

AWP	Annual Work Plan
CCAG	Channel Capacity Advisory Group
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
cfs	cubic feet per second
DFW	California Department of Fish and Wildlife
DWR	California Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
EIS/R	Environmental Impact Statement/Report
FKC	Friant Kern Canal
FWA	Friant Water Authority
FY	Fiscal Year
MAP	Monitoring and Analysis Plan
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRDC	Natural Resources Defense Council
O&M	Operations and Maintenance
Reclamation	U.S. Bureau of Reclamation
ROD	Programmatic Record of Decision
SCARF	Salmon Conservation and Research Facility
Settlement Act	The San Joaquin River Restoration Settlement Act (Public Law 111-11)
Secretary	Secretary of the Interior
SJRRP or Program	San Joaquin River Restoration Program
TAC	Technical Advisory Committee
TM	Technical Memorandum
USFWS	U.S. Fish and Wildlife Service

This page left blank intentionally.

1.0 Introduction

This Annual Work Plan (AWP) for Fiscal Year 2015 (FY 15) both describes and sequences the activities proposed by the Bureau of Reclamation (Reclamation), U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the California Department of Water Resources (DWR) and the California Department of Fish and Wildlife (DFW) (collectively, Implementing Agencies or Agencies) to undertake during FY 15 to implement the San Joaquin River Restoration Program (SJRRP or Program).

1.1 Background

In 1988, a coalition of environmental groups led by the Natural Resources Defense Council (NRDC) filed a lawsuit (*Natural Resources Defense Council, et al., v. Kirk Rodgers, et al.)* challenging the renewal of the long-term water service contracts between the United States and the Central Valley Project Friant Division contractors. After more than 18 years of litigation, the NRDC, Friant Water Authority (FWA), and the Departments of the Interior and Commerce (collectively, Settling Parties) reached agreement on terms and conditions of a settlement (Stipulation of Settlement or Settlement). The court approved the Settlement on October 23, 2006. The San Joaquin River Restoration Settlement Act (Settlement Act), Title X of Public Law 111-11, signed into law on March 30, 2009, authorizes and directs the Secretary of the Interior (Secretary) to implement the Settlement.

The Settlement includes two parallel goals:

- Restoration - 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

- Water Management - To reduce or avoid adverse water supply impacts to all of the Friant Division long-term Contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

To achieve the Restoration Goal, the Settlement calls for the release 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. To achieve the Water Management Goal, the Settlement calls for recirculation, recapture, reuse, exchange, or transfer of the Interim and Restoration flows and a Recovered Water Account and program for the purpose of reducing or avoiding water delivery impacts to all of the Friant Division long-term contractors caused by the Interim and Restoration flows. In addition to the Settlement, Part III of the Settlement Act authorizes and directs the Secretary to conduct additional Water Management Goal actions to further reduce or avoid impacts to water deliveries caused by the Interim and Restoration flows. The Settlement and Settlement Act, collectively, are being implemented as the SJRRP.

Figure 1 shows the Restoration Area, which spans the San Joaquin River from Friant Dam to the Merced River confluence.

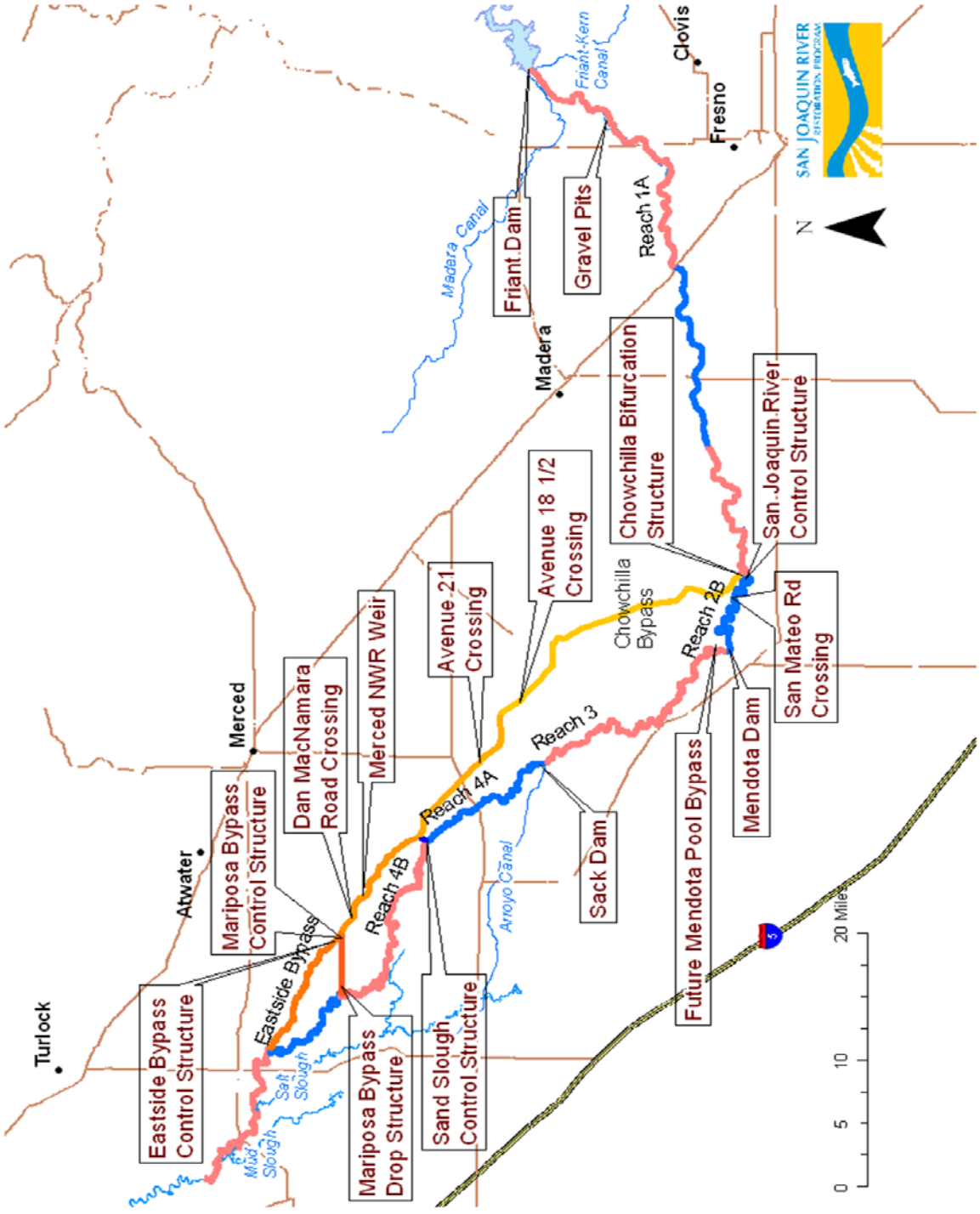

Figure 1-1 San Joaquin River Restoration Program Restoration Area

1.2 Purpose of this Document

In July 2012, the Program completed the *SJRRP Program Environmental Impact Statement/Environmental Impact Report* and in October published its *Program Record of Decision* (ROD). In the ROD, Reclamation committed to the development of this AWP and to the successful and expeditious implementation of the Restoration and Water Management goals of the Settlement consistent with the Settlement Act. With this commitment in mind, the Settlement activities described in this AWP are being implemented in a sequence in which some activities are necessarily initiated before others. Consistent with the requirements set forth in the Settlement and Settlement Act, and in consideration of available resources, the following Program activities are being expedited:

- Activities that provide for naturally-reproducing and self-sustaining populations of salmon including reintroduction actions for spring-run and fall-run Chinook salmon, and, if necessary, an interim trap and haul program.
- Activities to implement the Water Management Goal.
- Activities in Paragraph 11(a) of the Settlement that prevent entrainment of fish by installation of a fish screen at Arroyo Canal, provide for fish passage over Sack Dam, and prevent straying of fish into Mendota Pool, by use of fish screens or other measures determined to be appropriate.
- Activities that provide for the release of Interim and Restoration flows in the San Joaquin River, including actions to address seepage management, levee stability, and channel capacity constraints (including the Mendota Pool Bypass).

In an effort to provide a realistic schedule and budget and have quantifiable, measurable goals for the SJRRP, in 2014, Reclamation initiated the development of a new schedule and budget for the SJRRP as an update to the *Third Party Working Draft Framework for Implementation* (2012 Draft Framework), dated June 2012 (SJRRP 2012). In July 2014, Reclamation prepared an *Administrative Draft 2014 Update – Framework for Implementation* (Admin Draft 2014 Framework). Reclamation is currently holding a series of meetings with the Implementing Agencies, Settling Parties, and downstream landowners and water districts potentially impacted by the SJRRP to discuss and finalize an updated Framework. The Admin Draft 2014 Framework proposes to prioritize SJRRP actions consistent with the commitments Reclamation made in the ROD.

To help sequence FY 15 –FY 17 activities, this AWP draws on the priorities and actions in the Admin Draft 2014 Framework. As the Admin Draft 2014 Framework is finalized, actions will be adjusted to reflect the final Revised Framework priorities and actions.

The estimated costs associated for implementing the listed projects are provided in Chapter 4. The projects listed herein represent the reasonable level of effort the Program believes can be accomplished in fiscal years 15, 16 and 17 and the estimated costs associated with that level of effort. These estimated costs do not represent the total costs to complete the projects. The total estimated costs to complete each individual project are beyond the scope of this document and are not provided.

2.0 Funding Sources and FY 15 Funding

Funding to implement the SJRRP is described in detail in the 2012 Draft Framework, dated June 2012 (SJRRP 2012). Refer to the 2012 Draft Framework for detailed information on the SJRRP's funding sources.

The SJRRP's FY 15 funding, by source, is provided in Table 2-1.

Table 2-1 SJRRP FY 15 Funding

Funding Source	FY 15 Funding		
	Approved Budget	Prior Year Recovery or Carryover	Total
Federal Funds			
San Joaquin River Restoration Fund[1]	$3,806,755	$3,060	$7,404,060
Central Valley Project Restoration Fund	$2,000,000	$31,057	$2,031,057
Reclamation Discretionary Fund Request	$32,000,000	$3,560,128	$35,560,128
Total Federal Funds	**$37,806,755**	**$3,594,245**	**$41,401,000**
State Funds			
Department of Fish and Game			
Proposition 13	$292,867	Not provided	$292,867
Proposition 84	$3,000,000	Not provided	$3,000,000
Proposition 1E	$0	Not provided	$0
Department of Water Resources			
Proposition 13	$0	$0	$0
Proposition 84	$6,800,000	$800,000	$7,600,000
Proposition 1E	$0	$2,544,500	$2,544,500
Total State Funds	**$10,092,867**	**$3,344,500**	**$13,437,367**
Total Funds	**$47,899,622**	**$6,938,745**	**$54,838,367**

[1] The President's FY 15 budget identifies $16,600,000 in mandatory funds from the San Joaquin River Restoration Fund. Only approximately $7.4 million is needed to carry out the FY 15 activities. Those funds not spent will be available in future years.

3.0 FY 15 – FY 17 Planned Activities

3.1 Summary

As described in Section 1.2, the Implementing Agencies are focusing their efforts on implementing the priorities and actions identified in the Admin Draft 2014 Framework. This AWP has been formatted to track with the Admin Draft 2014 Framework so that readers can link the two documents and see how the SJRRP is incrementally (annually) implementing the SJRRP and how annual activities contribute to achieving the Settlement's Restoration and Water Management goals.

The cost estimates for project activities in this AWP were developed by the Implementing Agencies for reasonable expected levels of effort for agency personnel and using known and estimated contracting costs for services and construction. These estimates were rolled up into total expected costs per action. Estimated costs provided throughout this AWP are not a reflection of or estimate of future funding requests in the President's budget or the State budget.

Table 3-1 and 3-2 summarize the annual estimated Federal and State costs, respectively, for FY 15 to FY 17 planned activities. A detailed description of each project is provided in Sections 3.2 to 3.5 of this chapter with the exception of those projects that are not funded in FY 15 to FY 17. These projects are not included as no action is planned on these projects within the timeframe covered by this AWP.

Table 3-1 Summary of Estimated Federal Costs for FY 15 to FY 17 Planned Activities (in thousands)

Activity/Project Title	FY 15	FY 16	FY 17
Administration and Program Management	**$4,424**	**$4,589**	**$4,727**
Reclamation[1]	$1,832	$1,887	$1,944
USFWS[2]	$1,621	$1,702	$1,753
NMFS[3]	$971	$1,000	$1,030
DWR	$0	$0	$0
DFW	$0	$0	$0
Flow-Related Activities	**$28,238**	**$19,077**	**$10,514**
Conservation Strategy and Flow-related Mitigation Measures	***$3,238***	***$1,858***	***$1,558***
Conservation Strategy			
Invasive Species Control	$1,510	$10	$10
Re-consultation on Flows	$0	$0	$0
Implement Conservation Strategy Actions for Flows	$0	$0	$0
Channel Capacity Advisory Group	$100	$103	$106
Physical Monitoring and Management Plan Implementation	$0	$0	$0
Steelhead Monitoring	$228	$235	$242
Programmatic Cultural Resources Consultation	$100	$1,500	$1,000
Millerton Lake Boat Ramps	$50	$0	$200
Traffic Detour Planning	$50	$10	$0
Sand Slough / Eastside Bypass Sand Removal	$1,200	$0	$0
Flow Management and Monitoring	***$1,295***	***$1,414***	***$1,306***
Daily Flow Management and Monitoring	$77	$79	$82
Stream Gaging	$119	$123	$218
Unexpected Seepage Losses	$0	$0	$0
Unreleased Restoration Flows	$36	$37	$38
Restoration Flow Guidelines	$26	$106	$0
Data Management	$250	$258	$133
MAP Actions to Inform Flow Decisions	$750	$773	$796
Water Right Annual Report	$37	$38	$39
Seepage Actions	***$20,805***	***$15,805***	***$7,650***
Flowage Easements	***$2,900***	***$0***	***$0***
Levee Stability Actions	***$0***	***$0***	***$0***
Restoration Goal Activities	**$3,209**	**$20,024**	**$33,195**
Phase 1 Projects[4]	***$1,527***	***$14,351***	***$31,250***
Mendota Pool Bypass and Fish Screen	$1,300	$13,126	$31,000
Reach 2B and Chowchilla Bypass Structure Improvements	$0	$0	$0
Reach 4B/ESB/MB Channel and Structural Improvements	$150	$175	$250
Arroyo Canal Fish Screen and Sack Dam Fish Passage	$77	$1,050	$0
Salt and Mud Slough Seasonal Barriers	$0	$0	$0
Passage at Key Barriers to Migration	***$50***	***$1,200***	***$0***
Phase 2 Projects[5]	***$0***	***$0***	***$0***
Reach 4B/ESB High Flow Routing	$0	$0	$0
Chowchilla Bifurcation Structure Fish Passage	$0	$0	$0
Gravel Pit Filing and/or Isolation	$0	$0	$0

Table 3-1 Summary of Estimated Federal Costs for FY 15 to FY 17 Planned Activities (in thousands)

Activity/Project Title	FY 15	FY 16	FY 17
Fisheries Re-introduction Activities	***$1,632***	***$4,473***	***$1,945***
Conservation Facility Construction	$0	$0	$0
Conservation Facility Water Supply Line	$50	$2,850	$50
Conservation Facility Operations and Maintenance	$700	$721	$743
Donor Stock Collection	$80	$82	$85
Trap and Haul	$592	$610	$628
Genetics Monitoring	$10	$10	$239
Segregation Actions	$200	$200	$200
Paragraph 12 Activities	***$0***	***$0***	***$0***
Water Management Goal Activities	**$3,450**	**$13,200**	**$11,160**
Water Management Goal Oversight [6]	$1,200	$1,200	$1,200
Recapture and Recirculation Plan and Implementation	$500	$500	$500
Friant-Kern and Madera Canal Capacity Restoration[7]	$1,700	$11,450	$8,450
Reverse Flow Facilities	$0	$0	$1,000
Part III - Financial Assistance	$50	$50	$10
Miscellaneous and/or Opportunistic Actions	**$2,080**	**$2,020**	**$2,000**
Total Estimated Federal Funding Need	**$41,401**	**$58,910**	**$61,596**

Notes and Assumptions:

1. Includes Program-wide activities including public outreach (annual report, Quarterly Updates, and similar) and data management.
2. USFWS cost for FY 15 to FY 17 based on Interagency Agreement between USFWS and Reclamation.
3. NMFS cost for FY 15 to FY 17 based on Interagency Agreement between NMFS and Reclamation.
4. Costs for FY 16 and FY 17 for the Phase 1 Projects are based on the Revised Framework and are estimates.
5. No Phase 2 Projects were included in the Revised Framework for the FY 15 to FY 17 timeframe except the Reach 4B project. This is included under the Phase 1 costs as the Phase 1 and Phase 2 efforts for Reach 4B have been combined into one project.
6. Includes annual recapture and recirculation actions, managing Recovered Water Accounts, and Restoration Operations Assessment Model.
7. Assumes construction may occur over time depending on the construction season and canal deliveries.

1

Table 3-2 Summary of Estimated State Costs for FY 15 to FY 17 Planned Activities (in thousands)

	FY 15 Estimate[1]	FY 16 Estimate	FY 17 Estimate
Department of Fish and Wildlife			
Prop 13	$292,867	$0	$0
Prop 84	$3,000,000	$17,450,000	$2,000,000
DFW Sub-Total	$3,292,867	$17,450,000	$2,000,000
Department of Water Resources			
Prop 84	$2,450,000	$3,550,000	$2,850,000
Prop 1E	$2,920,000	$1,800,000	$4,720,000
DWR Sub-total	$5,370,000	$5,350,000	$7,570,000
Total	**$8,662,867**	**$22,800,000**	**$9,570,000**

2

3

3.2 Administration and Program Management

Administration and Program Management actions include support to the SJRRP from the Implementing Agencies and SJRRP staff not captured in individual projects. These actions are listed in this AWP in the same order they appear in Table 3-1.

3.2.1 Bureau of Reclamation

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Alicia Forsythe (Program) Reclamation, Margaret Gidding (Outreach)	2006	On-going for duration of the Program

Table 3-3 Reclamation Program Management Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Overhead Staff and Expenses	$1,482,000	$1,526,500	$1,572,685
Outreach Activities			
Reclamation Staff and Expense	$110,000	$113,300	$116,699
Contracting	$240,000	$247,200	$254,616
Total	**$1,832,000**	**$1,887,000**	**$1,944,000**

Authority

Public Law 111-11, Title X, and Central Valley Project Improvement Act, Public Law 102-575, Section 3406(c)(1)

Description

This project includes all direct costs to Reclamation for travel, office space rental, office equipment, training, awards, and other costs associated with program management and support. Salaries include those portions of Reclamation's staff time not covered under support to individual project activities.

Reclamation developed an extensive public outreach program for the SJRRP Public Involvement Plan in 2007. The goal of the Public Involvement Plan is to create an open and visible process through which the public can track SJRRP activities and progress as well as participate in the identification of issues and formulation of alternatives.

Deliverables

- Overall Program management and administration
- Outreach activities:
    - Public meeting and workshop design and delivery, including stakeholder outreach through Technical Feedback Group meetings

- Research and prepare public information pieces including an annual report and quarterly updates
- Maintain and consistently update Program web site
- Coordination with landowners in the Restoration Area
- Prepare the SJRRP quarterly updates
- Coordinate access to private property including executing and managing Temporary Entry Permits, and
- Provide strategic advice on specific activities across the Program and overall Program issues

FY 14 Accomplishments

All of the activities and deliverables were completed in FY 14.

Expected FY 15, FY 16, and FY 17 Activities

All of the activities and deliverables identified above are expected in FY 15, FY 16, and FY 17.

3.2.2 U.S. Fish and Wildlife Service

Lead	*Start Date*	*Expected Completion Date*
USFWS, Bob Clarke	2006	On-going for duration of the Program

Table 3-4 USFWS Program Management Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Funding to USFWS	$1,621,000	$1,702,000	$1,753,000
Notes: Reclamation funds all of USFWS' efforts for the SJRRP.			

Authority

Paragraph 14 of the Settlement, Public Law 111-11, Title X, and Central Valley Project Improvement Act, Public Law 102-575, Section 3406(c)(1)

Description

USFWS provides support to the Program by conducting environmental compliance and fish reintroduction activities consistent with the Monitoring and Analysis Plan (MAP) processes and participates in the Program Management Team, Settling Party Coordination, and Technical Advisory Committees. USFWS supports the Program on outreach with Third Parties and the public, and attends or leads technical workgroups and feedback group meetings as necessary. USFWS also mobilizes staff to support implementing the Program and resolving Program issues.

Deliverables

- Fisheries elements of the MAP
- Actions leading towards spring-run salmon reintroduction, including compliance with permits and approvals for spring-run salmon reintroduction actions
- Annual donor stock collection plan
- Fish reintroduction protocols and Implementation Plan (Brood Year Plans)
- Draft and final Fish and Wildlife Coordination Act Reports
- ESA consultations, and
- Technical support for permitting and environmental compliance documents

Activities Completed in FY 14

- Coordinated fish reintroduction activities for both fall-run and spring-run Brood Year (BY) 13 and BY 14 initiation
- Provided fishery technical support for SJRRP projects
- Began fish reintroduction technical support and document preparation
- Continued to facilitate access to Federal wildlife refuges for SJRRP purposes
- Coordinated fisheries elements of the FY 14 MAP
- Continued outreach activities related to wild donor stock collections, permitting and rule-making to support reintroduction actions
- Developed BY 13 Operation s Plan (for fall-run and spring-run)
- Completed concurrence memos and biological opinions in accordance with Section 7 of the Endangered Species Act (ESA) for several SJRRP projects
- Began Fish and Wildlife Coordination Act Report preparation and review for several SJRRP projects
- Continued general permitting and environmental compliance support for SJRRP activities
- Began efforts on 10(a)(1)(A) permit application for wild stock collection

Expected FY 15 Activities

- Continue to coordinate fish reintroduction activities for both fall-run and spring-run
- Coordinate fisheries elements of the MAP
- Make substantial progress on the 10(a)(1)(A) permit applications for wild stock collection

- Provide concurrence memos and biological opinions in accordance with Section 7 of the ESA for several SJRRP projects
- Provide fishery technical support for SJRRP projects
- Continue Fish and Wildlife Coordination Act Report preparation and review for several SJRRP projects
- Continue fish reintroduction technical support and document preparation
- Continue general permitting and environmental compliance support for SJRRP activities
- Continue to facilitate access to Federal wildlife refuges for SJRRP purposes
- Begin fisheries modeling support for site specific project alternatives evaluation
- Conduct outreach activities related to wild donor stock collections, permitting and rule-making to support reintroduction actions

Projected FY 16 and FY 17 Activities

All of the activities and deliverables expected in FY 15 are also expected in FY 16 and FY 17. In addition, the 10(a)(1)(A) permit applications for wild stock collection should be completed in FY 16.

3.2.3 National Marine Fisheries Service

Lead	***Start Date***	***Expected Completion Date***
NMFS, Rhonda Reed	2006	On-going for duration of the Program

Table 3-5 NMFS Program Management Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Funding to NMFS	$971,187	$1,000,000	$1,030,000
NMFS Funding	$134,647	$138,552	$141,323
Total	**$1,105,834**	**$1,109,739**	**$1,171,323**

Note: Reclamation funding are funds provided by Reclamation to NMFS for support to the SJRRP. NMFS funding are those funds provided by NMFS to support the SJRRP.

Authority

Public Law 111-11, Section 10011, Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act

Description

NMFS provides scientific expertise as well as regulatory and policy guidance for the reintroduction of Chinook salmon and for the restoration of flows and habitat. NMFS supports the SJRRP's efforts by providing input and developing compliance strategies for efficient ESA and Magnuson-Stevens Fishery Conservation and Management Act compliance for anadromous

fish, as well as taking the lead role for the development and implementation of a rule in accordance with the ESA for the reintroduction of spring-run Chinook salmon to the San Joaquin River, consistent with the Settlement and Public Law 111-11. NMFS provides guidance and technical support to the SJRRP on salmonid monitoring and management and ensures consistency and integration of program activities by coordinating with other entities and programs that may affect migrating salmonids on the San Joaquin River and through the Delta. NMFS also participates as a Federal liaison to the TAC. NMFS leads the Fisheries Reintroduction and Regulatory Team, and participates in the Program Management Team, Fisheries Management Work Group, and various workgroups to assist Reclamation in the implementation of the SJRRP. In 2024, NMFS will report to Congress on the status of the reintroduction of spring-run Chinook salmon.

Deliverables

- Biological consultations on actions affecting listed anadromous fish
- Conduct, support, and attend public meetings
- Written recommendations for monitoring activities for reintroduced salmon
- Recommendations for monitoring and management activities for reintroduced salmon
- ESA rules, permits, and associated NEPA compliance efforts in support of spring-run reintroduction
- Technical support for population parameters, informing model development to simulation of life stage fish abundance
- Written comments on simulation models in support of anadromous fish species
- Regulatory compliance and technical support for program and project-level SJRRP actions, and
- Technical guidance as necessary for all anadromous fisheries related aspects of the SJRRP

Activities Completed in FY 14

- Completed ESA regulatory requirements to allow release of Central Valley spring-run Chinook salmon to the San Joaquin River
- Completed internal and external outreach for roll-out of final ESA rules for the reintroduction of Central Valley spring-run Chinook salmon to the San Joaquin River
- Continued attending and supporting public workshops, interagency workshops, and public tours for the SJRRP
- Continued technical assistance for completing Restoration Flows Guidelines, Ecosystems Diagnosis and Treatment model, and technical support for modeling regarding salmonid habitat needs

- Continued technical support to and regulatory compliance for multiple small-scale projects including fish studies, species surveys, monitoring well installations, seepage management projects, soil surveys, and other investigations.
- Continued technical assistance related to salmon reintroduction and modeling activities
- Prepared ESA section 4(d) take exemption requests for listed salmonids that may be affected by MAP studies and other SJRRP actions
- Reviewed and provided technical assistance for environmental documentation prepared in support of the Mendota Pool Bypass and Reach 2B Channel and Structural Improvements Project
- Prepared ESA and Essential Fish Habitat consultations on SCARF operations and maintenance, 2014-15 MAP studies on seepage and other projects as needed, and
- Prepared 2014 technical memorandum for calculation of excepted take for reintroduced spring-run Chinook salmon at the State and Federal facilities in the Delta, in coordination with Reclamation, DWR, and interested stakeholders
- Completed a series of technical workshops to explore methodologies for calculation of excepted take for reintroduced spring-run Chinook salmon at the State and Federal facilities in the Delta when natural production may occur, in coordination with Reclamation, DWR, and interested stakeholders

Expected FY 15 Activities

- Provide technical assistance to complete approvals for Multi-stock Hatchery and Genetics Management Plan for operation of Salmonid Conservation and Research Facility
- Continue processing ESA section 4(d) take exemption requests for listed salmonids that may be affected by MAP studies and other SJRRP actions
- Continue reviewing or preparing project and environmental compliance documents for various site-specific projects
- Prepare 2015 technical memorandum for calculation of excepted take for reintroduced spring-run Chinook salmon at the State and Federal facilities in the Delta, in coordination with Reclamation, DWR, and interested stakeholders
- Complete a technical guidance document on methodologies for calculation of excepted take for reintroduced spring-run Chinook salmon at the State and Federal facilities in the Delta when natural production may occur, in coordination with Reclamation, DWR, and interested stakeholders
- Begin coordinating development of ESA consultations for Central Valley Project and State Water Project operations with Bay-Delta Conservation Plan development to ensure SJRRP recapture opportunities are addressed, as well as to ensure that accounting for reintroduced spring-run Chinook salmon at the Delta facilities meets the *de minimus*

requirement for impacts to water supply, storage releases, and bypass flows by unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws

- Continue stakeholder discussions regarding voluntary and collaborative options for salmon and steelhead protection
- Continue regular attendance at various SJRRP working group and stakeholder meetings
- Continue technical assistance related to salmon reintroduction, and
- Continue technical and regulatory compliance assistance

Projected FY 16 and FY 17 Activities

All of the activities and deliverables expected in FY 15, with the exception of the technical guidance document that will have been completed in FY 15, are also expected in FY 16 and FY 17. In addition, in FY 16, NFMS anticipates the receipt of application and completion of analysis of whether to approve the Multi-stock Hatchery and Genetics Management Plan for operation of Salmonid Conservation and Research Facility and collaborating with the Fisheries Management Work Group on completing a 5-year review of information collected on Chinook salmon actions and studies.

3.2.4 California Department of Fish and Wildlife

Lead	***Start Date***	***Expected Completion Date***
DFW, Gerald Hatler	2006	On-going for duration of the Program

Table 3-6 DFW Program Management Cost Estimate for FY 15 to FY 17

	FY 15 Estimate[1, 2]	**FY 16 Estimate[2, 3]**	**FY 17 Estimate**
DFW (Prop 13)	$292,867	$0	$0
DFW (Prop 84)[2]	$3,000,000	$17,450,000	$2,000,000
Total	**$3,292,867**	**$17,450,000**	**$2,000,000**

Notes: Activities and budget estimates align with the State of California FY, which runs from July 1 through June 30 of the following year.

[1] Approximately $1,000,000 will be used to fund Phase 2 of the Salmon Conservation and Research Facility.

[2] Includes funding to DWR intended to fund Restoration Administrator (RA) and Technical Advisory Committee (TAC) through FY 16.

[3] Increase in funding in FY 16 estimate corresponds with the obligation of funds for the construction of the Salmon Conservation and Research Facility.

Authority

The State of California entered into a Memorandum of Understanding with the Settling Parties in September 2006 and pledged support by assisting in implementation of the Settlement consistent with the State Agencies' authorities, resources and broader regional resource strategies and working collaboratively in the planning design, funding and implementation of appropriate aspects of the Settlement.

Description

As an Implementing Agency in the SJRRP, the Department of Fish and Wildlife (DFW) provides biological support, regulatory oversight, and jurisdiction over the public trust, land use, ecosystem, species and habitat restoration and water quality to assist the Program in achieving the Settlement's Restoration Goal consistent with DFW's authorities, resources and broader regional resource strategies. DFW performs various aspects of the planning and design of activities, including providing technical assistance on actions related to the release of flows, and the design and construction of facilities to provide for fish passage and to prevent fish entrainment as identified in the Settlement. DFW also provides technical assistance in the manner of reintroducing, monitoring and evaluating fish in the main stem of the San Joaquin River, and establishing and maintaining appropriate riparian habitat. DFW provides support for the California Environmental Quality Act (CEQA), State incidental take permits under California Endangered Species Act (CESA), regulatory support for the State Streambed Alteration Agreement process and other aspects of Fish and Game code. DFW helps to ensure consistency and integration of SJRRP activities by coordinating with other entities and programs working on the San Joaquin River. DFW also participates as a member of the Technical Advisory Committee (TAC), Program Management Team, and various workgroups to assist in the implementation of the Program.

Deliverables

- Provide technical and regulatory oversight for SJRRP activities as appropriate
- Develop and implement studies for flow and water quality monitoring, fish passage, fish habitat, temperature monitoring and modeling, fish reintroduction, and fisheries modeling for survival and habitat
- Maintain regular attendance at Engineering, Water Management, Environmental, and Fisheries workgroups, and Program Management Team and TAC meetings
- Provide support for site-specific restoration projects
- Write and review draft documents
- Attend public meetings
- Collaborate with local entities, including but not limited to: the San Joaquin River Conservancy, sport fishing interests, and others
- Develop, implement and operate interim fish rearing facilities for fish reintroduction
- Develop, implement and operate a full-scale Salmon Conservation and Research Facility (SCARF)
- Implement near and long-term fish reintroduction actions
- Plan, prepare and complete CEQA and permitting documents for studies and site specific projects; plan and prepare CEQA and permitting documents supporting conservation facility construction, water supply, operations, and fish reintroduction

- Coordinate with NMFS authorizations for fish reintroduction and National Environmental Policy Act (NEPA) review
- Administer, manage, and track funding, budgets, contracts and agreements
- Serve as CEQA Responsible and Trustee agency, and
- Review and coordinate CEQA documents for the Program

Activities Completed in FY 14

- Continued progress in developing details for fish reintroduction strategies under the 10(a)(1)(A) permit application for the Reintroduction of Central Valley Spring-Run Chinook Salmon into the San Joaquin River
- Planned and implemented monitoring activities and studies including: temperature, habitat, fish community assessment, adult trap and haul, egg survival/gravel suitability study, and juvenile Chinook salmon survival rates while migrating from Friant Dam to the mouth of the Merced River
- Continued participation in technical and SJRRP management working groups
- Continued planning and began moving towards implementing restoration actions of off-channel ponds to enhance recreational fishing opportunities along the San Joaquin River corridor
- Assisted with and completed appropriate environmental disclosure documents associated with CEQA and permits necessary for site-specific actions and monitoring activities
- Continued activities at the interim conservation facility supporting small-scale salmon experiments in the San Joaquin River with rearing fall-run broodstock Chinook salmon from the Merced River Hatchery and spring-run broodstock from the Feather River Hatchery, broodstock production for eventual release in the San Joaquin River and supporting fish tagging and handling experiments
- Continued planning and coordination with the Department of General Services to construct the SCARF
- Completed and certified a Final Environmental Impact Report for the SCARF Construction and Operation and Restoration Activities
- Began funding DWR for technical assistance in implementing program support for design and construction of facilities to provide for fish passage and prevent fish entrainment and the establishment and maintenance of riparian and riverine habitat for fish
- Continued collaborating with other entities and programs working on the San Joaquin River including the San Joaquin River Conservancy, San Joaquin River Parkway and Conservation Trust, and DWR, and
- Continued regular attendance at various SJRRP working group and stakeholder meetings

Expected FY 15 Activities

All of the activities and deliverables identified above are expected in FY 15. In addition, it is expected that the second phase of the construction contract for the SCARF will be awarded in FY 15.

Projected FY 16 and FY 17 Activities

All of the activities and deliverables expected in FY 15 are also expected in FY 16 and FY 17. It is expected that the SCARF construction will be completed in FY 17.

3.2.5 California Department of Water Resources

Lead	*Start Date*	*Expected Completion Date*
DWR, Paul Romero	2006	On-going for duration of the Program

Table 3-7 DWR Program Management Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
DWR (Prop 84)	$2,450,000	$3,550,000	$2,850,000
DWR (Prop 1E)	$2,920,000	$1,800,000	$4,720,000
DWR Total	**$5,370,000**	**$5,350,000**	**$7,570,000**

Notes: Activities and budget estimates align with the State of California's FY which runs from July 1 through June 30 of the following year.

Authority

The State of California entered into a Memorandum of Understanding with the Settling Parties in September 2006 and pledged support by assisting in implementation of the Settlement consistent with the State Agencies' authorities, resources and broader regional resource strategies and working collaboratively in the planning design, funding and implementation of appropriate aspects of the Settlement.

Description

As an implementing agency in the SJRRP, DWR provides engineering and environmental support to assist Reclamation in achieving the Settlement's Restoration Goal. DWR performs engineering and environmental studies, data collection, and design, in a lead and supporting role for site-specific implementation projects and for general program execution. DWR also supports Reclamation to ensure actions of the SJRRP maintain acceptable flood risks by evaluating program actions, coordinating program activities with DWR's FloodSAFE programs, collecting data, performing technical studies and participating in the Channel Capacity Advisory Group (CCAG). DWR ensures consistency and integration of program activities by coordinating with other entities and programs working on the San Joaquin River. DWR also participates as a member of the TAC, Program Management Team, and various workgroups to assist Reclamation in the implementation of both the Restoration and Water Management goals of the SJRRP.

Deliverables

- Final 1-D and 2-D hydraulic models and documentation
- Technical memoranda related to channel capacity and flood risk management for SJRRP actions
- Geotechnical Data and Evaluation Reports for prioritized levee segments
- Technical engineering memoranda of various studies on hydraulics, sediment transport, fish passage, spawning habitat, and other technical studies DWR is leading
- Project and environmental documentation review comments for site-specific projects
- Preliminary and final design memoranda for levee remediation, fish passage, fishery habitat, and elements of other site-specific projects
- Environmental documentation for CEQA compliance on SJRRP and DWR studies and projects
- Annual reporting of DWR monitoring and maintenance programs
- Annual reporting of expenses, and
- Funding support to California State Lands Commission, Restoration Administrator, and TAC members

Activities Completed in FY 14

- Completed geotechnical data collection on highest priority levees in Reach 2A, Reach 4A, and Eastside Bypass
- Initiated geotechnical analyses on highest priority levees in Reach 2A, Reach 4A, and Eastside Bypass to identify potential flood risks associated with Restoration Flows
- Completed data collection activities to support the sediment transport, fish passage, and flow capacity technical studies to refine designs in the Reach 4B site-specific project
- Completed Task 2 Addendum of the SJRRP Fish Passage Improvement Project to evaluate structures in the Chowchilla and Upper Eastside Bypasses
- Began preparing conceptual designs for fish passage modifications to structures in the Eastside Bypass
- Performed topographic surveys and assessed channel capacity in the Eastside and Chowchilla Bypasses to determine the impact of subsidence
- Performed topographic surveys in Reaches 3 and 4A to determine the impact of subsidence on channel capacity

- Continued to evaluate channel capacity in the Restoration Area to verify in-channel capacity and develop a plan for monitoring channel capacity changes
- Completed 1-D hydraulic modeling for various program needs
- Collected bathymetry data in Reach 1A to support future LiDAR mapping
- Continued flow and water quality monitoring in the San Joaquin River at Sack Dam and Washington Road stations and Eastside Bypass Control Structure station
- Continued maintenance of flow and water quality stations on the San Joaquin River at Sack Dam and Washington Road and the Eastside Bypass Control Structure
- Continued gravel monitoring and evaluated bed mobility at riffles in the spring-run salmon spawning reach to help quantify spawning habitat
- Completed preliminary design and coordination of the Sycamore Island Pit 46E public access and habitat enhancement project
- Initiated identification and characterization of Reach 1 gravel pits to assist in the determination of the highest priority gravel pits.
- Continued sediment transport monitoring and analysis in Reach 2A to understand long-term trends and evaluate future flow capacity changes
- Prepared the final 2013 Channel Capacity Report and draft 2014 Channel Capacity Report
- Continued environmental compliance and monitoring of all DWR studies and projects
- Continued collaborating with DWR's Central Valley Flood Management Planning Program including the Regional Flood Management Planning effort, Basin-wide Feasibility Studies, and the Central Valley Flood System Conservation Strategy on San Joaquin River activities
- Continued collaborating with other entities and programs working on the San Joaquin River including the San Joaquin River Conservancy, San Joaquin River Parkway and Conservation Trust, DFW, and the Wildlife Conservation Board, and
- Continued regular attendance at various SJRRP working group and stakeholder meetings

Expected FY 15 Activities

- Complete geotechnical evaluation of highest priority levees in Reach 2A, Reach 4A and Eastside Bypass to determine flood risk associated with Restoration Flows
- Begin developing preliminary designs and costs of potential strategies to maintain acceptable flood risk management in high priority levees in Reach 2A, Reach 4A, and Eastside Bypass, as necessary
- Begin developing plans for and initiate data collection and evaluation of secondary priority levees to identify potential flood risk associated with Restoration Flows

- Continue to assist Reclamation in completing evaluations for the Reach 4B site-specific project to complete the Environmental Impact Statement/Report (EIS/R)
- Complete evaluation of initial in-channel capacity in the Restoration Area and complete a plan to monitor channel capacity in the Restoration Area to identify future changes due to influences such as subsidence, vegetation, and sedimentation
- Evaluate channel capacity in Reach 3 and 4A to determine the impact of subsidence
- Prepare the final 2014 Channel Capacity Report and draft 2015 Channel Capacity Report
- Evaluate and update 1-D hydraulic models for the Restoration Area to include updated LiDAR data
- Complete conceptual designs for fish passage modifications and begin preparing feasibility designs for structures in the Eastside Bypass
- Continue characterization and data collection of Reach 1 gravel pits and begin developing a method to prioritize gravel pits in cooperation with fisheries agencies
- Complete final design and environmental documents for the Sycamore Island Pit 46E public access and habitat enhancement project
- Complete preliminary design for DFW on the Sycamore Island off-stream fishing pond enhancement project
- Complete analysis of bed mobility in Reach 1A that will improve sediment transport calculations and allow more rapid measurement of mobility for other areas within the gravel reach
- Complete artificial redd sand accumulation analysis related to egg survival study in cooperation with USFWS
- Initiate gravel monitoring, analysis of gravel mobilization, and monitoring sand movement within the spring-run spawning reach to help quantify spawning habitat
- Continue monitoring sediment transport in Reach 2A to understand long-term trends and evaluate future flow capacity changes
- Continue conducting flow and water quality monitoring in the San Joaquin River at Sack Dam and Washington Road stations and the Eastside Bypass Control Structure station
- Continue maintaining flow and water quality stations on the San Joaquin River at Sack Dam and Washington Road and Eastside Bypass Control Structure
- Assist in the review and development of project and environmental compliance documents for the Reach 2B, Reach 4B, and other site-specific projects
- Continue performing environmental compliance and monitoring of all DWR studies and projects
- Continued collaborating with DWR's Central Valley Flood Management Planning

Program including the Regional Flood Management Planning effort, Basin-wide Feasibility Studies, and the Central Valley Flood System Conservation Strategy on San Joaquin River activities

- Continue collaborating with other entities and programs working on the San Joaquin River including the San Joaquin River Conservancy, San Joaquin River Parkway and Conservation Trust, DFW, and the Wildlife Conservation Board, and
- Continue regular attendance at various SJRRP working group and stakeholder meetings
- Continue collaborating with Reclamation on environmental documentation preparation and review for the Recapture and Recirculation Plan and any necessary agreements for recapture of Restoration Flows in the Delta and conveyance of recaptured water

Expected FY 16 Activities

- Begin final design and costs to remediate high priority levees in Reach 2A, Reach 4A, and Eastside Bypass, as needed
- Continue data collection and evaluation of secondary priority levees to identify potential flood risk associated with Restoration Flows
- Begin monitoring channel capacity and flood control features to assist Reclamation maintain acceptable flood risk management from SJRRP actions
- Develop plan and initiate monitoring of erosion of channel banks to assist Reclamation in avoiding erosion-related impacts
- Prepare the final 2015 Channel Capacity Report and draft 2016 Channel Capacity Report
- Continue 1-D hydraulic modeling for various program needs
- Continue designs for preferred fish passage modifications to structures in the Eastside Bypass
- Initiate prioritization and additional of Reach 1 gravel pits in cooperation with fisheries agencies
- Construct the Sycamore Island Pit 46E public access and habitat enhancement project
- Complete permitting and final design for DFW on the Sycamore Island off-stream fishing pond enhancement project
- Complete analyses of gravel mobilization and sand movement within the Spring Run spawning reach to help quantify spawning habitat
- Continue sediment transport monitoring in Reach 2A to understand long-term trends and evaluate future flow capacity changes
- Continue to support the review and development of the project and environmental compliance documents for the Reach 2B, Reach 4B, and other site-specific projects
- Continue conducting flow and water quality monitoring in the San Joaquin River at Sack

Dam and Washington Road stations and the Eastside Bypass Control Structure station

- Continue maintaining flow and water quality stations on the San Joaquin River at Sack Dam and Washington Road and Eastside Bypass Control Structure
- Continue environmental compliance and monitoring of all DWR studies and projects
- Continue collaborating with DWR's Central Valley Flood Management Planning Program including the Regional Flood Management Planning effort, Basin-wide Feasibility Studies, and the Central Valley Flood System Conservation Strategy on San Joaquin River activities
- Continue collaborating with other entities and programs working on the San Joaquin River including the San Joaquin River Conservancy, San Joaquin River Parkway and Conservation Trust, DFW, and the Wildlife Conservation Board, and
- Continue regular attendance at various SJRRP working group and stakeholder meetings
- Continue collaborating with Reclamation on environmental documentation preparation and review for the Recapture and Recirculation Plan and any necessary agreements for recapture of Restoration Flows in the Delta and conveyance of recaptured water

Projected FY 17 Activities

- Complete final design to remediate high priority levees in Reach 2A, Reach 4A, and Eastside Bypass, as needed
- Complete geotechnical evaluation of secondary priority levees to determine flood risk associated with Restoration Flows
- Begin data collection and evaluation of third priority levees to identify potential flood risk associated with Restoration Flows
- Continue monitoring channel capacity and flood control features to assist Reclamation maintain acceptable flood risk management from SJRRP actions
- Continue monitoring of erosion of channel banks to assist Reclamation in avoiding erosion-related impacts
- Prepare the final 2016 Channel Capacity Report and draft 2017 Channel Capacity Report
- Continue 1-D hydraulic modeling for various program needs
- Continue designs for preferred fish passage modifications to structures in the Eastside Bypass
- Finalize prioritization and begin conceptual designs to isolate highest priority Reach 1 gravel pits
- Construct the Sycamore Island off-stream fishing pond enhancement project
- Begin conceptual design of pilot projects in Reach 1A to enhance spawning habitat

- Continue monitoring sand supply sites in Reach 1 and evaluate Reach 1 sand budgets and sand supply to Reach 2.
- Continue sediment transport monitoring in Reach 2A to understand long-term trends and evaluate future flow capacity changes
- Continue conducting flow and water quality monitoring in the San Joaquin River at Sack Dam and Washington Road stations and the Eastside Bypass Control Structure station
- Continue maintaining flow and water quality stations on the San Joaquin River at Sack Dam and Washington Road and Eastside Bypass Control Structure
- Continue to support the review and development of the project and environmental compliance documents for Reach 4B and other site-specific projects
- Continue environmental compliance and monitoring of all DWR studies and projects
- Continue collaborating with other entities and programs working on the San Joaquin River
- Continue regular attendance at various SJRRP working group and stakeholder meetings
- Continue collaborating with Reclamation on environmental documentation preparation and review for the Recapture and Recirculation Plan and any necessary agreements for recapture of Restoration Flows in the Delta and conveyance of recaptured water
- Resume funding Restoration Administrator and TAC members activities to support the SJRRP

3.3 Flow-Related Activities

3.3.1 Invasive Species Control

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Katrina Harrison	October 2010	On-going for duration of the Program

Table 3-8 Invasive Vegetation Cost Estimate for FY 15 to FY 17

	FY15 Estimate	FY 15 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$10,000	$10,000	$10,000
Reclamation Contracts	$1,500,000	$0	$0
Total	**$1,510,000**	**$10,000**	**$10,000**

Authority

The project fulfills environmental commitments in the ROD.

Description

Invasive riparian plant species have the potential to substantially reduce the effectiveness of restoration actions. Accessible areas of the San Joaquin River between Friant Dam and the Merced River will be monitored once every 2 years for nonnative invasive plants. The purpose of the monitoring is to determine whether invasive species have spread to areas that previously were not infested with nonnative invasive plants, to assess the effectiveness of control measures, and to help guide new control efforts. Invasive nonnative riparian plants have the potential to spread in response to the additional flows released as the result of the SJRRP (Attachment to SJRRP Program Environmental Impact Statement/Report Attachment L, PDF Pages 184-197).

Management activities will be conducted as described in the SJRRP Invasive Vegetation Monitoring and Management Environmental Assessment and Finding of No Significant Impact (October 2012). Although monitoring activities will occur once every two years, management activities will occur as often as annually depending on the monitoring results and success of past treatment efforts.

Deliverables

Invasive plant monitoring, management action and annual Reports by December 31 each year describing invasive vegetation monitoring and management results.

Activities Completed in FY 14

Completed scheduled invasive vegetation monitoring and annual report.

Expected FY 15, FY 16, and FY 17 Activities

Complete scheduled invasive vegetation monitoring and prepare annual report. In FY 15, Reclamation anticipates awarding a Cooperative Agreement for $1,500,000 for invasive species control for the next 5 years (FY 15 to FY 19).

3.3.2 Channel Capacity Advisory Group

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Katrina Harrison	April 2013	On-going through Water Year 2030

Table 3-9 Channel Capacity Advisory Group Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$100,000	$103,000	$106,000
Total	**$100,000**	**$103,000**	**$106,000**
Notes: DWR will contribute in-kind services to perform data collection and analysis to determine channel capacity. These costs are included in DWR's cost estimates.			

Authority

The ROD calls for Reclamation to determine then-existing channel capacity and to establish the CCAG with representatives from agencies with flood management responsibilities to review Reclamation's assessments of then-existing channel capacities.

Description

As described above, the ROD calls for Reclamation to determine then-existing channel capacity and to establish the CCAG with representatives from agencies with flood management responsibilities to review Reclamation's assessments of then-existing channel capacities. This activity provides consultant and agency support for the determination and review of channel capacities.

Deliverables

Deliverables include the development of an annual report on then-existing channel capacities, erosion, and the activities undertaken during the year to address channel capacity and erosion. Facilitation of the CCAG will result in formal comments and responses to the annual report and meeting notes from CCAG meetings that are anticipated to occur quarterly.

Activities Completed in FY 14

- Continued facilitating CCAG and prepared the Final Annual Channel Capacity Report for Restoration Year 2014
- Prepared draft Annual Channel Capacity Report for Restoration Year 2015

Expected FY 15, FY 16, and FY 17 Activities

Continue facilitating the CCAG and prepare the Annual Channel Capacity Report(s). Project deliverables listed above are only for expected planning activities. Design, land acquisition, and construction activities to address channel capacity concerns have yet to be fully evaluated and are not known at this time.

3.3.3 Steelhead Monitoring

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Don Portz	Winter 2012	FY 19

Table 3-10 Steelhead Monitoring Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$228,000	$235,000	$242,000
Total	**$228,000**	**$235,000**	**$242,000**

Authority

Reclamation committed to the Steelhead Monitoring Plan in the ROD and is required to implement it consistent with the Program Biological Opinion issued by NMFS and in Reclamation's water rights Order.

Description

Steelhead abundance and distribution in the San Joaquin River Basin have substantially decreased, and steelhead are now believed to be extirpated from the Restoration Area. However, Central Valley steelhead distinct population segment includes tributaries to the San Joaquin

River. Restoration Flows could attract adult steelhead into the Restoration Area and attracted fish would not have access to appropriate spawning habitat due to a number of impassable barriers. The steelhead monitoring and detection plan includes areas of the San Joaquin River upstream of the Merced River confluence. In the event that a steelhead is captured, the fish is documented and transported to suitable habitats downstream from the mouth of the Merced River. Electrofishing, fyke traps, and trammel netting collection methods were used for detection of Central Valley steelhead.

Deliverables

Steelhead monitoring activities documented in Steelhead Monitoring Reports

Activities Completed in FY 14

Continued implementation of the Steelhead Monitoring Plan

Expected FY 15, FY 16, and FY 17 Activities

Continued implementation of the Steelhead Monitoring Plan

3.3.4 Programmatic Cultural Resources Consultation

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Adam Nickels	Fall 2012	FY 17

Table 3-11 Programmatic Cultural Resources Consultation Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$100,000	$1,500,000	$1,000,000
Total	**$100,000**	**$1,500,000**	**$1,000,000**

Authority

Section 106 of the National Historic Preservation Act (54 U.S.C. § 300101) and the ROD calls for Reclamation to seek to enter into a programmatic agreement with the State Historic Preservation Officer and other consulting parties, as appropriate, to govern the implementation of the SJRRP's proposed actions and consideration of effects to cultural resources eligible for inclusion or listing on the National Register of Historic Places.

Description

Pursuant to Section 106 of the National Historic Preservation Act (54 U.S.C. § 300101) Reclamation shall consider the effects of an undertaking on cultural resources eligible for inclusion in the National Register of Historic Places and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. This consideration of effects is conducted through the Section 106 implementing regulations at 36 CFR Part 800. As provided for in these regulations at § 800.14(b) the Advisory Council and the agency (Reclamation) official may negotiate a programmatic agreement to govern the implementation of a particular program. The use of a programmatic agreement is encouraged when effects on historic properties cannot be fully determined prior to approval of an undertaking (§ 800.14[b][1][ii]) and when other circumstances warrant a departure from the normal Section 106 process (§ 800.14[b][1][v]). As

committed to in SJRRP 2012 Record of Decision, Reclamation shall seek to enter into a programmatic agreement with the State Historic Preservation Officer and other consulting parties, as appropriate, to govern the implementation of the SJRRP's proposed actions and consideration of effects to cultural resources eligible for inclusion or listing on the National Register of Historic Places.

The SJRRP, in its implementation of the Settlement, has proposed several projects, including those that have the potential to adversely affect historic properties along the San Joaquin River from the base of Friant Dam to the confluence of the Merced River, including but not limited improvements to the Friant-Kern and Madera canals. A Programmatic Agreement helps to define roles and responsibilities for identifying and resolving adverse effects to cultural resources eligible for listing or listed on the National Register of Historic Places. Among other things, a programmatic agreement can streamline certain routine activities, outline cultural resources identification effort commitments, prescribe standard treatments for resolving adverse effects to cultural resources, and outline how cooperating agencies and consulting parties interact and resolve other impacts such as the inadvertent discovery or uncovering of human remains, access to sacred sites, or other unintended impacts.

Deliverables

Programmatic agreement signed and executed by the consulting parties including, but not limited to, Reclamation, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation (if they choose to participate). At minimum, a programmatic agreement must be executed between Reclamation and the State Historic Preservation Officer.

Activities Completed in FY 14

Administrative Draft programmatic agreement prepared and reviewed internally

Expected FY 15 Activities

- Initiate consultation with the State Historic Preservation Officer regarding the programmatic agreement including the identification of potential consulting parties
- State Historic Preservation Officer review of the draft of programmatic agreement
- Public review of State Historic Preservation Officer reviewed programmatic agreement

Projected FY 16 and FY 17 Activities

- Execute programmatic agreement
- Implement commitment stipulations of programmatic agreement

3.3.5 Millerton Lake Boat Ramps

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Tyler Nunes	January 2015	FY 17

Table 3-12 Millerton Lake Boat Ramps Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$0	$200,000
Total	**$50,000**	**$0**	**$200,000**

Authority

Mitigation commitment in the ROD

Description

As described in the Final Program Environmental Impact Statement/Report for the Program, based on the timing of release of Restoration Flows, earlier seasonal drawdown of Millerton Lake may occur. Reclamation will monitor Millerton Lake pool elevations and, if pool elevations fall below the toe elevations of the two lowest reaching boat ramps (which are at McKenzie Cove and Meadows) as a result of the SJRRP, Reclamation will mitigate by either extending existing low-water launch ramp(s), developing a new ramp, or providing other temporary access to avoid loss of launching capacity and to permit boats to be launched on the lake with an additional 10 to 15 feet of drawdown during mid- and late-summer of Dry and Critical-High water years.

Deliverables

- Coordination with Department of Parks and Recreation
- Develop plan to extend boat ramps or construct new boat ramps
- Complete environmental compliance
- Implement plan

Activities Completed in FY 14

Began planning effort

Expected FY 15 Activities

- Coordination with Department of Parks and Recreation
- Develop plan to extend boat ramps or construct new boat ramps
- Begin preparation of environmental compliance documents

Projected FY 16 Activities

None

Projected FY 17 Activities

Complete environmental compliance documents and implement plan.

3.3.6 Traffic Detour Planning

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Delyssa Bloxson	January 2015	FY 16

Table 3-13 Traffic Detour Planning Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$10,000	$0
Total	**$50,000**	**$10,000**	**$0**

Authority

This project was identified in the SJRRP ROD; Reclamation has to implement detour plan for routes that may be inundated as a result of the release of Interim and Restoration Flows. Reclamation will complete the vehicular detour plan in accordance with current Caltrans Standard Plans and Specifications within 1 year of the signing of the Record of Decision. This project is a continuation of these efforts.

Description

Traffic detour plans were completed for San Mateo and Dan McNamara Road as part of the Interim Flows efforts. This activity would include preparing revised plans for the Restoration Flows and submitting those to the respective county with jurisdiction. Reclamation would then implement the traffic detours and install the signage once the plans are approved.

Deliverables

Revised traffic plans and purchase and installation of detour signs

Activities Completed in FY 14

None. Project initiated in FY 15.

Expected FY 15 Activities

Revised traffic plans and purchase and installation of detour signs.

Projected FY 16 Activities

Any remaining installation activities.

Projected FY 17 Activities

None anticipated. Project should be completed in FY 16.

3.3.7 Sand Slough / Eastside Bypass Sand Removal

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Tyler Nunes	September 2011	FY 16

Table 3-14 Sand Slough / Eastside Bypass Sand Removal Project Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$400,000	$0	$0
Reclamation Contracts	$800,000[1]	$0	$0
Total	**$1,200,000**	**$0**	**$0**

1. Reclamation's cost estimate is based on a design contingency of 15% and a construction contingency of 25%. These contingency estimates, although appropriate for other construction projects and part of Reclamation's standard cost estimating process, are high for this project since the project consists of sand removal activities and construction of a low flow crossing that includes rock and gravel materials only. However, the contingency estimates are not being revised at this time as they are part of Reclamation's standard cost estimating process. The project is likely to come in under budget.

Authority

Public Law 111-11 Section 10004(a)(2)

Description

Complete all activities necessary to remove accumulated sediments and remove an inoperable culvert structure to allow passage of Restoration Flows and fish.

Project activities include project management and coordination, evaluating alternatives, completing environmental compliance documentation, including preparing an Environmental Assessment (EA), obtaining all applicable permits and clearances, contracting, engineering design plan development, demolition, sand removal, and crossing construction activities, if determined necessary, and construction management oversight.

Deliverables

- Project Description
- Biological survey reports
- Land access permits and environmental compliance documents
- ESA Section 7, Clean Water Act Section 401 and 404 Permit, Section 106 compliance and obtain other permits as required
- Engineering design plans and construction reports
- Construction (sediment excavation and inoperable culvert structure removal)
- Project Management Activities including invoicing, cost estimating; bid-ready design; bid documents and documenting project close-out

Activities Completed in FY 14

- Continued efforts on the environmental compliance activities
- Completed land access activities
- Continued project management oversight
- Completed engineering design plan

Expected FY 15 Activities

- Complete biological survey reports
- Obtain all land access permits
- Complete all environmental documents and permits

Projected FY 16 and FY 17 Activities

Construction activities to be completed in FY 2016 followed by project closeout. No costs are included for these activities as they would be part of the construction contract awarded in FY 15.

3.3.8 Daily Flow Management and Monitoring

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Katrina Harrison and Emily Thomas	2009	On-going for duration of the Program

Table 3-15 Daily Flow Management and Monitoring Project Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$77,000	$79,000	$82,000
Total	**$77,000**	**$79,000**	**$82,000**

Authority

Paragraph 13 of the Settlement

Description

This activity includes the allocation, release and management of flows consistent with the Restoration Flow Guidelines, the State Board Order, the Settlement, and the Settlement Act.

Deliverables

- Annual Gravelly Ford Compliance Report
- Allocation and Default Flow Schedule (submit to Restoration Administrator and review Restoration Administrator recommendations for Restoration Flow Guidelines compliance)

- Flows-related notices posted to the Program website

Activities Completed in FY 14

- Released Restoration Flows from Friant Dam consistent with the Restoration Flow Guidelines, the State Board Order, the Settlement, and the Settlement Act
- Continued monitoring Gravelly Ford Compliance during non-flexible flow periods
- Submitted flow allocations to Restoration Administrator and review Restoration Administrator recommendations for Restoration Flow Guidelines compliance
- Completed daily flow tracking spreadsheets
- Coordinated monthly flow scheduling conference calls
- Coordinated with Mendota Pool operators
- Posted flows-related notices to Program website, and
- Continued managing Flexible Flow Periods (Fall Pulse; no Spring Pulse in 2014)

Expected FY 15, FY 16, and FY 17 Activities

All of the activities and deliverables completed in FY 14 are also expected in FY 15, FY 16, and FY 17.

3.3.9 Stream Gaging

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Katrina Harrison and Emily Thomas	2009	On-going for duration of the Program

Table 3-16 Stream Gaging Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$119,000	$123,000	$218,000
Total	**$119,000**	**$123,000**	**$218,000**

Authority

Paragraph 13 of the Settlement

Description

This activity includes the installation, operation, maintenance, repair and replacement of stream gages necessary to monitor Restoration Flows.

Deliverables

- Functioning stream gaging stations
- Replacement GOES satellites, antennas, water quality sondes, and other parts for stream gaging stations

Activities Completed in FY 14

Functioning stream gaging stations.

Expected FY 15, FY 16, and FY 17 Activities

All of the activities and deliverables completed in FY 14 are also expected in FY 15, FY 16, and FY 17.

3.3.10 Unreleased Restoration Flows

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Erika Kegel	2014	On-going until around FY 30

Table 3-17 Unreleased Restoration Flows Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$36,000	$37,000	$38,000
Total	**$36,000**	**$37,000**	**$38,000**

Authority

Paragraph 13(i) of the Settlement

Description

This activity includes the development and execution of agreements to bank, store, or exchange Unreleased Restoration Flows.

Deliverables

Multiple agreements to bank, store, exchange or sell Unreleased Restoration Flows

Activities Completed in FY 14

Executed 29 Agreements for 11,425 AF of 2013 Unreleased Restoration Flows

Expected FY 15 Activities

- Execute agreements for 2015 Unreleased Restoration Flows
- Negotiate longer-term Unreleased Restoration Flow agreements for Restoration Year 2016 and beyond

Projected FY 16 and FY 17 Activities

Review and update agreements, as necessary

3.3.11 Restoration Flow Guidelines

Lead	*Start Date*	*Expected Completion Date*
Reclamation, TBD	2007	On-going and periodic updates

Table 3-18 Restoration Flow Guidelines Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$26,000	$106,000	$0
Total	**$26,000**	**$106,000**	**$0**

Authority

Paragraph 13(j) of the Settlement

Deliverables

Periodic updates to the Restoration Flow Guidelines consistent with the revision protocol identified in the Guidelines.

Activities Completed in FY 14

Completed the Restoration Flow Guidelines including the Gravelly Ford Compliance protocol.

Expected FY 15 Activities

Continue operation in accordance with the Restoration Flow Guidelines issued December 2013. Initiate an update to the Restoration Flow Guidelines.

Projected FY 16 and FY 17 Activities

Complete an update to the Restoration Flow Guidelines.

3.3.12 Data Management

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Emily Thomas	2009	On-going for the duration of the Program

Table 3-19 Data Management Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$250,000	$258,000	$133,000
Total	**$250,000**	**$258,000**	**$133,000**

Authority

This project supports the implementation of the Settlement by providing information on the monitoring and compliance of Restoration Flows with the Exhibit B hydrographs and other applicable flow releases at six different locations mandated by the Settlement. It will also provide other project related water quality and biological data for analysis to support the Restoration Goal.

Description

The Data Management project provides storage, quality control, and presentation of SJRRP related data. Data will be made available to the public through cloud computing storage outside the Department of the Interior network infrastructure. All the hydrologic and hydraulic data related to the Restoration Program will be stored in one centralized server.

Deliverables

- Database server and associated software
- Design Database to store hydrologic, hydraulic, and biological data
- Develop Software to display data in Cloud Server, and

Activities Completed in FY 14

- Developed data management software
- Transferred telemetry data to SJRRP server

Expected FY 15 Activities

- Publish SJRRP data in Cloud Server
- Develop reports for database – including flow bench evaluations, recapture and recirculation reports, weekly groundwater reports, total Restoration Flows released, and similar
- Develop interface tools to further analyze data on the web-based interface

Projected FY 16 and FY 17 Activities

Continue data management, report development and quality control.

3.3.13 MAP Actions to Inform Decisions

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Emily Thomas	2010	On-going for the duration of the Program

Table 3-20 MAP Actions Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$750,000	$773,000	$796,000
Total	**$750,000**	**$773,000**	**$796,000**

Authority

The project supports implementation of Settlement Paragraphs 11, 12, 13, and 14 actions to achieve the Restoration and Water Management goals.

Description

The Monitoring and Analysis Plan is an annual update to the SJRRP strategy to resolve uncertainties associated with flow management, channel improvements, fish reintroduction, and water management on the San Joaquin River. The Annual Technical Report is an incremental update on monitoring results from physical and biological studies on the San Joaquin River. This activity also includes funding and carrying out the studies that are implemented by Reclamation and USFWS that are part of the Monitoring and Analysis Plan.

Deliverables

Project deliverables are produced annually and include the following:

- Draft and final Monitoring and Analysis Plan
- Studies implemented by Reclamation or USFWS in the Monitoring and Analysis Plan
- Environmental compliance actions for Reclamation and USFWS studies in the Monitoring and Analysis Plan
- Restoration Goal Technical Feedback meetings

Activities Completed in FY 14

- Produced 2014 Annual Technical Report and 2015 Monitoring and Analysis Plan, and
- Completed the study efforts lead by Reclamation and USFWS in the Monitoring and Analysis Plan

Expected FY 15, FY 16, and FY 17 Activities

Annual development of the Monitoring and Analysis Plan and completion of the study efforts lead by Reclamation and USFWS in the Monitoring and Analysis Plan.

3.3.14 Water Right Annual Report

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Emily Thomas	2009	On-going for the duration of the Program

Table 3-21 Water Right Annual Report Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$37,000	$38,000	$39,000
Total	**$37,000**	**$38,000**	**$39,000**

Authority

Reporting is a requirement of the Water Rights Order from the State Water Resources Control Board for release of SJRRP Restoration Flows.

Description

Report on compliance with each condition of the Water Rights Order at the completion of each Water Year.

Deliverables

Annual compliance report required by State Water Resources Control Board Water Rights Order each Water Year.

Completed FY 14 Activities

Completed compliance report for the SJRRP's March 2013 Temporary Urgency Change Petition and final Water Rights Order.

Projected FY 15, FY 16, and FY 17 Activities

Annual Compliance Report

3.3.15 Seepage Actions

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Katrina Harrison and Adam Nickels	2009	On-going for the duration of the Program

Table 3-22 Restoration Flow Guidelines Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff, Construction and Expenses	$5,031,600	$11,133,500	$7,500,000
U.S. Geological Survey Staff and Expenses	$320,000	$220,000	$150,000
Realty Agreements / Land Acquisition	$15,453,000	$4,451,500	$0
Total	**$20,804,600**	**$15,805,000**	**$7,650,000**

Authority

The ROD commits Reclamation to implementing the Physical Monitoring and Management Plan, which includes the Seepage Management Plan.

Description

In response to ROD commitments, Reclamation developed a Seepage Management Plan (updated in 2013) in coordination with the landowners. It lays out a groundwater monitoring network and identifies thresholds in wells within the monitoring network. Reclamation limits the release of Restoration Flows to flow rates that do not cause groundwater levels to rise above thresholds. Channel capacities must meet the most restrictive of seepage constraints and levee constraints. Seepage constraints vary by season and by hydrology below Sack Dam. Implementation of physical or real-estate related seepage projects will allow higher flow rates without groundwater levels rising above thresholds.

Reclamation has developed a process to increase the non-damaging conveyance capacity for the conveyance of Restoration Flows. Seepage projects may include physical projects, such as interceptor lines, drainage ditches, slurry walls, shallow groundwater pumping, or raising the ground surface. There may also be real estate actions, such as license agreements, easements, or acquisition. The program staff would coordinate with the landowners to select the specific project for each location after an evaluation of the site. The groundwater seepage portion of the project involves 93 individual parcel groups, sections of property divided by groundwater conditions and ownership, with more than 23,000 acres and 56 different landowners. Reclamation estimates that it will take approximately 2 years from project initiation to completion of analysis and selection of alternatives and an additional three to nine months for real estate and contracting actions for final design and construction. A construction action can require an additional one or two years. Reclamation has begun work on several of the high priority seepage parcel groups. Table 3-24 provides the major milestones in terms of flow rates in the river.

Table 3-23 Seepage Projects by Flow Rate and Expected Year Completed

Flow Rate (cfs)	Number of Projects	Completion Year
300	3	2014-15
700	2	2016
1,300	7	2018
2,000	12	2019
3,000	36	2026
4,000	26	2027
4,500	8	2027

Deliverables

- Updated Seepage Management Plan
- Various study reports, including model documentation and Site Evaluation and Appraisal Level Design Report (one for each project, up to 93 projects)
- Project Report including 30-60% design (one for each project, up to 93 projects)
- Completed environmental compliance documents and applicable permits (one set for each project, up to 93 projects), and
- 90% designs, plans and specifications (from contractor, one set for each project, up to 93 projects)

Activities Completed in FY 14

- Completed the first seepage project, a seepage easement on Parcel Group 167
- Completed site evaluation and preliminary design for 5 seepage parcel groups

- Updated Seepage Project Handbook with revised timelines and additional detail learned from first 3 projects
- Revised thresholds from the Seepage Management Plan, September 2014
- Finalized model report for groundwater model from the U.S. Geological Survey
- Various ongoing activities, including data management, monitoring and reporting of over 180 groundwater wells, and operations to avoid seepage impacts

Expected FY 15 Activities

- Additional updates to the Seepage Management Plan, if necessary
- Ongoing work, including monitoring, analysis, modeling and reporting, and
- Construct or acquire additional 6-10 seepage projects including related deliverables

Projected FY 16 and FY 17 Activities

The same activities and deliverables expected in FY 15 are also projected for FY 16 and FY 17.

3.3.16 Flowage Easements

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Katrina Harrison	2011	FY 15

Table 3-24 Flowage Easement Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$0	$0
Easements	$2,850,000	$0	$0
Total	**$2,900,000**	**$0**	**$0**

Authority

Section 10009(a)(2) of Public Law 111-11

Description

Flowage easements are required on private property in the Eastside Bypass in order to release flows into the Eastside Bypass in compliance with the Settlement and Public Law 111-11. Paragraph 13 of the Settlement states: “In addition to the channel and structure improvements identified in Paragraph 11, releases of water from Friant Dam to the confluence of the Merced River shall be made to achieve the Restoration Goal.” Nine private landowners own land in the Eastside Bypass.

Deliverables

Completed flowage easements for all properties in the Eastside Bypass from Sand Slough Control Structure to the confluence with the San Joaquin River.

Activities Completed in FY 14

Obtained 7 of the 9 needed flowage easements in the Eastside Bypass (one easement was a fee title purchase).

Expected FY 15 Activities

Complete the last two easements.

Projected FY 16 and FY 17 Activities

None. This project should be completed in FY 15.

3.3.17 Levee Stability Actions

Levee stability actions are described in Section 3.2.5 under DWR's activities.

3.4 Restoration Goal Activities

3.4.1 Mendota Pool Bypass and Fish Screen

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Katrina Harrison	2009	Construction – FY 19 Ongoing O&M thereafter

Table 3-25 Mendota Pool Bypass and Fish Screen Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses[1]	$100,000	$1,000,000	$1,000,000
Reclamation Funded Contracts[2]	$0	$10,000,000	$30,000,000
Land Acquisition Costs	$1,200,000	$2,100,000	$0
Total	**$1,300,000**	**$13,126,000**	**$31,000,000**

Notes:

1. Reclamation labor for FYs 14-16 include design and engineering staff from Reclamation's Technical Service Center and costs for efforts to gather geotechnical data to support design.
   Reclamation labor for FY 17 includes increased involvement by construction branch and decreased involvement by geotechnical staff and design staff.
2. The contractor costs for FYs 15 - 17 include award of a construction contract for the Compact Bypass Bifurcation Structure and one for the Compact Bypass excavation and grading.

Authority

Paragraph 11(a)(1) of the Settlement

Description

The Mendota Pool Bypass component of the Mendota Pool Bypass and Reach 2B Improvements Project includes the construction, operation, and maintenance of the Mendota Pool Bypass. The project implements Paragraph 11(a)(1) of the Settlement, which calls for the creation of a bypass channel around Mendota Pool to ensure conveyance of at least 4,500 cubic feet per second 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 of the Interior to make deliveries of San Joaquin River water into Mendota Pool when necessary. The project area is in Fresno and Madera counties, near the town of Mendota, California. Specifically, the project will include completing the environmental compliance process, including the preparation of an EIS/R and ESA consultation, obtaining permits, design, land acquisition, implementation of mitigation and compensation measures, as applicable, and construction of levees, river channels, and flow and fish passage structures.

Deliverables

- Public outreach via public and stakeholder meetings and public outreach materials
- Project Description Technical Memorandum
- Protocol-level surveys for sensitive species and habitats and subsequent survey reports
- Draft and Final EIS/R and related notices
- ROD and Notice of Determination
- Support permitting, including:
  - ESA Section 7 compliance
  - CESA compliance
  - Clean Water Act Section 401 and 404 compliance
  - Rivers and Harbors Act Section 14 (408) and Section 10 compliance, as applicable
  - Clean Air Act and California Clean Air Act conformity
  - National Historic Preservation Act, Section 106 compliance
  - State Lands Land Use Lease
  - County encroachment permits
  - Central Valley Flood Protection Board Permits
  - Section 1600 permit, and
  - Other permits as required
- 30%, 60%, and 90%, and 100% design plans and cost estimates
- Bid ready design
- Value engineering and design, estimating, and construction review reports
- Bid documents
- Construction reports, including as-built construction reports, and

- Completed fish screens, passageways, dam (if part of selected alternative), and associated infrastructure

Activities Completed in FY 14

- Prepared Second Administrative Draft EIS/R document
- Began geotechnical investigations to support design, and
- Began preparing designs and construction plans

Expected FY 15 Activities

- Complete Public Draft EIS/R and all related notices
- Complete Public meetings for public draft EIS/R
- Begin land acquisition activities
- Continue designs and construction plans, and
- Complete geotechnical investigations to support design

Projected FY 16 Activities

- Sign ROD and Notice of Determination
- Obtain all applicable permits
- Complete land acquisition for the Compact Bypass and associated activities
- Complete conservation measures, including compensation measures, as applicable
- Continue final designs and construction plans

Projected FY 17 Activities

- Begin construction activities

3.4.2 Reach 2B and Chowchilla Bypass Structure Improvements

No activities are planned in FY 15, FY 16, and FY 17 for the Reach 2B component of the Mendota Pool Bypass and Reach 2B Channel Improvements Project beyond completion of the EIS/R described in Section 3.4.1 above.

3.4.3 Reach 4B/ESB/MB Channel and Structural Improvements

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Becky Victorine	2009	Construction – FY 29 Ongoing O&M thereafter

Table 3-26 Reach 4B/ESB/MB Channel and Structural Improvements Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$150,000	$175,000	$250,000
Total	**$150,000**	**$175,000**	**$250,000**
Note: Reclamation issued a contract of environmental compliance and permitting efforts in FY 14. FY 15, FY 16, and FY 17 costs represent staff time for project management, environmental compliance, and initial design efforts.			

Authority

Paragraphs 11(a)(3), 11(a)(4), 11(a)(5), 11(a)(8), 11(a)(9), and 11(b)(1) of the Settlement; Section 10009(f)(2) of the Settlement Act

Description

The Reach 4B Project supports key elements in Paragraph 11(a) and 11(b) of the Settlement, specifically:

- Modifications in San Joaquin River channel capacity to the extent necessary to ensure conveyance of at least 475 cubic feet per second (cfs) through Reach 4B
- Modifications at the Reach 4B Head gate on the San Joaquin River channel to ensure fish passage and enable flow routing of between 500 cfs and 4,500 cfs into Reach 4B, consistent with the Settlement
- Modifications to the Sand Slough Control Structure to ensure fish passage
- Modifications to structures in the Eastside and Mariposa bypass channels, to the extent needed to provide anadromous fish passage on an interim basis until completion of the Phase 2 improvements projects identified in the Settlement
- Modifications in the Eastside and Mariposa bypass channels to establish a suitable low-flow channel, if the Secretary of the Interior in consultation with the Restoration Administrator determines such modifications are necessary to support anadromous fish migration through these channels
- Modifications in the San Joaquin River channel capacity (incorporating new floodplain and related riparian habitat) to ensure conveyance of at least 4,500 cfs through Reach 4B, unless the Secretary, in consultation with the Restoration Administrator and with the concurrence of NMFS and USFWS, determines that such modifications would not substantially enhance achievement of the Restoration Goal

In addition, the Settlement Act contains the following language requiring a report on the long-term flows in Section 10009(f)(2):

- Secretary of the Interior shall submit a report to Congress on whether to expand the channel conveyance to 4,500 cfs in Reach 4B of the San Joaquin River, or use an alternative route for pulse flows.
- Secretary of the Interior shall make the high-flow routing determination prior to undertaking "any substantial construction work" to increase capacity in Reach 4B of the San Joaquin River.

The Reach 4B Project will address Paragraph 11(a) requirements of at least 475 cfs capacity in the San Joaquin River. It may also meet the requirements in Paragraph 11(b)(1) of the Settlement. As stipulated in the Settlement Act, no substantial construction work can occur to increase capacity in Reach 4B of the San Joaquin River until the high-flow routing determination is made, which includes the Secretary of the Interior's report to Congress regarding the high-flow routing determination.

Project Deliverables

- Public outreach via public and stakeholder meetings and public outreach materials
- Project Description Technical Memorandum
- Protocol-level surveys for sensitive species and habitats and subsequent survey reports
- Draft and Final EIS/R and related notices
- ROD and Notice of Determination
- Support permitting, including:
  - ESA Section 7 compliance
  - CESA compliance
  - Clean Water Act Section 401 and 404 compliance
  - Rivers and Harbors Act Section 14 (408) and Section 10 compliance
  - Clean Air Act and California Clean Air Act conformity
  - National Historic Preservation Act, Section 106 compliance
  - State Lands Land Use Lease
  - County encroachment permits
  - Central Valley Flood Protection Board Permits
  - Section 1600 permit, and
  - Other permits as required
- 30%, 60%, and 90%, and 100% design plans and cost estimates

- Value engineering and design, estimating, and construction review reports
- Bid documents
- Construction reports, including as-built construction reports, and
- Construction of the project as identified in the ROD

Activities Completed in FY 14

Issued contract to complete environmental compliance and permitting efforts.

Expected FY 15 Activities

- Install staff gages in Reach 4B1 along with water quality sensors and collect bathymetry data in order to update hydraulic models
- Prepare first administrative draft EIS/R
- Hold stakeholder meetings

Projected FY 16 Activities

- Collect data from staff gages in Reach 4B1 along with water quality sensors and sediment quality information
- Prepare second administrative draft EIS/R
- Hold stakeholder meetings

Projected FY 17 Activities

- Begin drafting Reach 4B Report to Congress based on water quality, staff gages, sediment quality and other information collected in previous years.
- Complete public Draft EIS/R and related notices
- Hold public meetings for public Draft EIS/R
- Begin preparing Final EIS/R

3.4.4 Arroyo Canal Fish Screen and Sack Dam Fish Passage

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Adam Nickels	2009	Construction – FY 19 Ongoing O&M thereafter

Table 3-27 Arroyo Canal Fish Screen and Sack Dam Fish Passage Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$77,000	$50,000	$50,000
Reclamation Funded Financial Assistance Agreements	$0	$1,000,000	$0
Total	$77,000	$1,050,000	$0
Notes: Design construction activity schedule and deliverables may be revised upon determination of future project impacts resulting from subsidence as additional subsidence data becomes available and is evaluated.			

Authority

Paragraph 11(a)(6) and 11(a)(7) of the Settlement

Description

Complete all activities necessary to screen the Arroyo Canal irrigation diversion to prevent entrainment of anadromous fish and modify Sack Dam to ensure fish passage consistent with Paragraph 11(a)(6) and 11(a)(7) of the Settlement. Project activities include:

- Project management and coordination
- Evaluating design alternatives
- Completing the NEPA and CEQA process, including the preparation of an Environmental Assessment/Initial Study
- Obtaining all permits and clearances
- Conducting all engineering design services, and
- Constructing the project.

The project includes implementing all activities to construct a new 700 cfs V-configuration profile bar fish screen in the Arroyo Canal, a new Sack Dam, and a fish passageway adequate to pass salmon and other fish, and associated infrastructure.

Deliverables

- Technical Memoranda (TMs) including an Initial Options TM, Data Needs TM, Field Survey Methods and Results TM, Analysis Approach TM, Alternatives TM, and a Regulatory Compliance TM

- Public outreach materials
- Protocol-level surveys for sensitive species and habitats and subsequent survey reports
- Public Draft and Final Environmental Assessment/Initial Study and all related notices
- Support for permitting, including:
  - ESA Section 7 compliance
  - California Endangered Species Act (CESA) compliance
  - Clean Water Act Section 401 and 404 compliance
  - Clean Air Act and California Clean Air Act conformity
  - National Historic Preservation Act, Section 106 compliance
  - County Encroachment Permit
  - Lake and Streambed Alteration Permit
  - Incidental Take Permit, and
  - Other permits as required
- Memorandums of Understanding (MOU) for environmental permitting, engineering design, construction, and long-term operations and maintenance
- 30%, 60%, and 90%, and 100% design plans and cost estimates
- Value engineering and design, estimating, and construction review reports
- Bid documents
- Construction reports, including as-built construction reports, and
- Completed fish screen, passageway, dam, and associated infrastructure

Activities Completed in FY 14

Completed Financial Assistance Agreement to modify ongoing permitting, environmental compliance, and engineering design activities.

Expected FY 15 Activities

- Analyze the impacts of subsidence on the project
- Continue project management oversight

Projected FY 16 Activities

- Analyze the impacts of subsidence on the project
- Evaluate need and options for interim actions to avoid impacts to listed fish under proposed implementation schedule

- Install temporary fish screen and passage solution
- Continue project management oversight
- Complete Financial Assistance Agreement to modify design to account of subsidence and modify permits and environmental compliance, as needed, to reflect the modified design

Projected FY 17 Activities

Complete design and permitting modifications such that the project is "shovel-ready".

3.4.5 Passage at Key Barriers to Migration

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Katrina Harrison	2014	FY 16

Table 3-28 Passage at Key Barriers to Migration Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$1,200,000	$0
Total	**$50,000**	**$1,200,000**	**$0**
Notes: DWR's actions to address passage at key barriers to migration are described in Section 3.2.5 under DWR's activities.			

Authority

Paragraph 14 of the Settlement and Section 10011 of Public Law 111-11

Description

The lower Merced National Wildlife Refuge Weir (Weir #2) is a jump barrier to salmon at all flows less than 3,000 cfs. When the boards are out, it is a jump barrier at flows less than 100 cfs and possibly a depth barrier at flows less than 500 cfs. Significant debris has accumulated at the weir. This action would involve working with the refuge to change operations at the weir, installing a pump to provide an alternate water diversion mechanism, and cleaning out the debris stuck in the weir. The higher estimated cost, for installation of a pump with a fish screen to replace the need for both refuge weirs, is included here. This cost is from the Reach 4B project. Non-contract costs are not included as environmental compliance will be done as part of the overall project.

Deliverables

- Environmental compliance documents
- Design package
- Merced National Wildlife Refuge pump and fish screen

Activities Completed in FY 14

None. Project was not initiated.

Expected FY 15 Activities

Planning, design and environmental compliance for Merced National Wildlife Refuge weir reoperation

Projected FY 16 Activities

Merced National Wildlife Refuge weir construction of a pump with fish screen

Projected FY 17 Activities

None, this project should be completed in FY 16.

3.4.6 Gravel Pit Filing and/or Isolation

Gravel pit filling and/or isolating is described in Section 3.2.5 under DWR's activities.

3.4.7 Conservation Facility Construction

Construction of the Conservation Facility is described in Section 3.2.4 under DFW's activities.

3.4.8 Conservation Facility Water Supply Line

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Adam Nickels	2012	FY 17

Table 3-29 Conservation Facility Water Supply Line Cost Estimate for FY 15 to FY 17

	FY15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$50,000	$50,000
Reclamation Funded Contracts	$0	$2,800,000	$0
Total	**$50,000**	**$2,850,000**	**$50,000**

Authority

Paragraph 14 of the Settlement

Description

DFW will construct and operate the SCARF to develop and maintain a genetically diverse brood stock of spring-run Chinook salmon, and potentially fall run Chinook, to meet the annual production targets set by the SJRRP in support of the restoration of spring and fall-run Chinook to self-sustaining levels. Reclamation will construct water supply infrastructure on Federal property at Friant Dam to deliver 20 cfs to the end of Reclamation's property and ultimately to the SCARF and complete other actions to convey 20 cfs to the facility.

This section addresses Reclamation's actions to complete the water supply infrastructure on Federal property and associate water contract modifications and to negotiate a revised or new water service agreement for an additional 20 cfs for the SCARF. DFW's efforts to construct the facility and complete any water supply infrastructure off of Federal property are addressed in Section 3.2.4.

Deliverables

- Draft and Final EA
- Finding of No Significant Impact
- Support permitting, including:
  - ESA Section 7 compliance
  - Clean Air Act and California Clean Air Act conformity
  - National Historic Preservation Act, Section 106 compliance
  - Other permits as applicable
- Geotechnical investigations to asses design criteria for the water supply line
- 30%, 60%, and 90%, and 100% design plans and cost estimates
- Bid ready design and bid documents
- Construction reports, including as-built construction reports, and
- Completed water supply line on Federal property
- Revised or new water service agreement for an additional 20 cfs for the SCARF

Activities Completed in FY 14

- Geotechnical investigations completed
- 30% design plans completed

Expected FY 15 Activities

- 60% design plans and cost estimates
- Draft EA
- Section 106 Compliance
- ESA Section 7 Compliance
- Other permits as needed, and
- Clean Air Act and California Clean Air Act conformity
- Begin negotiations of the revised or new water service agreement for an additional 20 cfs for the SCARF

Projected FY 16 Activities

- 90 and 100% design plans and cost estimates
- Final EA
- Bid ready design and design documents, and

- Finding of No Significant Impact
- Continue negotiations of the revised or new water service agreement for an additional 20 cfs for the SCARF

Projected FY 17 Activities

- Completed water supply line and
- Construction reports including as-built construction reports
- Complete negotiations and execute new water service agreement for an additional 20 cfs for the SCARF

3.4.9 Conservation Facility Operations and Maintenance

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Adam Nickels	2012	June 2022[1]

Table 3-30 Conservation Facility Operations and Maintenance Cost Estimate for FY 15 to FY 17

	FY15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$10,000	$10,000	$10,000
Reclamation-Funded Financial Assistance Agreement[1]	$690,000	$711,000	$733,000
Total	**$700,000**	**$721,000**	**$743,000**
1. Reclamation-Funded Financial Assistance Agreements are with DFW to fund Operations and Maintenance of the interim SCARF.			

Authority

Paragraph 14 of the Settlement

Description

DFW will construct and operate the SCARF to develop and maintain a genetically diverse brood stock of spring-run Chinook salmon, and potentially fall run Chinook, to meet the annual production targets set by the SJRRP in support of the restoration of spring and fall-run Chinook to self-sustaining levels. Reclamation will fund operations and maintenance for 10 years.

This section addresses Reclamation's actions to fund operations and maintenance for the SCARF. DFW's efforts to construct the facility are addressed in Section 4.2.1.

[1] Reclamation committed to providing funding for the operations and maintenance of the Conservation Facility for ten years, or through June 2022.

Project Deliverables

- NEPA documents and
- O&M funding via a Cooperative Agreement

Activities Completed in FY 14

Executed Cooperative Agreement for FY 14 operations and maintenance activities.

Expected FY 15 Activities

Executed Cooperative Agreement for FY 15 operations and maintenance activities.

Projected FY16 and FY 17 Activities

Executed Cooperative Agreement for longer-term operations and maintenance activities.

3.4.10 Donor Stock Collection

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Ali Forsythe; USFWS, John Netto	2010	FY 24

Table 3-31 Donor Stock Collection Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Funding for Other Agencies Staff and Expenses[1]	$80,000	$82,000	$85,000
Total	$80,000	$82,000	$85,000

Notes: [1]Funding by Reclamation to USFWS to support project. This funding is in addition to the funds identified for USFWS in Section 3.2.2. DFW's support to project is captured in description of their activities supporting the Program.

Authority

Paragraph 14 of the Settlement

Description

The SJRRP will collect and tag spring run Chinook salmon from donor sources and transport them to the Interim Conservation Facility or the SCARF, once constructed. The program will also collect, tag, and transport fish for direct translocation to the San Joaquin River. The program will also collect necessary data to allow for the collection of spring-run from donor sources for successful rearing and release.

Deliverables

Spring-run collection and tagging reports

Activities Completed in FY 14

The SJRRP collected a second year of spring-run Chinook salmon broodstock and transported them to the Interim Conservation Facility and translocated juveniles from the Feather River Hatchery for direct release into the San Joaquin River.

Expected FY 15, FY 16, and FY 17 Activities

Annual collection, tagging and transport of spring run Chinook salmon broodstock to the Interim Facility and for direct release into the San Joaquin River. Monitoring of collected donor stock conditions and donor stock population status.

3.4.11 Trap and Haul

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Don Portz	2012	FY 19

Table 3-32 Trap and Haul Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$592,000	$610,000	$628,000
Total	**$592,000**	**$610,000**	**$628,000**

Authority

Paragraph 14 of the Settlement

Description

Reclamation will trap adult Chinook salmon in Reach 4B/5, haul fish to Reach 1, and monitor spawning behavior. Reclamation will also explore and implement juvenile trap and haul actions to test potential methods to assist juvenile fish in outmigration in future dry years.

Deliverables

Trap and haul actions, weekly data sheets, annual summary reports

Activities Completed in FY 14

The SJRRP trapped fall-run adults in Reach 5, transported fish to Reach 1, and monitored spawning activity. The SJRRP also trapped fall-run juveniles in Reach 1 and transported to Reach 5.

Expected FY 15, FY 16, and FY 17 Activities

Trap and haul actions, weekly data sheets, annual summary reports. Adult and juvenile actions are expected in FY 15.

3.4.12 Genetics Monitoring

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Adam Nickels	2013	Ongoing for the duration of the Program

Table 3-33 Genetics Monitoring Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$10,000	$10,000	$10,000
Reclamation Contracts	$0	$0	$229,000
Total	**$10,000**	**$10,000**	**$239,000**
Note: Reclamation awarded an interagency agreement to NMFS in FY 14 for genetics monitoring actions through FY 17. Costs above reflect Reclamation's costs to administer the agreement and develop a new agreement or contract in FY 17 for FY 18 and beyond actions.			

Authority

Paragraph 14 of the Settlement

Description

SJRRP Salmon Genetics include activities to monitor genetics for fall and spring run Chinook salmon in the San Joaquin River, collected from donor streams, and captive reared in the Interim Facility.

Deliverables

Genetics monitoring and Genetics Monitoring Annual Report

Activities Completed in FY 14

The SJRRP executed an Interagency Agreement with NMFS for genetics work.

Expected FY 15, FY 16, and FY 17 Activities

Genetics monitoring and annual report consistent with the scope of the Interagency Agreement.

3.4.13 Segregation Actions

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Ali Forsythe; USFWS, John Netto	2014	FY 19

Table 3-34 Segregation Actions Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY 16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$5,000	$5,000	$5,000
Reclamation Contracts	$195,000	$195,000	$195,000
Total	**$200,000**	**$200,000**	**$200,000**

Authority
Paragraph 14 of the Settlement, Section 10011 of the Settlement Act, and 10(a)(1)(A) permit for spring-run salmon release

Description
The Implementing Agencies will continue to investigate feasible methods to segregate fall- and spring-run spawners to reduce interbreeding between the two runs. The importance of separating the spawners will not be well understood until spring-run are returning to the system, which may first occur in spring 2016. Potential impacts observed in other systems include redd superimposition (disturbance of incubating spring-run eggs) and genetic introgression (fall- and spring-run populations begin to merge and lose distinctiveness).

Deliverables
Segregation Plan and implementation of monitoring actions

Activities Completed in FY 14
Began efforts to explore the need for segregation

Expected FY 15 Activities
Complete segregation plan.

Projected FY 16 and FY 17 Activities
Implement monitoring actions identified in the plan.

3.5 Water Management Goal Activities

3.5.1 Water Management Goal Oversight

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Erika Kegel	2006	Ongoing for the duration of the Program

Table 3-35 Water Management Goal Oversight Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$1,200,000	$1,200,000	$1,200,000
Total	**$1,200,000**	**$1,200,000**	**$1,200,000**
Note: DWR's costs for continued collaboration with Reclamation on environmental documentation preparation and review for the Recapture and Recirculation Plan and any necessary agreements for recapture of Restoration Flows in the Delta and conveyance of recaptured water is included in Section 3.2.5.			

Authority
Paragraph 16 of the Settlement

Description

Water management activities reduce or avoid adverse water supply impacts to all of the Friant Contractors that may result from the Restoration Flows. This activity supports the overall Water Management Goal by providing a coordinated effort to accomplish annual RWA and recirculation activities, hosting technical feedback meetings, and, completing various analyses, technical documents, and reports on the implementation of Paragraph 16.

Deliverables

- Water Management Technical Feedback Meetings and Materials
- Standard Operating Procedures for the Recovered Water Account
- Standard Operating Procedures for Recapture and Recirculation
- Recovered Water Account Methodology
- Annual RWA and Recirculation accounting

Activities Completed in FY 14

- Completed quarterly Technical Feedback Meetings
- Continued to implement annual Recapture and Recirculation Program

Expected FY 15, FY 16, and FY 17 Activities

- Continue Technical Feedback Meetings
- Continue implementing annual Recapture and Recirculation Program

3.5.2 Recapture and Recirculation Plan and Implementation

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Erika Kegel	2015	Ongoing for the duration of the Program

Table 3-36 Recirculation and Recirculation Plan and Implementation Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses or Possible Contractor	$500,000	$500,000	$500,000
Total	**$500,000**	**$500,000**	**$500,000**
Note: DWR's costs for continued collaboration with Reclamation on environmental documentation preparation and review for the Recapture and Recirculation Plan and any necessary agreements for recapture of Restoration Flows in the Delta and conveyance of recaptured water is included in Section 3.2.5.			

Authority

Paragraph 16 of the Settlement

Description

This activity focuses on long-term plans and agreements needed to recapture Restoration Flows in the lower San Joaquin River and the Delta and recirculation from San Luis Reservoir to the Friant Contractors service area. Activities include the Recirculation EIS/R, an agreement between Reclamation and DWR for recapture in the Delta, completing the Investment Strategy for addressing the portion of Paragraph 16(a) that calls for a plan for funding necessary measures, implementing recommendations identified in the 2012 Post-Mortem of the Recapture and Recirculation Program, and conducting a Post-Mortem of the Recapture and Recirculation Program for 2015 Restoration Flows.

Deliverables

- Recapture and Recirculation Plan
- Recirculation EIS/R
- Water Management Goal Investment Strategy
- Agreement for recapture of Restoration Flows in the Delta
- 2015 Post-Mortem of the Recapture and Recirculation Program

Activities Completed in FY 14

- Continued progress on the Investment Strategy
- Initiate Recirculation EIS/R development

Expected FY 15 Activities

- Complete the Investment Strategy
- Continue progress on Recirculation EIS/R
- Develop agreement for recapture of Restoration Flows in the Delta
- Develop agreement for recapture of Restoration Flows in the lower San Joaquin River
- Implement recommendations from the Post-Mortem of the 2012 Recapture and Recirculation Program

Projected FY 16 Activities

- Continue progress on Recirculation EIS/R
- Initiate Post-Mortem of the 2015 Recapture and Recirculation Program
- Review and revise recapture agreements, as necessary

Projected FY 17 Activities

- Complete Recirculation EIS/R
- Review and revise recapture agreements, as necessary

- Implement recommendations from the Post-Mortem of the 2015 Recapture and Recirculation Program

3.5.3 Friant-Kern Canal Capacity Restoration

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Erika Kegel	2010	FY 19

Table 3-37 Friant-Kern Canal Capacity Restoration Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$350,000	$500,000	$250,000
Financial Assistance Agreement(s) for Design and Construction	$1,000,000	$10,000,000	$8,000,000
Total	**$1,350,000**	**$10,500,000**	**$8,250,000**

Authority

Section 10201(a)(1) of the Settlement Act

Description

The Friant Kern Canal (FKC) is a Reclamation-owned facility, operated and maintained by the Friant Water Authority (FWA). The FKC carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is primarily used as supplemental and irrigation supplies in Fresno, Tulare, and Kern counties. Construction of the FKC began in 1945 and was completed in 1951. The FKC originally had a maximum capacity of 5,000 cfs that gradually decreased to 2,500 cfs at its terminus in the Kern River. Since completion of construction in 1951, the FKC has lost its ability to fully meet its previously designed and constructed capacity, resulting in restrictions, at times, on water deliveries to the FKC contractors. The reduction in capacity is a result of several factors, including original design limitations, subsidence, increased canal roughness, and changes in water delivery patterns.

As authorized in the Settlement Act, Reclamation funded a feasibility study and prepared a draft Feasibility Report. The draft Feasibility Report, which recommends the restoration of the capacity of the FKC from Milepost 29.92 to 88.20, and applicable environmental documents were released for public review in June 2011 and are expected to be finalized in 2015.

Pursuant to the FKC Feasibility Report, Reclamation will implement the Project through two phases. Phase one will include completing the environmental planning, documentation, permitting, and all of the engineering design for the FKC Capacity Restoration Project. Phase 2 will be the construction of multiple improvements, which will be determined in the FKC Feasibility Report and further refined in Phase 1.

Deliverables

- Project management plan and project schedule
- Draft and Final EA and related notices
- Finding of No Significant Impact
- Support permitting, including:
  - ESA Section 7 compliance
  - Clean Water Act Section 401 and 404 compliance
  - Clean Air Act and California Clean Air Act conformity
  - National Historic Preservation Act, Section 106 compliance
  - County encroachment permits
  - Other permits as required
- Draft and Final Feasibility Report
- 30%, 60%, 90%, and bid ready designs
- Value Engineering Review
- Award Co-Operative Agreement/Construction Bid Package
- Construction
- Project closeout

Activities Completed in FY 14

- Completed 60% design

Expected FY 15 Activities

- Compete final Feasibility Report
- Complete Biological Assessment and National Historic Preservation Act Section 106 compliance, and NEPA compliance
- Complete designs/specifications
- Award design Cooperative Agreement
- Complete conservation measures, as applicable
- Award and start construction for such design-affected crossings as bridges, pipe crossings, utilities, over-chutes and block houses

Projected FY 16 Activities

Continue conservation measures, award construction Cooperative Agreement and start construction.

Projected FY 17 Activities

Continue construction actions.

3.5.4 Madera Canal Capacity Restoration

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Erika Kegel	2010	FY 19

Table 3-38 Madera Canal Capacity Restoration Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$350,000	$150,000	$200,000
Contracts		$800,000	
Total	**$350,000**	**$950,000**	**$200,000**

Authority

Section 10201(a)(1) of the Settlement Act

Description

The purpose of the Madera Canal Capacity Restoration Project is to reduce or avoid the adverse water supply impacts to Chowchilla Water District and Madera Irrigation District that may result from implementation of Restoration Flows. Reclamation is working with the Madera Chowchilla Water and Power Authority to evaluate restoring the Madera Canal to the flow rates provided in Reclamation's Contract No. 6-FC-20-03680 (1985), along with other actions that could reduce or avoid adverse water supply impacts to these districts. In order to accomplish this, Reclamation is working to complete a Feasibility Study, as well as design a low-flow bypass valve at the Madera Canal headworks.

The purpose of the Feasibility Study is to provide recommendations for best reducing or avoiding the adverse water supply impacts to the Chowchilla Water District and Madera Irrigation District that may result from implementation of the Restoration Flows. The Feasibility Study was initiated in FY 14 and will be completed in FY 16.

The purpose of adding a low-flow valve to the existing headworks of the Madera Canal is to increase flexibility to operate at flows from 50 to 150 cfs.

Deliverables

- Contract Award
- Administrative Draft Feasibility Study
- Draft Feasibility Study
- Final Feasibility Study
- Closeout

Activities Completed in FY 14

Awarded contract and initiated feasibility study process.

Expected FY 15 Activities

- Alternatives Technical Memorandum
- Perform site investigation work and low-flow valve design
- Draft Feasibility Study

Projected FY 16 Activities

- Final Feasibility Study
- Complete low-flow valve design and award construction contract

Projected FY 17 Activities

- Implement capacity restoration consistent with feasibility study
- Complete low-flow valve construction

3.5.5 Reverse Flow Facilities

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Erika Kegel	2010	Feasibility Study in FY 19; Construction not scheduled

Table 3-39 Reverse Flow Facilities Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$0	$0	$20,000
Contracts	$0	$0	$980,000
Total	**$0**	**$0**	**$1,000,000**

Authority

Section 10201(a)(2) of the Settlement Act

Description

The purpose of the Reverse Flow Facilities Project is to reduce or avoid the adverse water supply impacts that may result from implementation of the Restoration Flows by providing pump-back capability to the Friant-Kern Canal. The Feasibility Study will be initiated in FY 17, to be completed concurrent to the Reach 4B Report to Congress required in Section 10009(f)(2) of the Settlement Act.

Deliverables

- Contract Award
- Administrative Draft Feasibility Study

- Draft Feasibility Study
- Final Feasibility Study
- Closeout

Activities Completed in FY 14

Acquired and transported 10 pumps from the Temporary Red Bluff Pumping Plant to FWA's maintenance yard.

Expected FY 15 and FY 16 Activities

None, this project will be on hold until FY 17.

Projected FY 17 Activities

Award a contract for completion of the Feasibility Study.

3.5.6 Part III – Financial Assistance

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Adam Nickels	2010	FY 25

Table 3-40 Part III – Financial Assistance Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$50,000	$10,000
Total	**$50,000**	**$50,000**	**$10,000**

Authority

Section 10202of the Settlement Act

Description

Reclamation is authorized to provide $50,000,000 in financial assistance to local agencies within the Central Valley Project for planning, design, environmental compliance, and construction of facilities to reduce, avoid, or offset the quantity of expected water supply impacts to Friant Division long-term contractors caused by Interim and Restoration Flows.

Deliverables

- Guidelines for financial assistance
- Funding Opportunity Announcements for financial assistance
- Financial assistance agreements with local agencies, and
- Environmental compliance for groundwater projects
- Completed projects

Activities Completed in FY 14

Initiation of site-specific project planning and environmental compliance efforts.

Expected FY 15, FY 16, and FY 17 Activities

Reclamation will work with local agencies to complete NEPA and other environmental compliance activities, as applicable. Reclamation will continue to conduct post-award monitoring and administration for agreements reached in 2013.

3.6 Miscellaneous and/or Opportunistic Actions

3.6.1 Pit 46(e) Project

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Becky Victorine	2015	2017

Table 3-41 Pit 46(e) Project Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$50,000	$0	$0
Financial Assistance Agreement	$2,000,000	$0	$0
Total	**$2,050,000**	**$0**	**$0**

Authority

Paragraph 11(b)(3) of the Settlement

Description

Gravel Pit 46(e) is a project being pursued by the San Joaquin River Conservancy and DWR, to provide access between recreation sites, install an equalization saddle (a porous section of a berm) and create 1 to 2 acres of floodplain habitat. The SJRRP is providing funding for the equalization saddle portion of the project to ensure that the gravel pit is isolated from the river.

Deliverables

- Environmental compliance documentation
- Permits
- Completion of construction of the equalization saddle and habitat

Activities Completed in FY 14

None, this project was initiated in FY 15.

Expected FY 15 Activities

Environmental compliance, Federal permitting and awarding a Cooperative Agreement.

Projected FY 16 and FY 17 Activities

Complete construction actions.

3.6.2 Gravelly Ford Weir

Lead	***Start Date***	***Expected Completion Date***
Reclamation, Katrina Harrison	2015	2018

Table 3-42 Gravelly Ford Weir Project Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$20,000	$0	$0
Construction Contract	$0	$2,000,000	$0
Total	**$20,000**	**$2,000,000**	**$0**

Authority

Flow monitoring under Paragraph 13 of the Settlement

Description

Gravelly Ford is a challenging flow gaging location due to the constantly shifting substrate. This project would evaluate and potentially construct a structure in the channel to decrease the sand transport through the Gravelly Ford gaging station cross-section reducing the shifts in the Gravelly Ford rating curve and increasing the ability to meet Gravelly Ford flow targets. Construction costs are unknown at this time and the project may not be constructed depending on competing needs for miscellaneous funding.

Deliverables

- NEPA and permitting
- Design package
- Gravelly Ford weir / structure

Activities Completed in FY 14

Brainstorming of potential solutions

Expected FY 15 Activities

NEPA, permitting, design package

Projected FY 16 and FY 17 Activities

Construction

3.6.3 Juvenile Trap and Collection Facility

Lead	*Start Date*	*Expected Completion Date*
Reclamation, Katrina Harrison	2015	2018

Table 3-43 Juvenile Trap and Collection Facility Project Cost Estimate for FY 15 to FY 17

	FY 15 Estimate	FY16 Estimate	FY 17 Estimate
Reclamation Staff and Expenses	$10,000	$20,000	$0
Construction Contract	$0	$0	$2,000,000
Total	**$10,000**	**$20,000**	**$2,000,000**
Note: USFWS is leading the efforts to prepare an Addendum to the Juvenile Trap and Transport Technical Memorandum. These costs are included in USFWS costs in Section 3.2.2.			

Authority

Paragraph 14 of the Settlement and Section 10011 of Public Law 111-11

Description

Juvenile fish may need collection and transport downstream in rare cases such as construction windows in the river or Critical-Low water year types. This project will evaluate whether construction of a permanent in-river facility to collect juvenile fish for truck and hauling downstream will be necessary for success of the Restoration Goal.

Deliverables

- Addendum to Juvenile Trap and Transport Technical Memorandum

If it is determined that this project will move forward, then the following deliverables will be prepared:

- Environmental compliance documentation
- Design package
- Juvenile fish trap and collection facility

Activities Completed in FY 14

Brainstorming of potential solutions

Expected FY 15 Activities

- Continued brainstorming of potential solutions
- Addendum to Juvenile Trap and Transport Technical Memorandum
- If it is determined that this project will move forward, then Preliminary Design

Projected FY 16 and FY 17 Activities

If it is determined that this project will move forward, then:

- Design Package
- Environmental Compliance
- Construction

4.0 References

San Joaquin River Restoration Program. 2012. Third Party Working Draft Framework for Implementation.