SAN JOAQUIN RIVER
RESTORATION PROGRAM

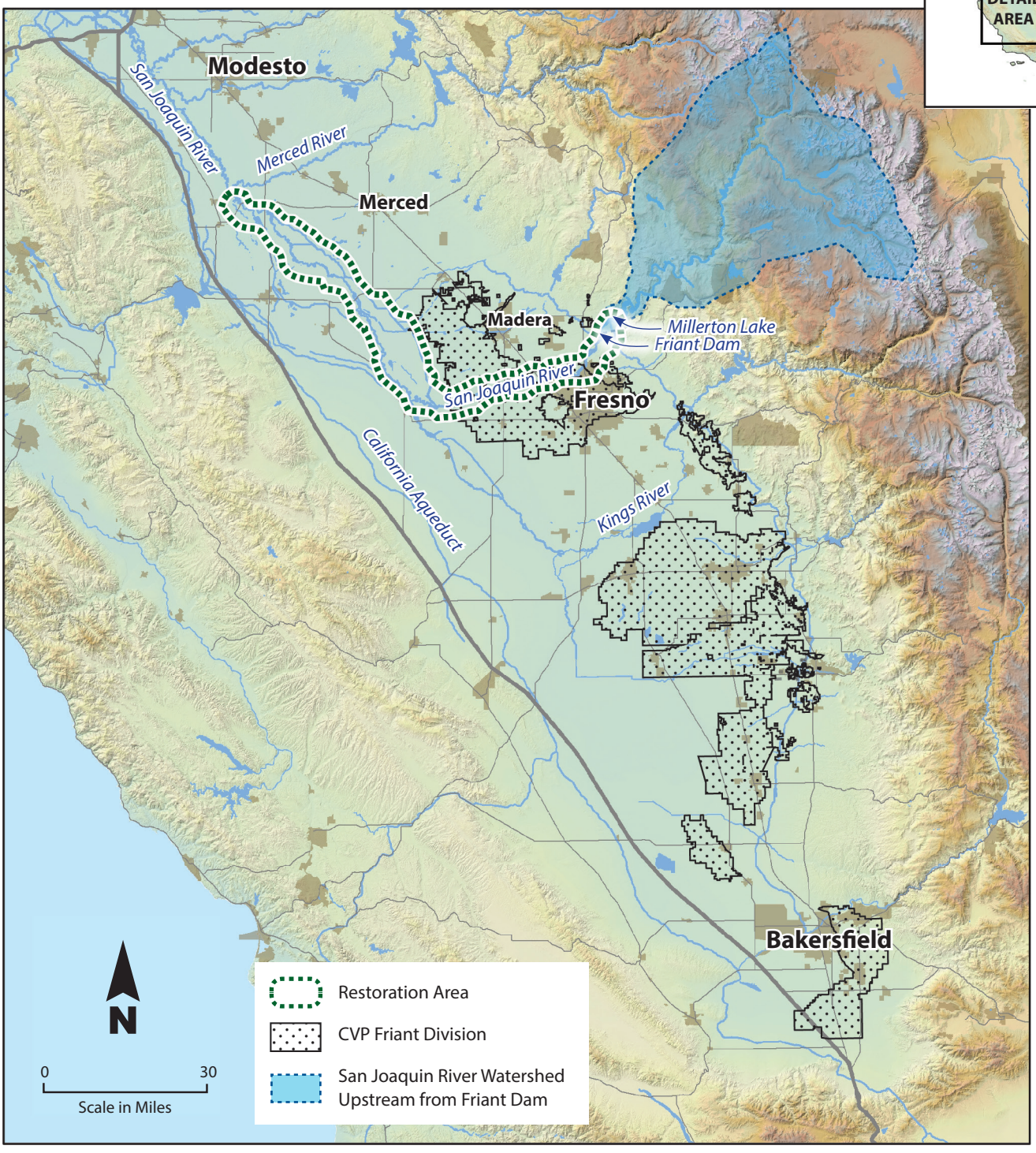
10 YEAR ANNIVERSARY

CELEBRATING 10 YEARS
2006–2016

ANNUAL REPORT 2015–2016

The San Joaquin River Restoration Program is a comprehensive, long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence with the Merced River, restoring a self-sustaining Chinook salmon population in the river while reducing or avoiding adverse water supply impacts from Restoration Flows.

SAN JOAQUIN RIVER RESTORATION AREA



Cover Photo: A view from the top of Friant Dam looking out over the upper reach of the San Joaquin River.

FROM THE SJRRP PROGRAM MANAGER

I am excited to share with you the amazing progress of the San Joaquin River Restoration Program (SJRRP or Program) over the last two years. The drought and zero Restoration Flows were huge challenges for everyone along the river. However, we were able to make progress towards reintroducing spring- and fall-run Chinook salmon into the San Joaquin River and preparing for important construction projects that will advance the Restoration and Water Management Goals. I am particularly proud of the work to improve groundwater storage, plan for new infrastructure along the river, and manage flows to meet both of these goals.

Project by project we are moving closer to constructing the Program actions needed to implement the Stipulation of Settlement in *Natural Resources Defense Council, et al., v. Kirk Rodgers; et al.*; the San Joaquin River Restoration Settlement Act; and the Friant Division Improvements included with the Federal authorization of the San Joaquin River Restoration Settlement Act. Some recent highlights include:

- Full connection of flows of up to 300 cubic feet per second for the first time in August 2016. To address third-party impacts of these flows, the Program has addressed 25% of the total area expected to be impacted by seepage and installed more than 200 groundwater seepage monitoring wells.
- Continued demonstration of adult salmon successfully spawning in the upper reaches of the San Joaquin River.
- Completion of the Draft and Final Environmental Impact Statement/Environmental Impact Report for the Mendota Pool Bypass and Reach 2B Improvements Project. This report was a major hurdle in the effort to construct improvements needed to provide flow connectivity and fish passage from Friant Dam to the confluence with the Merced River.
- Construction of two groundwater recharge and banking projects in the Tulare Irrigation District and the Shafter-Wasco Irrigation District. These and other planned projects will help stabilize water supplies and make up for water supply impacts attributed to Restoration Flows.
- Convening of the first Program Science Meetings to share research and results among scientists and stakeholders.

In 2015, the Program team worked with stakeholders to complete the Revised Framework for Implementation of the Program. The Revised Framework prioritizes activities necessary to plan, permit, design, and construct major physical elements of the Program, grouping these elements into five-year increments with a focused "vision" for each increment. As we move from planning to construction, I'm looking forward to seeing these upgrades to the water management infrastructure and newly established connectivity throughout the river. I invite you to follow our progress at ***www.restoresjr.net***.

I'm very proud of the work we do and hope you are too. On behalf of the Implementing Agencies and Program staff, I want to thank you—our stakeholders, elected leaders, and interested public—for your committed time, energy, and resources to making this Program a success.

Sincerely,

Alicia Forsythe, Program Manager
Bureau of Reclamation
(U.S. Department of the Interior)

TABLE OF CONTENTS

Bureau of Reclamation
(U.S. Department of the Interior)
ALICIA FORSYTHE

U.S. Fish & Wildlife Service
(U.S. Department of the Interior)
DONALD RATCLIFF

National Marine Fisheries Service
(U.S. Department of Commerce)
ERIN STRANGE

California Dept. of Water Resources
(California Natural Resources Agency)
PAUL ROMERO

California Dept. of Fish & Wildlife
(California Natural Resources Agency)
GERALD HATLER

SECTION 1: 2015-2016 MAJOR ACCOMPLISHMENTS

The San Joaquin River Restoration Program (SJRRP or Program) accomplished numerous major milestones in 2015 and 2016. The Program's major accomplishments are highlighted in this section.

Revised Framework for Implementation

Keeping the Program on track for completion is essential. In 2012, realizing that the Program needed a revised schedule, the Bureau of Reclamation (Reclamation) developed the Working Draft Framework for Implementation (June 2012) to identify core Program projects and implementation strategies to achieve Program goals. Continuing the effort in 2014, the Program worked closely with representatives from the Friant Districts, the Natural Resources Defense Council (NRDC), and the downstream landowners and water districts to prioritize the Program's core projects based on reduced levels of available State of California (State) and Federal funding. The effort paid off: in July 2015, the Revised Framework for Implementation (Framework) was released, focusing on activities necessary to plan, permit, design, and construct major physical project elements of the SJRRP.

The Framework serves as the backbone for the Program by prioritizing SJRRP activities to ensure the most efficient use of Program resources by grouping projects and activities into 5-year visions. This prioritization allows the Program to focus on actions that can realistically be achieved within a 5-year span and that are formulated to make clear, realistic, and accomplishable steps toward meeting the Restoration Goal and Water Management Goal in the Stipulation of Settlement in *Natural Resources Defense Council, et al., v. Kirk Rodgers, et al.* (Settlement). As a "living" document, Framework actions and associated budgets can be honed and fine-tuned as the Program moves forward to maintain realistic goals and timelines while meeting compliance with the Settlement and San Joaquin River Restoration Settlement Act (Settlement Act).

Reconnecting a River

Reclamation and the SJRRP manage releases and flows in the San Joaquin River, including the Restoration Flows specified in the Settlement and the Settlement Act. Due to the ongoing extreme drought conditions, no water was allocated to the SJRRP and no Restoration Flows were available in 2015 (as occurred in 2014). However, 2016 brought a wetter year thanks to the highest snowpack in the basin since 2013. As a result, Restoration Flows were started on February 15, 2016. A wetter year combined with the completion of seepage and flowage work in the Eastside Bypass allowed Restoration Flows to connect the river from Friant Dam all the way to the confluence with the Merced River—the second time the Program has accomplished this. However, this instance is unique, as the Program expects to have flows connected from Friant Dam to the confluence with the Merced River in perpetuity (barring exceptionally dry year conditions).

Other 2015-2016 flow-related activities included:

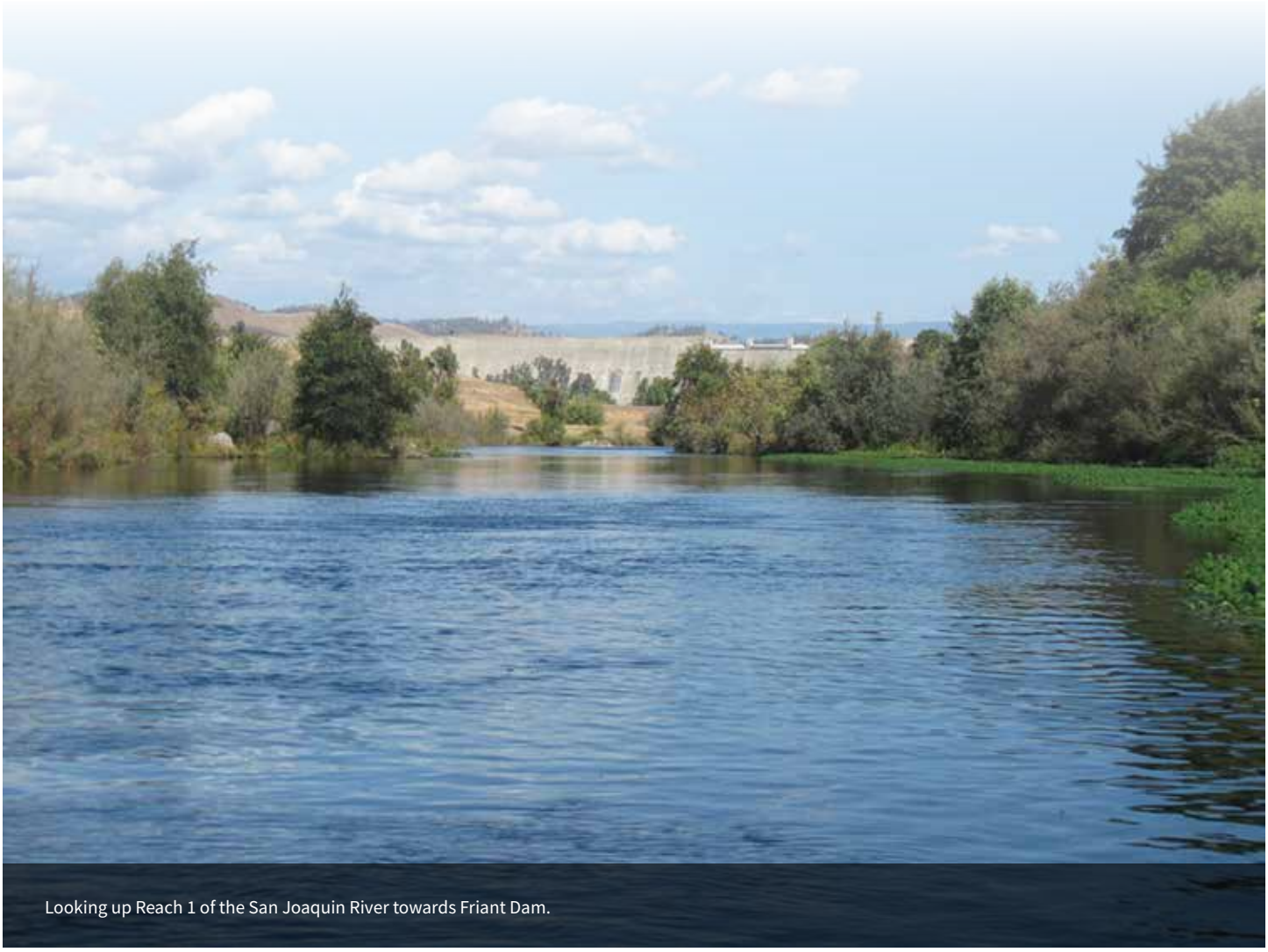
- The Environmental Assessment was completed and a Finding of No Significant Impact was signed in February 2016 for the Eastside Bypass Conveyance Project to restore flow capacity to the channel within the Eastside Bypass, allowing for the passage of Restoration Flows and reintroduced salmon. This project was the first construction project to be completed for the Program in the Eastside Bypass near the town of El Nido. More than 52,000 cubic yards of accumulated sediment were removed to help restore flow within the bypass. The project also included construction of a low-flow channel and removed an inoperable culvert and a low-flow river crossing that were contributing to upstream backwatering of the river and bypass.
- Full Restoration Flows in the San Joaquin River are currently hampered due to the limited capacity of the existing levee system in the Restoration Area. In 2015, geotechnical evaluations were conducted on levees in Reach 2A, the Middle Eastside Bypass, and Reach 4A. The results of the investigation concluded that all levees in these critical

reaches could convey at least 2,500 cubic feet per second (cfs) of Restoration Flows without exceeding U.S. Army Corps of Engineers criteria for levee seepage and slope stability, except for one levee segment along the Middle Eastside Bypass. The investigation data will allow the Program to conduct levee stability projects for the deficient levees in the Middle Eastside Bypass.

- To help manage flows and protect landowners from potential adverse seepage impacts as a result of Restoration Flows, through 2016, Reclamation completed permanent seepage projects on nearly 25% of possibly affected agricultural lands in the Restoration Area. These projects allow for the release of up to approximately 300 cfs of Restoration Flows past Sack Dam. Also in 2016, the Program issued a draft Environmental Assessment for a Seepage Management Plan to guide seepage management actions through 2020. Under the proposed plan, which was guided by landowner input, potential seepage impacts will be mitigated to enable Restoration Flows of up to 1,300 cfs. Mitigation options include the purchase of land easements (allowing for elevated groundwater tables beneath adjacent agricultural fields as a result of Restoration Flows), the purchase of land affected by groundwater seepage from willing sellers, or physical seepage projects on individual parcels (requires additional environmental review).

Groundwater Banking and Recharge

As California continued in a drought cycle during 2015–2016, and surface water supplies declined, dependence on groundwater in the San Joaquin Valley (Valley) increased. As a result, the Program worked diligently to establish groundwater recharge projects, combat subsidence for Valley water users, and contribute to the Water Management Goal.



Looking up Reach 1 of the San Joaquin River towards Friant Dam.

The Part III Groundwater Banking/Recharge projects (Part III projects), funded by the Program in Fiscal Year (FY) 2013, provided over $15 million to date in funding to water districts for enhancing groundwater recharge. The Part III projects will capture water that would otherwise go downstream in wet years and store it underground for future extraction during dry years. The Part III projects are designed to help offset water supply impacts to Friant Division's long-term contractors resulting from the release of Restoration Flows as outlined in the Settlement and the Settlement Act. The Part III projects have benefits for drought relief and alleviate the potential for subsidence.

Construction of the Tulare Irrigation District Cordeniz Basin Project began in November 2015 and was the first of the Part III projects to move forward. This project, a $3.8 million cost-shared effort ($1.95 million provided by the Program), includes the expansion of a 20-acre groundwater recharge basin to 80 acres, installation of Supervisory Control and Data Acquisition (SCADA) equipment, relocation of a segment of the Serpa Ditch, and the construction of five groundwater monitoring wells.

Construction also began in 2016 on a groundwater banking and extraction project to increase water supply protection and flexibility for Shafter-Wasco Irrigation District. The Program provided $5 million (of $12.1 million total) towards the Kimberlina Road Groundwater Recharge and Banking Project to allow the Shafter-Wasco Irrigation District to store water delivered from the Friant-Kern and Colloway Canals. Three new wells will allow the banked groundwater to be extracted during times of need.

Other projects funded under Part III include the South Valley Water Bank Authority Pixley Groundwater Banking Project ($7.5 million of a $17.4 million total), which will develop a 575-acre spreading basin for groundwater recharge, a new turnout from the Friant-Kern Canal, 16 recovery wells, pumping plants, electrical controls and facilities, and 4.5 miles of pipeline for the delivery and recovery of water. The Porterville Irrigation District In-Lieu Groundwater Project ($1.2 million of $2.8 million total) will provide new infrastructure that will deliver surface water to nearly 2,500 acres of farmland through more than 15,000 feet of new laterals.

Final environmental documents were released in December 2016 to allow for a 10-year transfer and exchange of recaptured San Joaquin River Restoration Flows to Red Top, an area that has been substantially affected by subsidence due to excessive deep aquifer groundwater pumping. Construction of a turnout and pipeline took place in December 2016 to connect Central California Irrigation District's Poso Canal to plumbing and conveyance facilities in Red Top, allowing for the transfer or exchange of up to 10,000 acre-feet annually.

Re-Establishing Salmon

In 2015, there were no Restoration Flows for a second year in a row due to low water in the system as a result of the continuing state-wide drought. Despite this challenge, fish restoration efforts continued. Fortunately, 2016 brought some relief to the parched watershed and in 2016, the Program was able to begin Restoration Flows on the system again.

Re-establishing fish populations is a key component of the Program. The Program released hatchery-produced juvenile spring-run Chinook salmon for only the second and third time in the river's history in February 2015 (54,839) and March 2016 (104,880). However, with the extirpation of San Joaquin River salmon since the 1950s, a pivotal component of re-establishing these populations is to develop a genetic broodstock unique to the San Joaquin River. As part of the SJRRP's Captive Broodstock Program—a milestone for the Program—the first spawning of the adult spring-run Chinook salmon took place in 2015 from late September through early October at the Interim Conservation Facility in Friant, California. The California Department of Fish and Wildlife (CDFW) crossed 43 female adult Chinook salmon with a minimum of four of the least-related males (as determined by genetic data). Each female was spawned to produce an average of 2,000 eggs, the total outcome of which was approximately 90,000 eggs. As a result of this successful breeding, 45,000 broodstock juveniles were part of the March 2016 release.

The years 2015 and 2016 saw the increased success of the Program's Trap and Haul operation. Due to barriers within the river that limit the migration of fish species between the upper reaches and the ocean, Program staff are able to capture

adult fall-run Chinook salmon from near the Hills Ferry Barrier (near the confluence of the Merced and San Joaquin Rivers) and other locations around the river. Captured fish were then transported to the upper reaches of the river below Friant Dam, where they were tagged with acoustic transmitters and released into the river to study holding and spawning patterns. In 2015, more fish were captured and transported than in any of the previous three years, and although numbers dropped somewhat in 2016, they remained high, with 676 adult salmon captured and released.

Planning for several construction projects to benefit Chinook salmon and other native fish was undertaken in 2015 and 2016. In October 2015, draft environmental documents were released for the Sycamore Island Pond Isolation Project. This project will repair a breached earthen berm that previously separated the pond from the main river channel to improve salmon habitat and reduce predation. Final environmental documents for the project were released in February 2016. Reclamation released a Draft Environmental Assessment in January 2016, followed by a Final Environmental Assessment and Finding of No Significant Impact in March 2016 for the water supply line for the Salmon Conservation and Research Facility (SCARF) located below Friant Dam. A new water supply line is needed to increase the available water capacity for the SCARF from 35 cfs to 55 cfs. Completion of the environmental documents allowed progress on the project to keep moving toward construction in 2017, which was important to keep in alignment with the CDFW construction of the new, larger facility for 2017.

Mendota Pool Bypass and Reach 2B Improvements EIS/R

A noteworthy Program milestone was the completion of the *Mendota Pool Bypass and Reach 2B Improvements Project Draft Environmental Impact Statement / Environmental Impact Report* (EIS/R) in 2015, the Final EIS/R in 2016, and the Record of Decision also in 2016. The Mendota Pool Bypass and Reach 2B Improvements Project is a Phase 1 improvement identified in the Settlement. The project includes the construction, operation, and maintenance of the Mendota Pool Bypass, which provides fish passage around Mendota Pool, levee setbacks in Reach 2B to increase channel capacity to at least 4,500 cfs while providing flood plain and riparian habitat, and structures to allow for diversion of up to 2,500 cfs from Reach 2B into the Mendota Pool in the event that Reclamation needs to make deliveries under the Exchange Contract via the San Joaquin River.

In 2015, the Draft EIS/R for the project was released with a Preferred Alternative, which was developed through a consensus-based alternative process with Program stakeholders and affected landowners. A Final EIS/R was published on July 8, 2016, with a Record of Decision signed on October 31, 2016. The Preferred Alternative balances the needs of the Chinook salmon fishery with local farming concerns—to meet fishery rearing habitat goals by expanding levee alignments and allowing agricultural production on the floodplain. The approach accommodates flexibility of floodplain management while minimizing the amount of agricultural land taken out of production.

The Preferred Alternative will construct a channel between Reach 2B and Reach 3 to bypass the Mendota Pool. Restoration Flows would enter Reach 2B at the Chowchilla Bifurcation Structure, flow through Reach 2B, then flow downstream to Reach 3 via the new bypass channel. The existing Chowchilla Bifurcation Structure would continue to divert San Joaquin River flows into the Chowchilla Bypass during flood operations, and a fish passage facility and control structure modifications would be included to support fish passage during normal operations. A bifurcation structure would be built at the head of the Compact Bypass channel to control diversions into Mendota Pool. Fish passage facilities would also be built at the Compact Bypass Bifurcation Structure to provide passage around the structure.

SECTION 2: FRAMEWORK FOR IMPLEMENTATION

Section 2 provides a description of the Framework.

THE SETTLEMENT

In 1988, a coalition of environmental groups, led by the Natural Resources Defense Council (NRDC), filed a lawsuit 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, a Settlement was reached on September 13, 2006, that was subsequently approved by the court on October 23, 2006. The "Settling Parties" included the NRDC, the Friant Contractors, the Friant Water Users Authority (now the Friant Water Authority [FWA]), the Department of the Interior, and the Department of Commerce.

The Settlement's two goals are:

- **Restoration Goal:** 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 Goal:** 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.

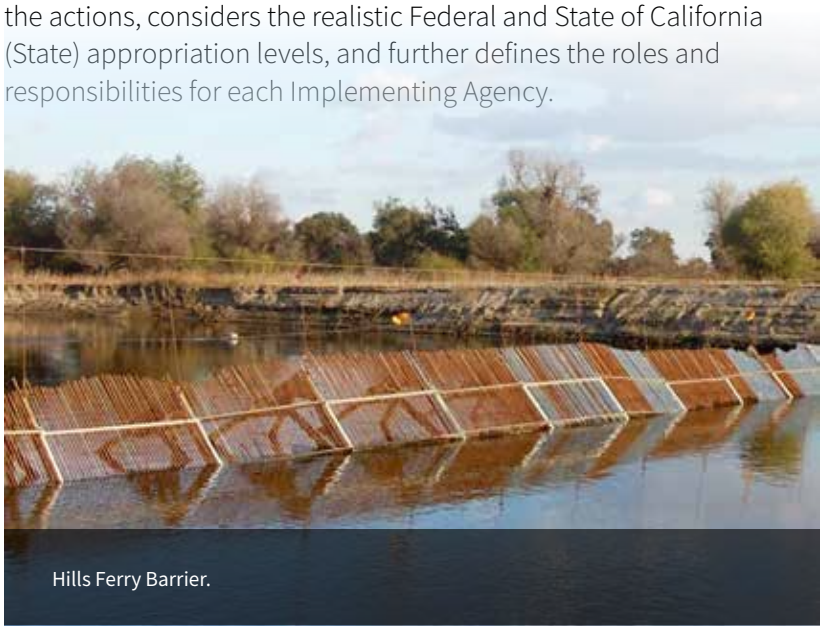
The Federal San Joaquin River Restoration Settlement Act, signed in March 2009, authorizes and directs the Secretary of the Interior to implement the Settlement. The SJRRP was established to do that, and the Implementing Agencies responsible for its management include Reclamation, USFWS, NMFS, DWR, and CDFW (see the program management structure chart on page 34).

PURPOSE AND OVERVIEW

In 2015, the San Joaquin River Restoration Program (SJRRP or Program) Management Team completed the Revised Framework for Implementation (Revised Framework). The Revised Framework establishes a realistic schedule for implementing the Program based on the best available technical, biological, schedule, and funding information. The Revised Framework reflects updates and revisions since the June 2012 Third Party Working Draft Framework for Implementation (2012 Framework).

The Revised Framework provides a more realistic schedule and the associated future funding needs for the Program actions to meet the goals of the Settlement and the requirements of the San Joaquin River Restoration Settlement Act (Settlement Act)[1] and to complete the Friant Division Improvements included with the Federal authorization of the Settlement Act.[2]

The Revised Framework is primarily focused on the activities necessary to plan, permit, design, and construct the major physical project elements of the SJRRP. The Revised Framework describes the actions to achieve the goals and requirements in five categories: flow actions; channel and structural improvements; fish establishment; water management and Friant Division Improvements; and miscellaneous and opportunistic actions. The Revised Framework describes the schedule for completing the actions, considers the realistic Federal and State of California (State) appropriation levels, and further defines the roles and responsibilities for each Implementing Agency.



Hills Ferry Barrier.

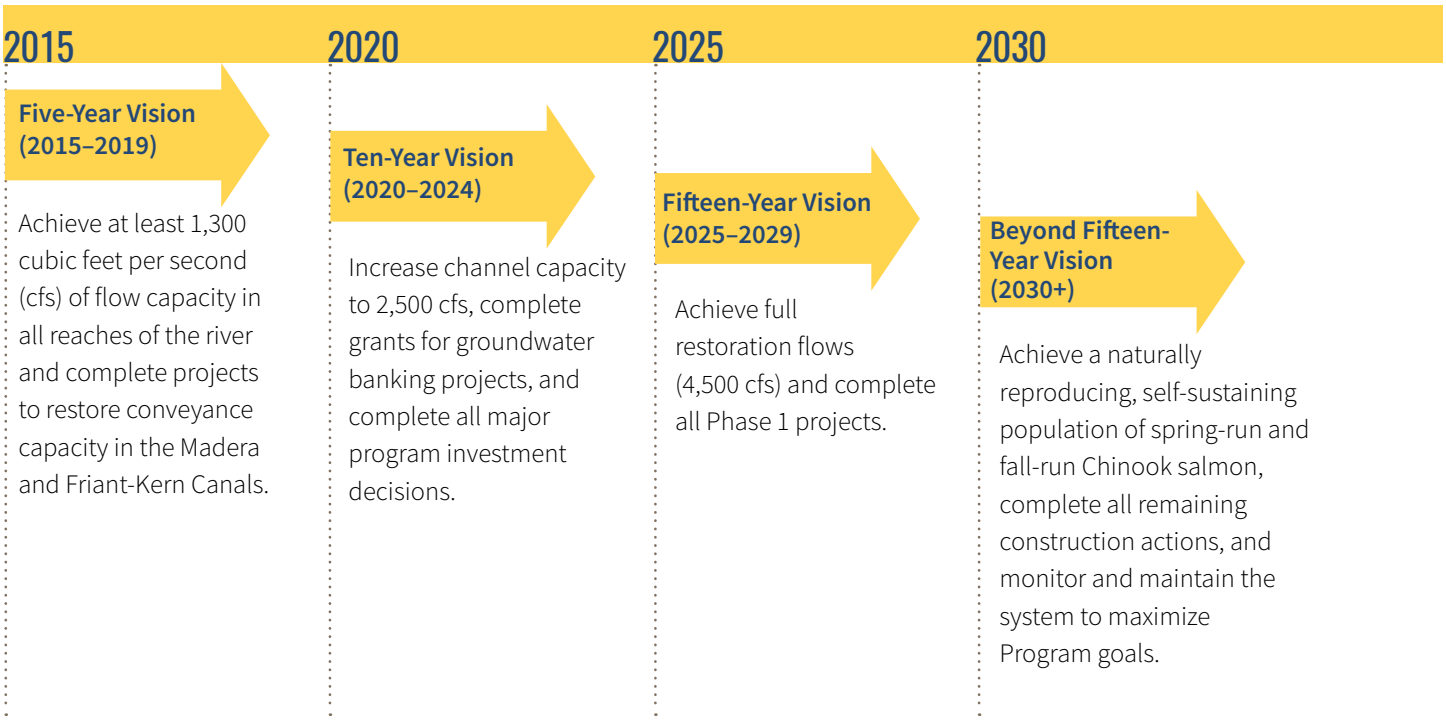
[1] Title X, Subtitle A, Part I of Public Law 111-11
[2] Title X, Subtitle A, Part III of Public Law 111-11

PROGRAM IMPLEMENTATION APPROACH

With the Revised Framework, the Program Management Team has prioritized actions and resources to ensure efficient and expeditious construction. Projects and activities have been prioritized into five-year increments, with a focused "vision" for each five-year increment. Each five-year vision is formulated to make incremental and measurable progress toward achieving the goals of the Settlement, while at the same time limiting and focusing actions to what can realistically be achieved within the five-year span, based on the best information currently available.

The Revised Framework represents a path forward in compliance with the Settlement and Settlement Act and should be considered a living document—additional updates will be made as new information is gathered and milestones are reached. The five-year visions allow for annual flexibility in funding and resource allocation, while ensuring that all planned activities are completed to achieve incremental progress toward the Settlement goals and other requirements. The ultimate implementation of the SJRRP will be shaped by decisions made through planning processes that are part of the Program, such as the Fisheries Management Plan, environmental processes, permit requirements, and adaptive management.

The Revised Framework establishes the following five-year visions:



KEY ELEMENTS OF THE FIVE-YEAR VISION

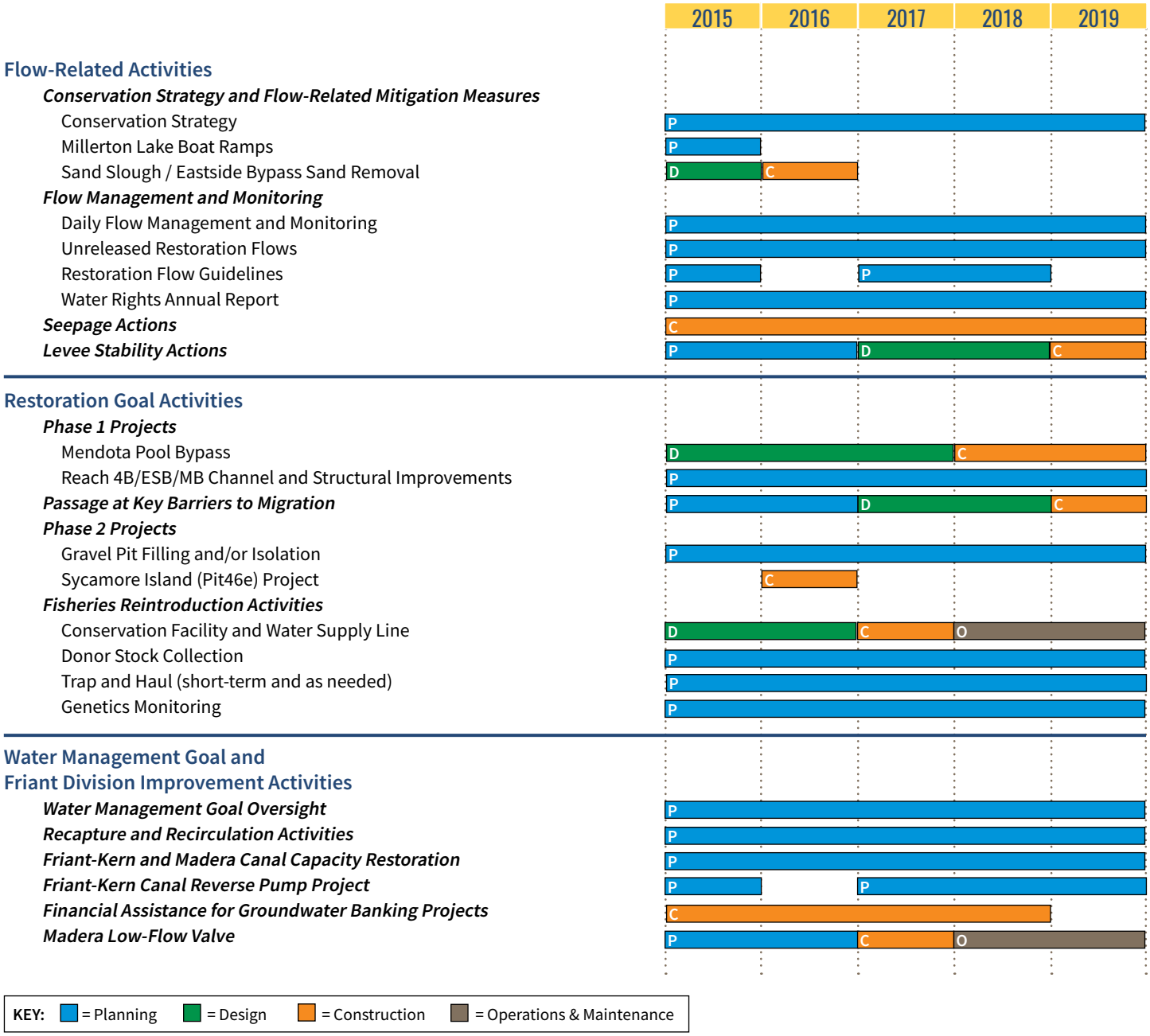
The Five-Year Vision (2015–2019) is designed to achieve at least 1,300 cfs flow capacity in all reaches of the San Joaquin River from Friant Dam to the confluence with the Merced River, while simultaneously completing improvements to increase the conveyance capacity of the Madera and Friant-Kern Canals. Specifically, the goals are:

1. Provide flow connectivity and fish passage over major migration barriers such that both adult and juvenile salmon can complete their migration routes without human assistance at the end of the five years.
    a. Complete seepage and levee stability projects to allow for flow up to the capacity of Reach 2B (at least 1,300 cfs).
    b. Complete components of the Mendota Pool Bypass or the Fresno Slough Dam.
    c. Provide passage, if determined to be necessary, for anadromous salmonids at key migration barriers.
2. Complete construction of the Friant-Kern Canal and Madera Canal Capacity Restoration Projects.
3. Continue to implement Water Management Goal actions and the Friant Division Improvements.
4. Continue fish establishment activities.
    a. Complete construction of the Salmon Conservation and Research Facility.
    b. Obtain permit for wild stock collection and begin collecting wild stock.

Reach 1 of the San Joaquin River looking upstream toward Friant Dam.

FIVE-YEAR VISION GOALS AND ACTIVITIES

Generalized schedule for achieving the goals by 2020



Specific actions that the Implementing Agencies are undertaking to achieve these goals include the following. Progress and activities to accomplish these actions are described in Section 3.

Flow-Related Activities

Flow Actions

- Implement the Conservation Strategy and flow-related mitigation measures and environmental commitments from the 2009 San Joaquin River Restoration Program Programmatic EIS/R Record of Decision.
- Implement flow management and monitoring.
- Complete seepage and levee stability activities to allow for flows up to the Reach 2B capacity (at least 1,300 cfs) in the river.

Restoration Goal Activities

Channel and Structural Improvements

- Construct key components of the Mendota Pool Bypass or the Fresno Slough Dam.
- Complete the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements EIS/R and associated Report to Congress.
- Complete final design and any additional permitting actions for the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project.
- Provide passage, if determined necessary, for anadromous salmonids at key migration barriers.

Fish Reintroduction

- Complete construction of the Salmon Conservation and Research Facility and water supply line.
- Continue to operate and maintain the Interim and permanent Conservation Facility.
- Complete annual spring-run donor stock collection and tagging, including the collection of wild stock.
- Complete annual trap and haul of adult Chinook salmon until Mendota Pool Bypass is completed.
- Continue salmon genetics monitoring.
- Implement spring-run and fall-run segregation actions, if determined necessary.
- Complete permit application and issue permit for the use of wild stock.

Water Management Activities

Water Management Goal and Friant Division Improvements

- Continue Water Management Goal support actions, including recapture and recirculation of Restoration Flows, tracking Recovered Water Account balances, and allocating RWA water.
- Complete Recapture and Recirculation Plan.
- Complete Recapture and Recirculation EIS/R.
- Complete construction of the Friant-Kern Canal and Madera Canal Capacity Restoration Projects.
- Continue managing Fiscal Year (FY) 2013 Part III awards for groundwater improvement projects.

Program Staffing and Administration

- Continue program management and administration actions for all agencies.

Activities Status Update

			SCHEDULE	SCOPE	BUDGET
Flow-Related Activities	Conservation Strategy & Flow-Related Mitigation Measures	Implement Conservation Strategy Actions for Flows	O	O	O
		Millerton Lake Boat Ramps	R	O	O
		Sand Slough/Eastside Bypass Sand Removal	O	O	O
	Flow Management & Monitoring	Daily Flow Management and Monitoring	O	O	R
		Unreleased Restoration Flows	O	O	O
		Restoration Flow Guidelines	O	O	O
		Water Rights Annual Report	O	O	O
	Seepage Actions		O	O	R
	Levee Stability Actions		O	O	O
Restoration Goal Activities	Phase 1 Projects	Mendota Pool Bypass	O	O	O
		Reach 4B/ESB/MB Channel and Structural Improvements	O	O	O
	Fish Passage at Key Barriers		O	R	R
	Phase 2 Projects	Gravel Pits Filling and/or Isolation	O	O	O
		Sycamore Island Pond Isolation (Pit46e) Project	O	C	C
	Fisheries Reintroduction Activities	Conservation Facility Construction (CDFW cost)			
		Conservation Facility Water Supply Line (Reclamation cost)	O	O	O
		Donor Stock Collection	O	O	O
		Trap and Haul (short-term and as needed)	O	O	O
		Genetics Monitoring	O	O	O
	Paragraph 12 Activities	To Be Determined			
Water Mgmt. Activities		Water Management Goal Oversight	O	O	O
		Agricultural Groundwater Recharge Study	R	O	O
		Recapture and Recirculation Plan and Implementation	O	O	O
		Friant-Kern Canal Capacity Restoration Project	D	D	D
		Madera Canal Capacity Restoration Project	O	O	O
		Madera Low-Flow Valve	O	O	O
		Reverse Flow Facilities	R	O	O
		Part III -Financial Assistance	O	O	O
		Tulare Irrigation District	O	O	O
		Pixley Irrigation District	R	O	O
		Porterville Irrigation District	R	O	O
		Shafter-Wasco Irrigation District	R	R	R

KEY: C Complete O On Track R At Risk D Delays/Issues No Dot = Not Active at This Time

RESTORATION ADMINISTRATOR AND TECHNICAL ADVISORY COMMITTEE

Restoration Administrator
Tom Johnson

Technical Advisory Committee

VOTING MEMBERS

Chuck Hanson –
Hanson Environmental

Mark Tompkins –
FlowWest

Peter Vorster –
The Bay Institute

Rene Henery –
Trout Unlimited

Scott McBain –
McBain Associates

Bill Luce -
Bill Luce Consulting,
representing
Friant Water Authority

AGENCY LIAISONS
Erica Meyers –
California Department of
FIsh & Wildlife (CDFW)
Paul Romero –
California Department of
Water Resources (DWR)
Erin Strange –
National Marine Fisheries
Service (NMFS)
Donald Ratcliff –
U.S. Fish & Wildlife Service
(USFWS)
Alicia Forsythe,
Donald Portz,
Elizabeth Vasquez –
U.S. Bureau of Reclamation
(Reclamation)

Section 3 describes progress for the following activities in 2015 and 2016:

- Flow Actions
- Channel and Structural Improvements
- Fish Reintroduction
- Water Management
- Monitoring and Analysis

FLOW ACTIONS

The Program transitioned from Interim Flows to Restoration Flows in January 2014. Restoration Flows are specific volumes of water to be released from Friant Dam under the Settlement. Restoration Flows allow the Implementing Agencies to support initial fish introduction actions and collect relevant data concerning flows, temperatures, fish needs, and seepage losses. Recapture, recirculation, and reuse of Restoration Flows are addressed in the Water Management section starting on page 20.

Flow Management and Monitoring

Each year, Reclamation and the SJRRP monitor and manage releases and flows in the San Joaquin River, including the Restoration Flows specified in the Settlement and Settlement Act. The Settlement specifies six different Restoration Year types based on hydrologic conditions. Each water year type determines the amount of Restoration Flows to be made available to the SJRRP. For 2015, the Restoration year was classified as Critical-Low due to drought conditions. Therefore, no water was allocated to the SJRRP, and no Restoration Flows were available. However, in 2016, due to a San Joaquin Watershed snowpack that was the highest since 2013, the year 2016 was declared to be a Normal-Dry water year, and Restoration Flows recommenced on February 15, 2016, after two years of zero allocation.

In June 2015, the Program submitted the first Water Rights Annual Report for Restoration Flows to the State Water Resources Control Board, as required by the final Water Rights order on the SJRRP. Earlier reports were submitted for Interim Flows in prior years. The Water Rights Order Compliance Report describes Reclamation's compliance with each condition of the 2013 water rights order.

As part of annual flow management actions, the SJRRP monitors and manages unexpected seepage losses, Unreleased Restoration Flows (URFs), Restoration Flow guidelines, and flow and seepage data.

Unreleased Restoration Flows

Reclamation has developed a 10-year plan (water contract years 2016 to 2025) to sell and exchange URFs. URFs are generated when SJRRP Restoration Flows cannot be released into the San Joaquin River channel due to channel capacity constraints. Since its inception, the SJRRP has been addressing downstream constraints that limit Restoration Flows and the quantity of URFs generated over the next ten years is expected to decline

as channel capacity constraints are improved. However, these constraints are expected to persist at some level until 2030. Until the channel constraints in the San Joaquin River and other conditions are addressed to allow full release of Restoration Flows, URFs may be generated at Friant Dam on an annual basis. Per the Settlement, URFs will be used to best serve the Restoration Goal, including selling or exchanging the water, with priority given to Friant Division long-term contractors. The Program completed an Environmental Assessment for the first five years of the 10-year plan in March 2016.

The conveyance of URF exchange water in Firebaugh Wasteway was an action proposed to avoid river connectivity interruptions within the SJRRP Restoration Area while dam safety inspections and maintenance work was completed at Mendota Pool. Reclamation would implement URF exchanges to deliver URF water in exchange for water in San Luis Reservoir. The water would be conveyed from the San Luis Reservoir to the Delta-Mendota Canal, to the wasteway, and then into the San Joaquin River. The Finding of No Significant Impact for this project was signed in November 2016 for implementation in December 2016 and January 2017.

RESTORATION ADMINISTRATOR AND TECHNICAL ADVISORY COMMITTEE

The Settlement specified the roles and responsibilities for a Restoration Administrator to provide timely input and recommendations on technical issues related to the Restoration Goal. The Restoration Administrator is supported by a Technical Advisory Committee.

Restoration Administrator – The Restoration Administrator (RA), selected jointly by the Friant Water Authority (FWA) and the Natural Resources Defense Council (NRDC), provides recommendations to the Secretary of the U.S. Department of the Interior (Secretary), in consultation with the Technical Advisory Committee, regarding specific elements of the Settlement and certain issues related to the SJRRP Restoration Goal.

Technical Advisory Committee – The Technical Advisory Committee (TAC) consists of six voting members selected by FWA and NRDC. The voting members of the TAC assist and advise the RA regarding areas outlined in the Settlement, have relevant technical or scientific background or expertise in fields related to river restoration or fishery restoration, and serve for three years. Two non-voting members representing the State agencies serve as liaisons to the RA and TAC. The Federal agencies have three liaisons to the TAC to ensure coordination and information-sharing with the Implementing Agencies.

Flow Recommendations in 2015 and 2016 – The release of water from Friant Dam for the SJRRP depends upon the amount of runoff. Using water supply forecasts for the Friant Division of the Central Valley Project, the SJRRP uses the estimated total unimpaired inflow below Friant Dam to determine an allocation. The RA makes recommendations on the timing of releases based on river conditions and the specific Restoration Goals and objectives at that time. Before an increase in flow rates, the SJRRP analyzes the likely effects on the river and surrounding lands and documents the results with a Flow Bench Evaluation. Following an affirmative evaluation, the SJRRP issues a notification and changes the releases.

In 2015, no water was allocated to the SJRRP and no Restoration Flows were available due to the drought; therefore the Restoration Administrator did not make flow recommendations in 2015. However, after more than two years of zero allocation, Restoration Flows were resumed in 2016. Runoff into Millerton Lake was approximately 1.3 million acre-feet, with 263,295 acre-feet of this yield allocated as Restoration Flows. The 2016 Restoration Flow recommendations were developed with consideration for two primary goals: (1) commencing year-round connectivity of the river from Friant Dam to the Merced River confluence; and (2) facilitating the testing of techniques for the trapping and transporting of juvenile salmon.

REACHES OF THE SAN JOAQUIN RIVER RESTORATION AREA

The Restoration Area starts at the Friant Dam and ends at the confluence of the San Joaquin River with the Merced River.

Reach 5: Eastside Bypass/Bear Creek Confluence to the Merced River Confluence

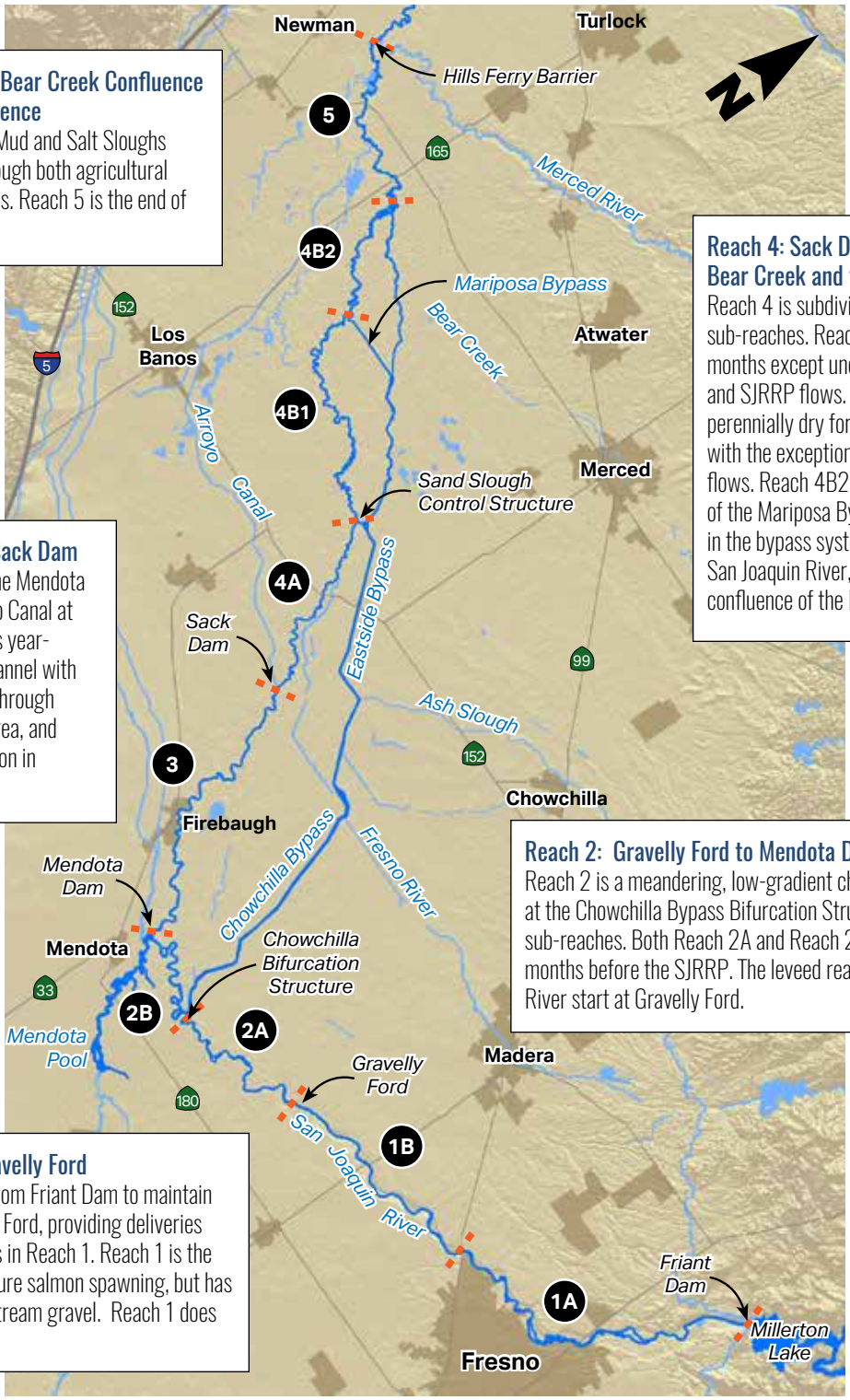
Reach 5 receives flows from Mud and Salt Sloughs and has channels that run through both agricultural and wildlife management areas. Reach 5 is the end of the study area.

Reach 4: Sack Dam to Confluence of Bear Creek and the Eastside Bypass

Reach 4 is subdivided into three distinct sub-reaches. Reach 4A is dry in most months except under flood conditions and SJRRP flows. Reach 4B1 has been perennially dry for more than 40 years, with the exception of agricultural return flows. Reach 4B2 begins at the confluence of the Mariposa Bypass, where flood flows in the bypass system rejoin the main stem San Joaquin River, and extends to the confluence of the Eastside Bypass.

Reach 3: Mendota Dam to Sack Dam

Reach 3 conveys flows from the Mendota Pool for diversion to the Arroyo Canal at Sack Dam; the reach maintains year-round flow in a meandering channel with a sandy bed. This reach flows through a predominantly agricultural area, and diversion structures are common in this reach.



Reach 2: Gravelly Ford to Mendota Dam

Reach 2 is a meandering, low-gradient channel, subdivided at the Chowchilla Bypass Bifurcation Structure (CBBS) into two sub-reaches. Both Reach 2A and Reach 2B were dry in most months before the SJRRP. The leveed reaches of the San Joaquin River start at Gravelly Ford.

Reach 1: Friant Dam to Gravelly Ford

Reclamation makes releases from Friant Dam to maintain continuous flows past Gravelly Ford, providing deliveries to riparian water rights holders in Reach 1. Reach 1 is the principal area identified for future salmon spawning, but has been extensively mined for instream gravel. Reach 1 does not have levees.

CONSERVATION STRATEGIES AND FLOW-RELATED MITIGATION MEASURES

Channel Capacity Advisory Group (CCAG)

Reclamation and DWR, in consultation with the CCAG, released the second and third annual Channel Capacity Reports in January 2015 and 2016, respectively. This annual report describes and updates estimates of "then-existing channel capacities" so that Restoration Flows are managed at or below current capacities. "Then-existing channel capacity" is the channel capacity that corresponds to flows that would not significantly increase flood risk from Restoration Flows in the Restoration Area. The report provides the CCAG and the public a summary of the prior Restoration Year data, methods, and estimated channel capacities and makes recommendations for monitoring and management actions for the following year. This information helps ensure that the release of Restoration Flows does not significantly increase flood risk in the Restoration Area.

2015-2016 Channel Capacity by River Reach

	Then-Existing Channel Capacity in Cubic Feet per Second (cfs)	
REACH	2015	2016
Reach 2A	1,630	6,000
Reach 2B	1,120	1,120
Reach 3	2,760	2,860
Reach 4A	970	2,840
Reach 4B1	Not Analyzed	Not Analyzed
Reach 4B2	930	930
Reach 5	1,940	2,350
Middle Eastside Bypass	370	580
Lower Eastside Bypass	2,890	2,890
Mariposa Bypass	350	350

NOTE: More detailed information regarding then-existing channel capacity for each reach is available in the annual Channel Capacity Report. See the Program website for the Channel Capacity Report: 2016 Restoration Year.

The 2015 report did not provide any updates to the 2014 report "then-existing channel capacities," but highlighted future studies and data gaps that would be key in informing future channel capacities. Some of these technical studies took place in 2015 and informed 2016 updates to Restoration Flow recommendations, including verification and monitoring of in-channel capacity, updated modeling to reflect subsidence, and continued implementation of the San Joaquin Levee Evaluation Project (includes geotechnical exploration and analysis). Similarly, the 2016 report continued to summarize and provide updates of the future actions, and the studies and monitoring that will affect future "then-existing channel capacities." The 2016 report also included improved information in Reach 2A, Reach 4A, and the Middle Eastside Bypass from levee geotechnical evaluations; the data resulted in recommended capacity increases in these reaches. The purpose of the CCAG is to provide independent review of estimated "then-existing channel capacities," monitoring results, and management actions to address vegetation and sediment transport within the systems as developed by Reclamation.

Conservation Strategy

The Conservation Strategy for flow actions includes Program commitments to address invasive species, conduct vegetation monitoring, and re-consult with fish and wildlife agencies on Restoration Flows. Reclamation entered into a financial assistance agreement with the San Joaquin River Parkway and Conservation Trust in 2015 to monitor vegetation and address invasive species along the river through mechanical removal and spraying (April to October). In the first year, the effort removed 5.73 acres of sesbania and 39 tallow trees. The agreement extends through 2020.

Other Flow-Related Mitigation Measures

The Program continues to implement other ongoing measures or measures needed for construction activities, including monitoring steelhead populations and physical conditions in the river, cultural resources consultation, traffic detour planning, and modifications to the Millerton Lake boat ramps, as needed.

Physical Monitoring and Management Plan Implementation

Seepage monitoring at 220 groundwater wells and flow monitoring through the Restoration Area are ongoing. Additional stream gauges were added in 2015. Additional monitoring includes topographic surveys to obtain information about the river stage, hydraulic roughness, river width, and bed elevation; vegetation surveys to obtain information about the establishment and recruitment of vegetation; and sediment mobilization monitoring to obtain information on suspended sediment, which can affect channel capacities and erosion monitoring and, in turn, levee stability. Ongoing monitoring helps guide implementation of the Settlement by observing and adjusting to changes in physical conditions within the Restoration Area, including those changes that could affect channel capacities.

Steelhead Monitoring

The data suggest that Central Valley steelhead were historically present within the SJRRP Restoration Area. As flows are restored, there is a potential for Central Valley steelhead to migrate upstream. Therefore, monitoring took place in Reach 4B and 5 to investigate whether steelhead were present or not; none were found in 2016.

Seepage and Levee Stability Projects for Restoration Flow Releases of up to 1,300 cfs

Seepage Management Program: The goal of the Seepage Management Program is to limit Restoration Flow releases based on groundwater seepage thresholds. These thresholds are based on local crop type or historical water levels and are designed to keep groundwater levels below levels that could cause harm to crops. In 2016, Reclamation completed permanent seepage projects on nearly 25% of possibly affected agricultural lands in the Restoration Area. These projects allow for the release of up to approximately 300 cfs of Restoration Flow past Sack Dam.

Also in 2016, the Program issued a draft Environmental Assessment for a Seepage Management Plan to guide seepage management actions through 2020. Under the proposed plan, which was guided by landowner input, potential seepage impacts will be mitigated to enable Restoration Flows of up to 1,300 cfs. Mitigation options include the purchase of land easements to allow for elevated groundwater tables beneath adjacent agricultural fields as a result of Restoration Flows or the purchase of land affected by groundwater seepage from willing sellers. Mitigation options all include physical seepage projects, such as interceptor lines, under separate environmental compliance.

Priority 1 and 2 Levee Geotechnical Evaluations: As part of the San Joaquin Levee Evaluation Project, DWR, working with the SJRRP, completed geotechnical evaluation of the flood control system integrity associated with levee seepage and stability on high-priority levees in the Restoration Area. Channel capacities limit flows to levels that would meet the U.S. Army Corps of Engineers factors of safety for levee slope stability and underseepage. Flows are limited to those that would remain “in-channel” until adequate data are available to determine levee stability factors of safety. From the initial geotechnical analysis findings, high flood hazards were identified for most SJRRP levees. Levees were prioritized for geotechnical exploration based on current channel capacity limitations and anticipated Restoration Flow routing.

Priority 1 levee segments are those that do not have 2,000 cfs in-channel capacity and are along the current Restoration Flow route. Priority 1 levees are present in Reach 2A (14.9 miles) (Gravelly Ford Study Area), the Eastside Bypass (20.6 miles) (from Sand Slough to the Eastside Bypass Control Structure), and the lowest 4.1 miles of Reach 4A (Middle Eastside Bypass Study Area). Geotechnical evaluation of these levees was completed in 2015; the evaluation concluded that all Priority 1 levees assessed can convey 2,500 cfs, except for one portion along the Middle Eastside Bypass. This assessment informed the Restoration Flows recommended in the Channel Capacity Report for the 2016 Restoration Year and also identified levee stability project needs, for which preliminary design was completed in 2016. Priority 2 levee segments are those with similar in-channel capacity constraints as Priority 1 levee segments, but are not along the current Restoration Flow route; these occur within Reach 4B2 (14.9 miles) and Mariposa Bypass (7.7 miles). Priority 2 levee evaluations were completed in 2016, and the Geotechnical Conditions Report is to be released in 2018.

CHANNEL AND STRUCTURAL IMPROVEMENTS

Mendota Pool Bypass and Reach 2B Improvements Project

Reclamation is currently designing the Mendota Pool Bypass; project construction is planned for 2017 to 2019. Construction of the Reach 2B levee portion of the project is planned to occur between 2020 and 2025. The Mendota Pool Bypass and Reach 2B Improvements Project is a Phase 1 improvement identified in the Settlement that provides for fish passage around Mendota Pool, increased capacity in Reach 2B, and diversion from Reach 2B into the Mendota Pool as needed. In addition to providing improved fish passage, the project is critical to providing fish habitat in the San Joaquin River below Friant Dam. The selected alternative was identified through a consensus-based process with the local affected community and was included in the alternatives development. This project is the first major fish passage project and first of the Phase 1 projects identified in the Settlement to move toward the construction phase. Additional details regarding this project are available in Section 1.

Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project and Report to Congress

Projects within Reach 4B are being planned to increase channel capacity to convey at least 4,500 cfs; establish a low-flow channel; and enable fish passage for Reach 4B, the Eastside Bypass, and the Mariposa Bypass. The original design capacity of Reach 4B was 1,500 cfs. However, the current capacity is zero cfs, and there have been no flows in Reach 4B for many decades. Although construction is not anticipated to begin until 2025, there are several near-term actions driving the project, including significant work to prepare the Draft EIS/R. Reclamation completed a technical memorandum describing the project alternatives in July 2015. In support of this coordination, Reclamation hosted stakeholder meetings in August and November 2015 and January, April, and July 2016.

Projects to allow for passage of anadromous salmonids at key barriers to migration are also being incorporated into the Reach 4B project.[1] The objectives for fish passage are to provide unimpeded fish passage for spring-run and fall-run adult Chinook salmon, minimize impacts on flood operations, and provide provisions within the designs to account for ground subsidence. The initial implementation phase of the project will include elements to provide connectivity of flow and fish in the Eastside Bypass between Sand Slough and the Mariposa Bypass, the current Restoration Flow path. This phase of the project, sometimes referred to as "near-term actions," includes: improvement of two miles of levees along the bypass to improve flow conveyance and modifications to the Eastside Bypass Control Structure, Dan McNamara Road crossing, and Merced National Wildlife Refuge weirs to improve fish passage. Reclamation and DWR are leading the planning and design of these projects and are on schedule to complete final design and permitting in 2018. Construction of these projects is planned to start in 2019.

Arroyo Canal Fish Screen and Sack Dam Fish Passage Project

This project implements two of the highest priorities identified in the Settlement. This project includes a fish screen on the Arroyo Canal to prevent entrainment of juvenile Chinook salmon in the canal and modifications to Sack Dam to allow for fish passage around the structure. Arroyo Canal and Sack Dam are owned and operated by Henry Miller Reclamation District #2131. The canal and dam are the sole diversion and conveyance facilities for District #2131, which provides agricultural water supply to approximately 47,000 acres of agricultural lands, along with conveyance of water supply to Federal and State wildlife refuges and private duck clubs.

The original project schedule has been delayed by the discovery of significant subsidence in the project area. In May 2012, Reclamation began monitoring the Arroyo and Temple-Santa Rita Canals to understand the localized subsidence near

[1] Since 2016, these projects are no longer incorporated as part of the Reach 4B project; they have been moved forward as actions independent of the Reach 4B decision.

Sack Dam. The resulting data support the design efforts for the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project. The project is currently on hold until the SJRRP can better understand the magnitude of future subsidence and the effect of subsidence on the final design and operations. The Program has been working with Henry Miller Reclamation District to meet the planned 2020 construction start date.

Eastside Bypass Conveyance Project

The Program completed planning for the Eastside Bypass Conveyance Project in 2015 and construction in 2016. The project restored flow capacity to the channel within the Eastside Bypass and in doing so allowed for the passage of Restoration Flows and reintroduction of salmonids. Due to sand accumulation in the low-flow channel, there was a substantial flow impediment at the El Nido Road crossing.

Reclamation excavated accumulated sand in the low-flow channel of the Mariposa Slough/Eastside Bypass, removed the silted-in concrete culverts previously impeding flows at the low-flow El Nido Road crossing, and removed the low-flow crossing. Removal of sedimentation also resulted in a lower water surface elevation, thereby improving conveyance at Sand Slough and hydraulic conditions through the Eastside Bypass between El Nido Road and the Merced National Wildlife Refuge weir. This improvement will now allow the Program to maximize Restoration Flows into downstream reaches and improve fish passage.

Sycamore Island Pond Isolation Project

Environmental review was completed and construction began on the project in 2016. The project is repairing a berm breach and isolate a gravel pit pond from the river channel by creating a pervious saddle and gravel road on top of the saddle and berm. The project will restore alternate vehicle access to Sycamore Island Recreation Area, isolate a second gravel pit pond, and create floodplain habitat. The project both improves access at Sycamore Island Recreation Area and enhances habitat for Chinook salmon. Newly created floodplains provide fish habitat on both sides of the San Joaquin River. Isolating the ponds will help salmon by keeping them in the river channel and away from predatory fish habitat in the ponds.

DWR worked to isolate the Sycamore Island Pond to protect juvenile salmon.

SALMON TRAP AND HAUL

Conducted annually since 2012, the SJRRP Adult Trap and Haul Program serves to revise and update protocols and procedures for trap and transport activities to move adult Chinook salmon around existing barriers to suitable holding and spawning habitat. Annual trap and haul efforts also take place to capture and relocate adult fall-run Chinook salmon that have bypassed the Hills Ferry Barrier and strayed into the San Joaquin River and its tributaries above the Merced River confluence, areas typically not suitable for spawning. Although the majority of the fish are released back into the San Joaquin River, some fish have been retained for artificial spawning and incubation purposes. Information collected through this activity is used to help guide reintroduction of Chinook salmon consistent with the SJRRP's Restoration Goal.

YEAR	TOTAL ADULT FALL-RUN CHINOOK SALMON TRANSPORTED
2012	119
2013	367
2014	510
2015	933
2016	676

In addition, juvenile salmon trap and haul efforts support transport of juvenile Chinook salmon to the downstream end of the Restoration Area. River conditions remain largely impassable downstream and are not conducive to juvenile salmon survival. Therefore, a trap and haul effort was performed to transport fish downstream of these obstacles. In 2015, trap and haul study efforts continued to capture and move juvenile Chinook salmon from unsuitable conditions in Reach 1, past currently impassable barriers, to a downstream location in Reach 5, where they could continue their migration to the ocean. More than 600 juvenile salmon were caught and moved in 2015. In 2014, a total of 2,393 salmon were captured during similar efforts. Low-water conditions and water temperatures that exceeded salmon thermal tolerance limits in 2015 provided an opportunity to conduct this study in an effort to prepare for future drought years. The successful outmigration of juvenile salmon is critical for survival to adulthood and to support the Restoration Goal.

Both adult and juvenile Chinook salmon are released into the river as part of the Restoration Program.

FISH REINTRODUCTION

Salmon reintroduction activities have been significantly affected over the last several years by ongoing drought conditions in California. Nevertheless, in 2015 the Program continued its progress toward the reintroduction and management of both spring-run and fall-run Chinook salmon in the San Joaquin River.

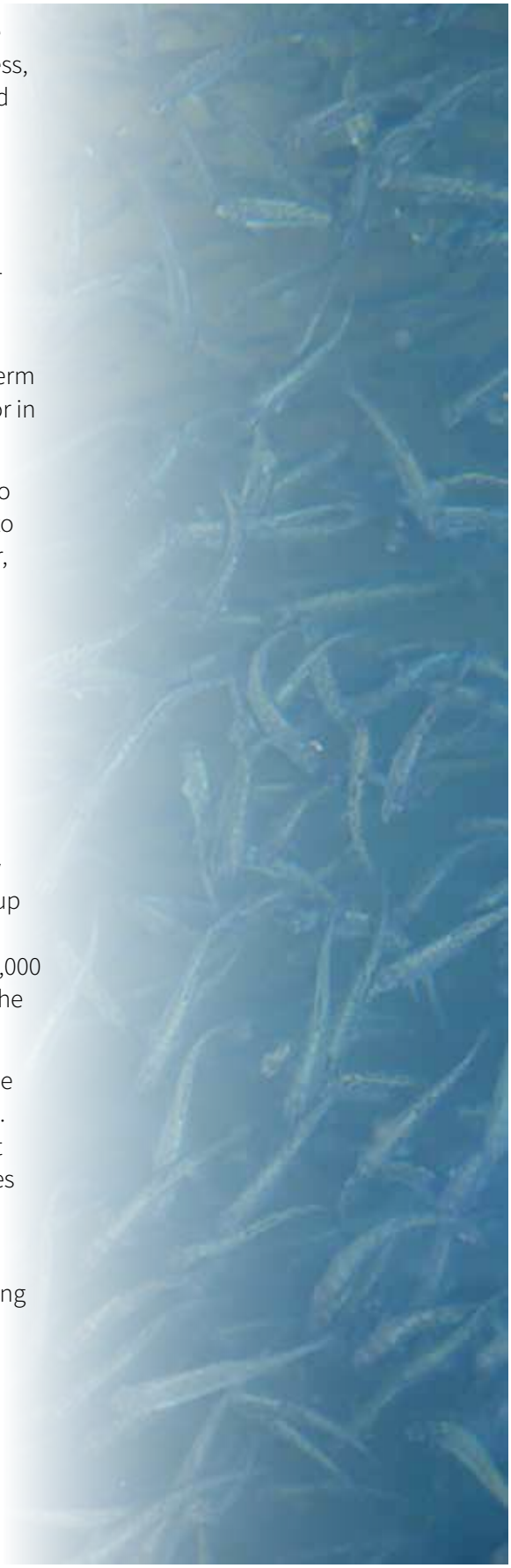
In April 2015, USFWS and CDFW released 54,000 hatchery-produced juvenile spring-run Chinook salmon into the San Joaquin River as part of SJRRP's reintroduction program. The salmon were from the Feather River Hatchery and were released near the confluence of the Merced and San Joaquin Rivers, near Newman, California. The release effort provides an opportunity to carry out fisheries studies while contributing to the long-term reintroduction of spring-run salmon to the San Joaquin River, as called for in the Settlement.

As part of this effort, some of the juvenile spring-run salmon may return to the river as adults in spring 2017. Any returning adults will be monitored to determine what parts of the river they use, their survival over the summer, and where they spawn in fall 2017. This information will help to further inform future spring-run salmon reintroduction efforts.

In spring 2016, an additional 105,000 juvenile spring-run salmon were released. As part of the SJRRP's Captive Broodstock Program, the first spawning of the adult spring-run Chinook salmon took place from late September through early October at the Interim Conservation Facility in Friant, California. CDFW crossed 43 female adult Chinook salmon with a minimum of four of the least-related males (as determined by genetic data). Each female was spawned to produce an average of approximately 2,000 eggs, resulting in production of about 45,000 juveniles, the first group of juvenile spring-run Chinook salmon produced from the adults at the facility's Captive Broodstock Program. These, along with an additional 60,000 juveniles from the Feather River Hatchery in Oroville, were released into the San Joaquin River in spring 2016.

The release of spring-run salmon represents a significant milestone for the SJRRP and the restoration of spring-run salmon populations in California. The 2015 release marked only the second time in more than 50 years that juvenile spring-run salmon will be in the San Joaquin River. These releases are early steps in the long-term commitment to bring spring-run salmon back to the San Joaquin River.

Additional activities at the Interim Conservation Facility included improving the site's infrastructure by installing new tanks and water chillers and a temporary fish-rearing facility with chillers at the base of Friant Dam on Reclamation property. These infrastructure improvements will provide necessary cold -water supplies for the rearing of the juvenile salmon.



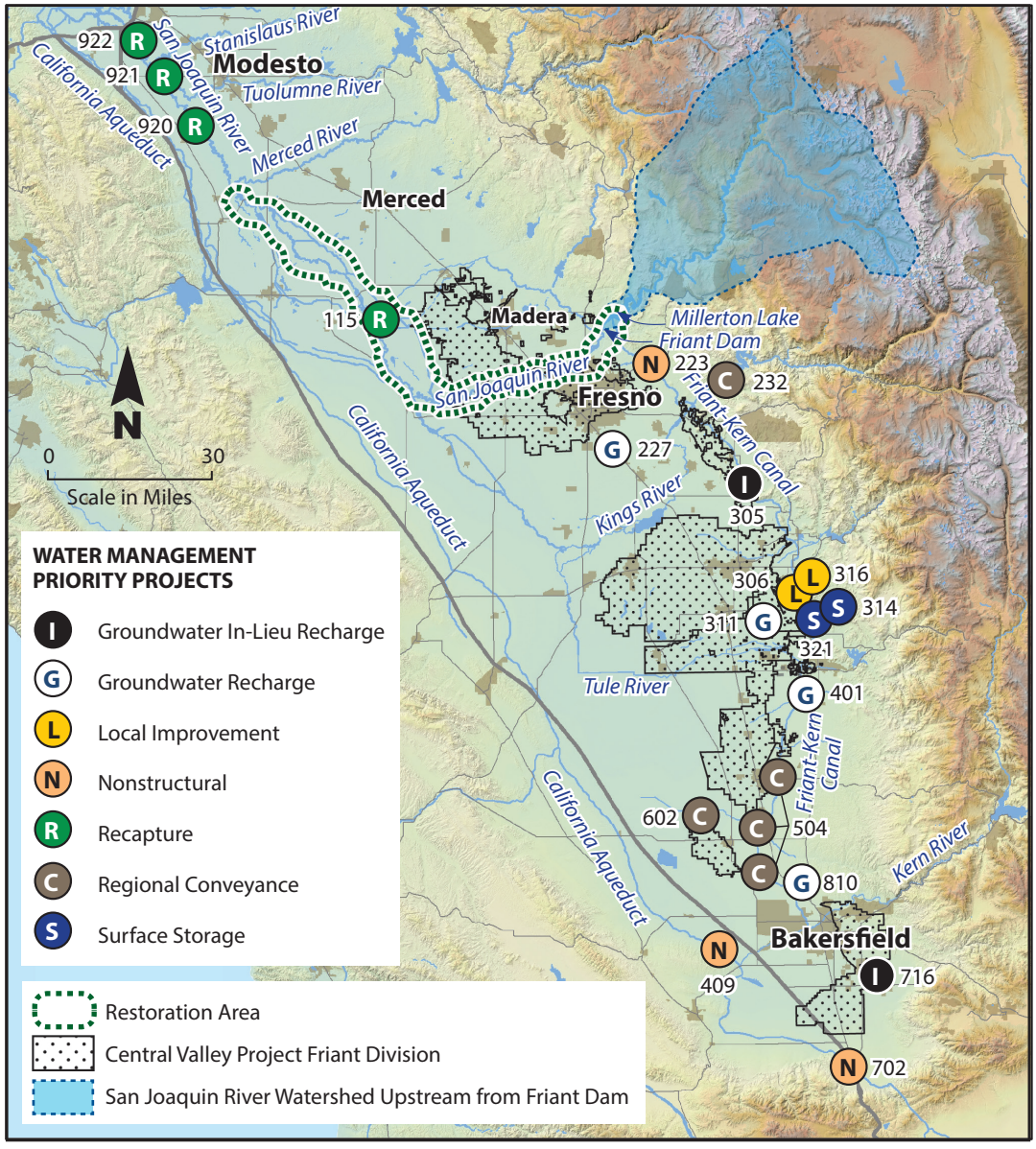
WATER MANAGEMENT

Drought conditions in 2015 caused unprecedented challenges for water management throughout California. In spite of those challenges, SJRRP made significant progress in its planning activities to achieve the Water Management Goal. As drought conditions improved in 2016 to a Normal-Dry water year, additional planning and implementation actions were taken.

Final Investment Strategy

In March 2015, Reclamation completed the Final Investment Strategy for the Water Management Goal. The Investment Strategy identifies and prioritizes projects that, in conjunction with other activities, could cost-effectively reduce or avoid water supply impacts to the Friant Division's long-term contractors (Friant Contractors) as a result of releasing Restoration Flows.

Reclamation, in collaboration with the Friant Contractors, identified, screened, developed, evaluated, and ranked more than 500 project concepts to form a list of approximately 60 projects. Of these, approximately 20 high-ranking projects were further evaluated and identified as implementable Priority Projects.



The Priority Projects include the following project types:

- Groundwater in-lieu recharge
- Groundwater recharge
- Local improvement
- Nonstructural
- Recapture
- Regional conveyance
- Surface storage

Development and Implementation of Recapture and Recirculation Plan

As required by the Settlement and the Settlement Act, the SJRRP is developing and implementing a Recapture and Recirculation Plan to achieve the Water Management Goal. The plan includes actions to recirculate, recapture, reuse, exchange, or transfer SJRRP Restoration Flows. Reclamation initiated the environmental review process for the long-term Recapture and Recirculation Plan with a Notice of Intent to prepare an EIS in July 2015, four public scoping meetings in August 2015, a 30-day public comment period, and a public scoping report in November 2015. The Program also prepared an Initial Alternatives Technical Memorandum in 2016 to describe the alternatives formulation process; the recapture, recirculation, and storage options; and the process used to combine options to form the initial alternatives.

Near-Term Water Management Goal Support Actions

While the long-term Recapture and Recirculation Plan is being developed, the SJRRP implements near-term actions to contribute to the Water Management Goal. The 2015 water year was classified as Critical-Low due to the drought conditions. Consistent with the Settlement, no water was allocated to the Program under these conditions, so there were no Restoration Flows for 2015. However, in anticipation of increased precipitation and flows during 2016, Reclamation put actions into motion so that Restoration Flows could be captured and recirculated.

Recapture and recirculation of Restoration Flows to the Friant Contractors took place from three recapture points: Mendota Pool and two locations on the lower San Joaquin River. The connectivity of the San Joaquin River to the Merced River confluence in 2016 provided Reclamation its first opportunity to recapture Restoration Flows downstream of the Restoration Area. In July 2016, Reclamation completed an Environmental Assessment and a Finding of No Significant Impact to temporarily recapture Restoration Flows at existing facilities owned by Banta-Carbona and Patterson Irrigation Districts. In addition, the final environmental documents for the transfer or exchange of recirculated Restoration Flows to Red Top were released in December 2016; the project would reduce reliance on deep aquifer groundwater pumping in the Red Top area, thereby reducing the rate of subsidence and avoiding water supply impacts to Friant Contractors by providing a mechanism to recirculate, reuse, exchange, or transfer recaptured Restoration Flows. The amount of Restoration Flows recaptured each year depends on hydrologic conditions, the availability of Restoration Flows, and recapture and conveyance capacity.

Friant-Kern Canal and Madera Canal Capacity Restoration Projects

The Settlement Act authorized and directed the Secretary to conduct feasibility studies on the restoration of the capacity of the Friant-Kern Canal, the Madera Canal, and the reverse-flow pump-back facilities on the Friant-Kern Canal.

Friant-Kern Canal Capacity Restoration Project: Reclamation and the Friant Water Authority explored the cost-saving and sharing opportunities associated with this project, but concluded that the project is not currently financially viable. The project feasibility study is being closed out and current efforts are being concluded. Reclamation is continuing to work with the Friant Water Authority to identify next steps.

Friant-Kern Canal below Millerton Lake.

Madera Canal Capacity Restoration Project: The Madera Canal Capacity Restoration Project will help to reduce or avoid adverse water supply impacts to Friant Contractors by enhancing the canal's operating capacity through increased water supply reliability and operational flexibility to meet user demands. The project also has the benefit of reducing reliance on groundwater supplies. In 2015, the SJRRP team completed the formulation and evaluation of alternatives as part of a feasibility study. Two meetings were held with stakeholders in May and October to review the feasibility analysis and refine the alternatives for consideration. In 2016, the Final Feasibility Study described and analyzed the technical, environmental, and financial feasibility of three projects agreed upon by stakeholders.

These three projects are:

- Low-flow valve replacement
- Fresno River diversion
- Automated debris screens, new Supervisory Control and Data Acquisition (SCADA) stations, and system upgrades

Appropriate environmental documentation, consultation, and permitting associated with each project are under way, with construction expected in 2017. As noted in the Feasibility Study, the low-flow valve replacement project is anticipated to proceed first, followed by the other two projects.

Friant-Kern Canal Reverse-Flow Pump-Back Project (Western Drought Response Funded Project): Reclamation's drought relief efforts in 2015 and 2016 included providing $3.3 million to the Friant Water Authority for the Friant-Kern Canal Reverse-Flow Pump-Back Project. The estimated $9.3 million total project will improve the Friant Division's operational flexibility, including the ability to recover banked groundwater during dry years. The new facilities would would also improve the Friant Division's ability to recirculate and return recaptured Restoration Flows as part of the SJRRP. The project includes planning, designing, constructing, and operating three permanent pump-back facilities on the Friant-Kern Canal. Construction is expected to be completed in late 2019.

Financial Assistance for Groundwater Banking Facilities

Groundwater banking and recharge projects are designed to help offset the water supply impacts to Friant Contractors from the release of Restoration Flows, as outlined in the Settlement and Settlement Act. The projects will capture water that would otherwise go downstream in wet years and store it underground for future extraction in lieu of surface diversions during dry years. These projects also have benefits for drought relief, as they improve the region's collective capability to capture water supplies in wet years and store it underground, offsetting the effects of surface diversions in future droughts and potential subsidence as a result of overpumping groundwater. The SJRRP is providing grant funds to support groundwater banking projects with five local water districts: Tulare Irrigation District, Shafter-Wasco Irrigation District, Porterville Irrigation District, and Pixley & Delano-Earlimart Irrigation Districts.

Tulare Irrigation District (TID): In November 2015, Reclamation completed the environmental review for the TID Cordeniz Basin Project, paving the way for constructing an 80-acre groundwater recharge basin, five groundwater monitoring wells, and related water management and monitoring actions. The project will allow the TID to expand groundwater recharge efforts, improve monitoring of groundwater levels, and reduce adverse water supply impacts to Friant Contractors resulting from the release of Restoration Flows. Construction began in summer of 2016 and will finish in 2017.

Shafter-Wasco Irrigation District: The environmental documentation for the Kimberlina Groundwater Recharge Basin and Banking Project was completed in 2016, allowing for the initiation of construction. The project includes the construction of a new 270-acre groundwater recharge basin south of Kimberlina Road to serve as spreading grounds to recharge groundwater in the region. Three new wells adjacent to the spreading basin will allow for recovery of the banked water. The project allows the Shafter-Wasco Irrigation District to capture, recharge, and store surface water supplies underground when hydrologic conditions permit and withdraw groundwater when needed. The project will help to alleviate impacts from reduced available surface water flows and increased groundwater pumping.

Porterville Irrigation District (PID): The PID In-Lieu Groundwater Project Finding of No Significan Impact was signed in September 2016, allowing for construction in 2017. The project includes the construction of a new water conveyance that would allow PID to provide surface water supplies from its CVP allocation to 2,120 acres that currently utilize groundwater for irrigation purposes. These actions will allow adjacent landowners to take surface diversions in lieu of using their groundwater pumps and take surface water supplies that are currently being sold and transferred outside of PID. By no longer pumping groundwater in the service areas, this project will allow the aquifer to recharge passively and slow the overdraft of groundwater in the system.

Pixley & Delano-Earlimart Irrigation Districts: Environmental review is under way for a project with the Pixley Irrigation District and Delano-Earlimart Irrigation District to provide a new turnout from the Friant-Kern Canal, 4.5 miles of pipeline for the delivery and recovery of water for the project, and pumping plants and associated electrical and control facilities to boost water recovered from the project. The project also includes 575 acres of recharge basins with a well field of 11 recovery wells. The environmental review process is on schedule and construction is anticipated to initiate in 2018.

MONITORING AND ANALYSIS

Monitoring and analysis activities are an important part of planning, implementing, and evaluating the SJRRP. Every year, the Program has a variety of annual and multi-year studies under way in all aspects of program planning and implementation. And every year, the Program team identifies research priorities and selects the study and monitoring proposals that best meet Program needs. The following descriptions summarize some of the important studies and monitoring under way in 2015 and 2016.

Flow Conveyance and Fish Passage

Evaluation and monitoring studies were conducted for many features that affect the capacity to manage irrigation flows, Restoration Flows, and flood flows in the river channel. These studies included levee seepage and stability evaluations in Reach 2A, Reach 4A, and the Middle Eastside Bypass; the effects of varied vegetation types in the river channel on flows; water surface elevation monitoring; subsidence impacts on flows and channel capacity; and modeling of channel seepage of Restoration Flows.

Studies also reviewed and modeled potential non-structural barriers for fish migration, including critical riffle depths, temperature barriers, and false migration pathways, such as agricultural drains and tributaries to the river.

Adult Chinook salmon being released into the upper reaches following a trap and haul effort.

Spawning, Incubation, and Rearing Habitat

Many of the studies related to salmon spawning, incubation, and rearing are being conducted in Reach 1. These studies include evaluating the effects of flows on the physical conditions to support salmon spawning, developing a model of habitats suitable for salmon spawning, monitoring the cold water pool in Millerton reservoir, and evaluating the emergence and survival of salmon and river conditions.

Other studies in Reach 1 focus on sediment movement effects on habitat suitability, including the impact of flows on fine silt deposition, flow forces needed to mobilize sediment of the appropriate size to support salmon spawning beds, use of advanced acoustic technology to monitor movement of cobble- and gravel-sized sediment movements, sediment transport in two major tributaries below Friant Dam, and sand accumulation in spawning areas.

Two other studies look beyond Reach 1, including sediment monitoring in Reach 2B to support forecasts for reach response following levee setbacks and re-surveying Reach 1 and 2 channel cross sections to identify changes in channel geometry and substrates resulting from Restoration Flows.

Two previous studies focused on salmon rearing in other reaches, including an analysis of water quality data against water quality parameters for Chinook salmon and identification, testing, and monitoring of pilot floodplain sites to evaluate potential biological productivity and benefits for fish rearing.

Adult Migration and Predation Protection

Three studies examined temperature and predation considerations, including assessing existing riparian habitats and river water temperatures to calibrate temperature models for future restored conditions, modeling of potential water temperature reduction from increased riparian habitat below Sack Dam, and delineating the locations of gravel pits in Reach 1 as a first step toward prioritizing pits to reduce predation.

Fish Reintroduction

Two studies evaluated salmon populations, including genetic monitoring of the interim hatchery Chinook salmon stock and the newly established in-river population and baseline population information essential for assessment of Butte Creek as a potential donor stock for the SJRRP.

Temporary salmon trap and haul activities continued to provide adult and juvenile salmon to test suitability of river conditions. Adult salmon were trapped at the Hills Ferry Barrier and transported to spawning areas in Reach 1, and juvenile salmon were transported from Reach 1 to support successful outmigration.

The SJRRP also evaluated potential locations, designs, operations, and permitting requirements for a segregation weir in Reach 1 to separate spring-run and fall-run salmon.

Long-Term Monitoring

Several long-term monitoring studies continued, including steelhead monitoring and relocation, rotary screw trap monitoring for juvenile salmon, and vegetation monitoring in approximately 20 vegetation locations in the Restoration Area.

Rendering of Salmon Conservation and Research Facility, to be completed in 2018.

SECTION 4: PUBLIC INVOLVEMENT AND OUTREACH

Section 4 describes SJRRP's efforts to inform and engage the public.

SJRRP PUBLIC OUTREACH ACTIVITIES

- Landowner Coordination
- Technical Feedback Groups
- Public Review of Program Documents
- Stakeholder Briefings
- Press Releases and Media Advisories
- Program Informational Materials
- Community Events

The public outreach program includes a variety of public outreach activities and opportunities for the public to participate in the SJRRP in an open and transparent process. The Program Public Involvement Plan (PIP) describes how the five Federal and State agencies implementing the SJRRP inform and involve all levels of the community in the Program. Effective communication and coordination helps to ensure that stakeholders and the general public are informed and have an opportunity to provide meaningful input.

LANDOWNER COORDINATION

Landowner coordination is a critical component of the Program's public outreach efforts. Within the Restoration Area, there is a diverse array of residential; agricultural; commercial; non-profit; and local, State, and Federal government agency landowners and managers. A proactive coordination effort with landowners affected by the Program ensures that property owners have meaningful input on the activities that affect their property and that Program decisions are made in a transparent manner.

The Program has dozens of studies and field activities under way at a given time, including biological investigations, water quality and aquatic invasive species sampling, and studies to better understand salmonid spawning habitat quality and the efficiency of the salmon trap and transport efforts.

The Program also investigates the physical integrity of the river system through levee penetration surveys, geological investigations and topographic surveys of various reaches, and subsidence monitoring surveys. In combination, these surveys provide data about project areas that support the design of Program elements, such as seepage mitigation, revegetation, Restoration Flows, fish reintroduction, permitting, and environmental review of proposed projects.

The Program's Landowner Coordinator helps to facilitate the exchange of information between the SJRPP and affected property owners and helps to secure access to property for Program staff to conduct studies.

In advance of any surveys, studies, or other field activities, the Program sends field advisories to affected landowners and other stakeholders along the river and posts them on the Program website.

SJRRP SCIENCE SYMPOSIUM

The SJRRP held its first Science Meeting on June 11–12, 2015, in Los Banos, California. The goal was to connect those conducting scientific research and monitoring in support of the SJRRP, learn about preliminary findings from monitoring and analysis efforts, and inform SJRRP management of scientific results. There were 35 presentations covering a range of topics, including reintroduction of spring- and fall-run Chinook salmon, temperature challenges in the San Joaquin River, salmon spawning and incubation, and vegetation and riparian ecology. Due to the success of this event, a second annual Science Meeting was held August 17–19, 2016, in Fresno, California. Topics at the 2016 event included spring-run Chinook salmon reintroduction, spawning and incubation habitat, physical processes affecting river restoration, juvenile production and survival, and multi-benefit projects on floodplains.

SJRRP Science Symposium 2016

In addition, as the Program moves into more construction-focused activities, the Program has real estate interests in lands within the Restoration Area required to support various projects. Coordination with the owners and managers of these lands is a critical component of the planning process. The Program real estate team and landowner coordination team work closely together to ensure all parties are well informed and negotiations are able to take place.

In specific areas, the Program coordinates with landowners on the planning and design of channel improvements and other restoration activities. For example, in August 2015 a public workshop was held to review the initial alternatives and engage the public in the consensus-based alternatives development process for the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project.

TECHNICAL FEEDBACK GROUPS

Technical Feedback Groups (TFGs) have been established to assist Program staff in soliciting input from technical experts, interested stakeholders, and the general public. These meetings provide an open and transparent public process for the development of key Program strategies, documents, and implementation activities. There are currently three TFGs: Restoration Goal, Seepage and Conveyance, and Water Management.

Participation in TFG meetings is open to all members of the public, including the Settling Parties, Third Parties, landowners, and any stakeholders with an interest in the Program. Meeting summaries from past TFG meetings and schedules and agendas for future meetings are posted on the SJRRP website. TFG meetings were conducted throughout 2015 and 2016.

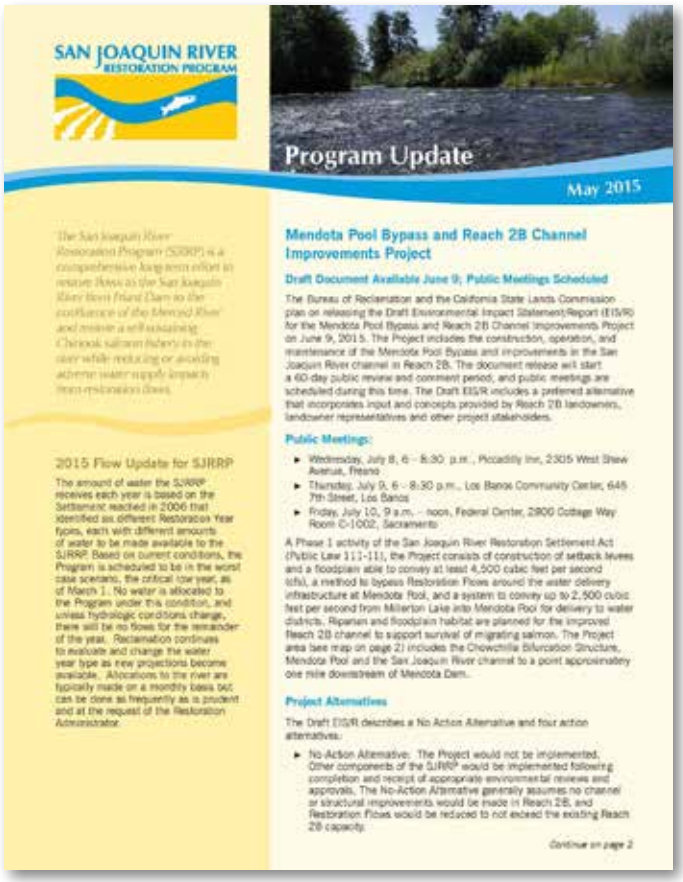
TFG MEETING DATES

- **Restoration Goal**
  (Meetings Combined with Framework for Implementation Meetings)
  2015: November 23
  2016: April 20, November 8
- **Seepage and Conveyance**
  2015: August 6
  2016: February 12, March 31
- **Water Management**
  2015: January 21, March 20, May 22, August 21
  2016: January 20, March 18, September 16

In 2015, the SJRRP combined the Restoration Goal TFG and the Fisheries Management TFG to simplify and coordinate stakeholder involvement and feedback related to the Restoration Goal. The newly revised Restoration Goal TFG provides an open forum for agencies, the public, and stakeholders to plan, coordinate, and implement Restoration Goal activities and maintain awareness of upcoming documents, operational conditions, and the status of major Program activities.

PUBLIC REVIEW

In 2015 and 2016, the SJRRP conducted public review of several key Program decision documents. The public review process included a public comment period, typically 30 or 60 days, for members of the public to provide their written comments on the documents.



SAN JOAQUIN RIVER RESTORATION PROGRAM

Program Update

May 2015

Mendota Pool Bypass and Reach 2B Channel Improvements Project

Draft Document Available June 9; Public Meetings Scheduled

The Bureau of Reclamation and the California State Lands Commission plan on releasing the Draft Environmental Impact Statement/Report (EIS/R) for the Mendota Pool Bypass and Reach 2B Channel Improvements Project on June 9, 2015. The Project includes the construction, operation, and maintenance of the Mendota Pool Bypass and improvements in the San Joaquin River channel in Reach 2B. The document release will start a 60-day public review and comment period, and public meetings are scheduled during this time. The Draft EIS/R includes a preferred alternative that incorporates input and concepts provided by Reach 2B landowners, landowner representatives and other project stakeholders.

Public Meetings:

- Wednesday, July 8, 6 – 8:30 p.m., Piccadilly Inn, 2305 West Shaw Avenue, Fresno
- Thursday, July 9, 6 – 8:30 p.m., Los Banos Community Center, 645 7th Street, Los Banos
- Friday, July 10, 9 a.m. – noon, Federal Center, 2800 Cottage Way Room C-1002, Sacramento

A Phase 1 activity of the San Joaquin River Restoration Settlement Act (Public Law 111-11), the Project consists of construction of setback levees and a floodplain able to convey at least 4,500 cubic feet per second (cfs), a method to bypass Restoration Flows around the water delivery infrastructure at Mendota Pool, and a system to convey up to 2,500 cubic feet per second from Millerton Lake into Mendota Pool for delivery to water districts. Riparian and floodplain habitat are planned for the improved Reach 2B channel to support survival of migrating salmon. The Project area (see map on page 2) includes the Chowchilla Bifurcation Structure, Mendota Pool and the San Joaquin River channel to a point approximately one mile downstream of Mendota Dam.

Project Alternatives

The Draft EIS/R describes a No Action Alternative and four action alternatives:

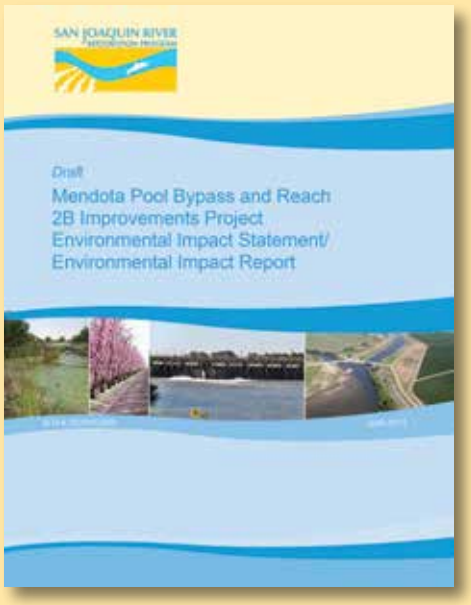
- No Action Alternative: The Project would not be implemented. Other components of the SJRRP would be implemented following completion and receipt of appropriate environmental reviews and approvals. The No-Action Alternative generally assumes no channel or structural improvements would be made in Reach 2B, and Restoration Flows would be reduced to not exceed the existing Reach 2B capacity.

Continue on page 2

2015 Flow Update for SJRRP

The amount of water the SJRRP receives each year is based on the Settlement reached in 2006 that identified six different Restoration Year types, each with different amounts of water to be made available to the SJRRP. Based on current conditions, the Program is scheduled to be in the worst case scenario, the critical low year, as of March 1. No water is allocated to the Program under this condition, and unless hydrologic conditions change, there will be no flows for the remainder of the year. Reclamation continues to evaluate and change the water year type as new projections become available. Allocations to the river are typically made on a monthly basis but can be done as frequently as is prudent and at the request of the Restoration Administrator.

2015 & 2016 PUBLIC REVIEW DOCUMENTS



Program Management Documents

- 2015 Draft and Final Implementation Framework; the final two of five stakeholder meetings took place February 5 and March 11, 2015.

Flow Management Projects and Reports

- Draft Environmental Assessment: Seepage Management Actions
- Draft and Final Environmental Assessment and Finding of No Significant Impact: Delivery and Use of Unreleased San Joaquin River Restoration Flows (Water Contract Years 2016–2025)
- Draft Channel Capacity Report: 2017 Restoration Year
- Draft and Final Channel Capacity Report: 2016 Restoration Year
- Final Channel Capacity Report: 2015 Restoration Year

Channel and Structural Improvement Projects

- Draft and Final Environmental Impact Statement/Report and Record of Decision: Mendota Pool Bypass and Reach 2B Improvements Project
  - Public Meetings held July 8 (Fresno), July 9 (Los Banos), and July 10 (Sacramento) in 2015.
- Draft and Final Environmental Assessment and Finding of No Significant Impact: Eastside Bypass Conveyance Project
- Draft and Final Environmental Assessment: Sycamore Island Pond Isolation Project

Fish Restoration Projects

- Finding of No Significant Impact: 2016 San Joaquin River Restoration Program Juvenile Fall-Run Chinook Salmon Trap and Haul Study
- Finding of No Significant Impact: 2015 San Joaquin River Restoration Program Juvenile Fall-Run Chinook Salmon Trap and Haul Study

Water Management Projects

- Draft and Final Environmental Assessment and Finding of No Significant Impact: Water Year 2015–2016 Transfer and Exchange from Madera Irrigation District and Chowchilla Water District to the Red Top Area
- Draft Environmental Assessment: One-Year Recapture of San Joaquin River Restoration Flows at Patterson Irrigation District and/or Banta-Carbona Irrigation District
- Draft and Final Environmental Assessment/Initial Study and Finding of No Significant Impact: Tulare Irrigation District, Cordeniz Basin
- Draft and Final Environmental Assessment/Initial Study and Finding of No Significant Impact: Porterville Irrigation District In-Lieu Groundwater Recharge Project
- Draft Environmental Assessment: Shafter-Wasco Irrigation District Kimberlina Groundwater Recharge Basin and Banking Project
- Final Feasibility Report: Madera Canal Capacity Restoration Feasibility Study
  - The final two of four public stakeholder meetings were held in May and October 2015
  - Additional stakeholder meetings were held with irrigation district representatives in January and April 2016.

TOURS, BRIEFINGS, AND COMMUNITY EVENTS

In both 2015 and 2016, the SJRRP co-sponsored the annual San Joaquin River Restoration Tour, organized by the Water Education Foundation, and participated in the Trout Unlimited SalmonFest. Also, the SJRRP regularly conducts program informational briefings with elected officials, governmental agencies, stakeholders, and interested organizations to report on the progress of the Program, discuss program activities, and solicit feedback.

WATER EDUCATION FOUNDATION SAN JOAQUIN RIVER RESTORATION TOUR

In 2015 and 2016, the SJRRP co-sponsored the Annual San Joaquin River Restoration Tour, organized by the Water Education Foundation. Tour attendees came from a variety of backgrounds, including water agencies, government agency staff, legislative aids, contractors, students, and the public. The San Joaquin River Restoration Tour explores the challenges associated with restoring flows and a Chinook salmon fishery to the San Joaquin River from below Friant Dam to the confluence with the Merced River. Tour stops included Friant Dam, the Interim San Joaquin River Salmon Conservation and Research Facility, Chowchilla Bifurcation Structure and Canal, Mendota Pool, Sack Dam, Sand Slough Control Structure, and the Merced National Wildlife Refuge. Participants learned about water project operations, salmon spawning and rearing, flood management and seepage issues, agricultural diversions and bypass control structures, interim flows and impacts to agricultural lands, and water allocations that have been affected by the drought.

FRESNO SALMONFEST AT LOST LAKE PARK

In 2015, Trout Unlimited and the San Joaquin River Partnership hosted the annual SalmonFest at Lost Lake Park in Fresno. The event is a celebration of the San Joaquin River and offers a chance for the public to learn about the San Joaquin River Restoration Program; hear current updates on improvements to the river; and learn about the economic, ecological, and community benefits of a restored San Joaquin River. Activities included live music, fly-casting lessons and a competition, free canoe and kayak rides, art activities for kids, a huge fish tank with salmon, and a 5K run along the beautiful river.

PROGRAM INFORMATION MATERIALS AND MEDIA RELATIONS

The SJRRP manages a website to house program informational material and key Program documents and to highlight major Program accomplishments and milestones. Between January 1, 2015, and December 31, 2016, the Program website had more than 29,836 visits by 14,487 individual users with more than 139,847 page views.

The SJRRP uses a Program mailing list and an email distribution list to disseminate program information to organizations, stakeholders, affected landowners, and interested members of the public who want to receive notification of Program activities. Interested individuals may submit their contact information at meetings or on the Program website. The list includes approximately 3,000 contacts.

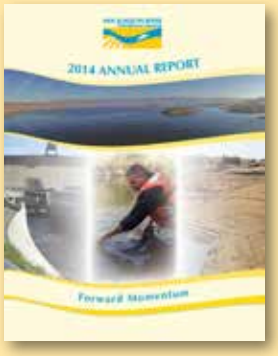
The SJRRP developed and published several key Program documents in 2015. These documents were posted on the Program website to facilitate early coordination and public review for stakeholders and interested members of the public regarding projects, activities, initial concepts, and approaches under consideration.

In 2015 and 2016, three Program Updates were developed for distribution to the Program mailing list and were posted to the Program website in May and December 2015 and Fall 2016. Also, the 2014 San Joaquin River Restoration Program Annual Report was released and made publicly available on the Program website.

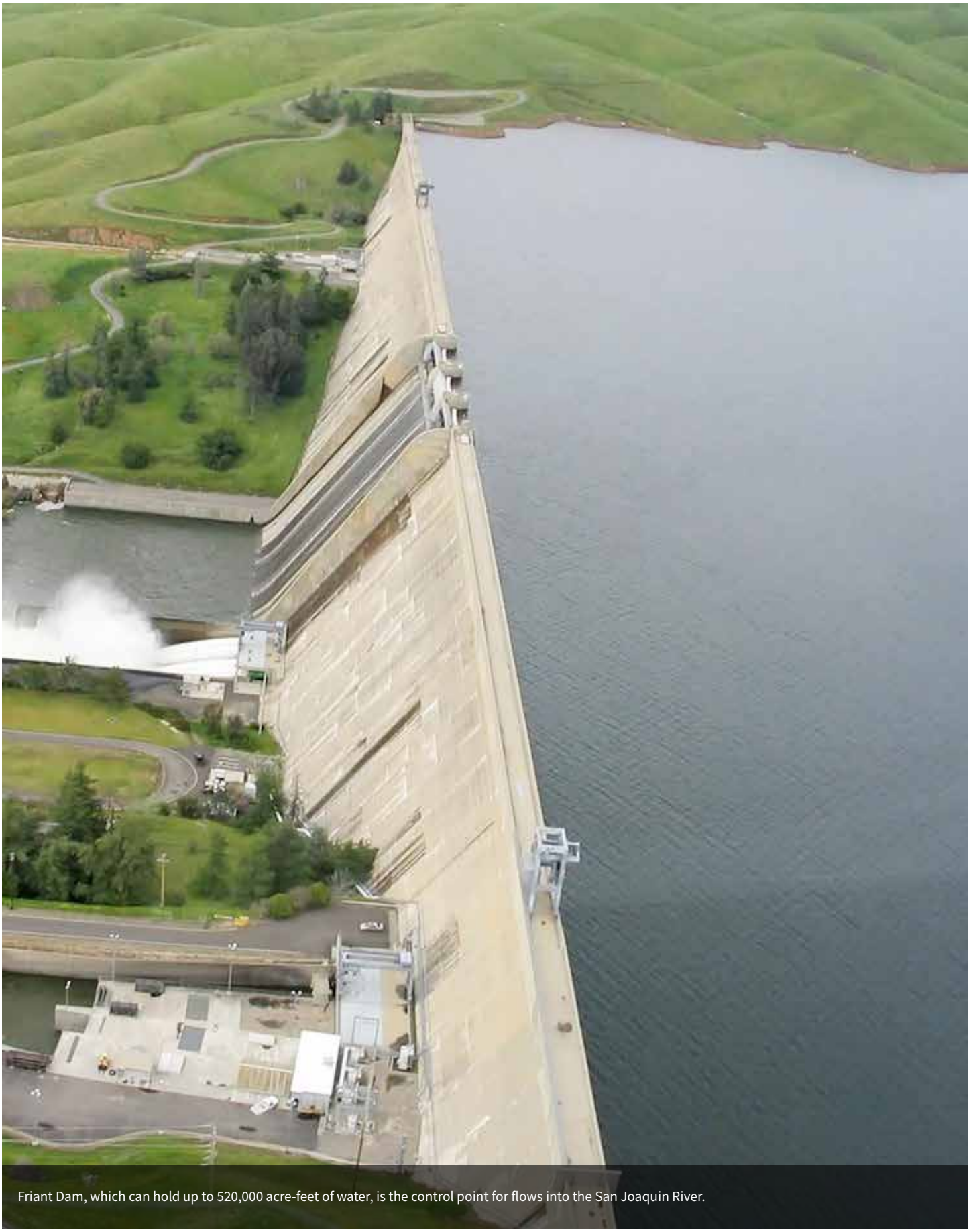
Several press releases and media advisories were published and distributed to local and regional media outlets in 2015. These releases highlighted key Program activities and accomplishments. Thirty-two field advisories were circulated for activities being conducted in the Restoration Area throughout 2015 and 2016. These can be viewed on the Program website.

PROGRAM ACCESSIBILITY FACTS AND FIGURES FOR 2015 AND 2016

Public Documents Published	34
Reach and Project-Related Public Meetings Held	27
Technical Feedback Meetings	11
Field Advisories Sent Out	32
Press Releases Issued	17
Website Visits by Individual Users	14,487
Website Page Views	139,847
Mailing List Contacts	~3,000



Visit the SJRRP website at: *www.restoresjr.net*



Friant Dam, which can hold up to 520,000 acre-feet of water, is the control point for flows into the San Joaquin River.

SECTION 5: PROGRAM COSTS AND FUNDING

Section 5 details the budget and funding for 2015–2016 for the San Joaquin River Restoration Program.

COST CONSIDERATIONS

From the Federal perspective, the SJRRP will be almost entirely reliant on Federal appropriations during the Five-Year Vision. While currently $88 million is available for expenditure from the San Joaquin River Restoration Fund (SJRR Fund), which is not subject to appropriations, and $35 million is available for implementation of the Friant-Kern and Madera Canal Capacity Restoration Projects, Reclamation anticipates fully obligating these "mandatory" funds by the end of FY 2017. Accordingly, the Five-Year Vision assumes annual Federal appropriations ranging from $34 to $53 million, including $2.445 million per year in funds from the Central Valley Project (CVP) Restoration Fund ($2 million indexed to 2015 dollars). Overall, the SJRRP will be funding constrained, and activities will be subject to the amount of appropriated funds.

AUTHORIZATION AND FUNDING

Federal participation in the SJRRP is authorized under the Central Valley Project Improvement Act and the Settlement Act, part of the Omnibus Public Land Management Act of 2009, Public Law 111-11. The Central Valley Project Improvement Act, signed in 1992, included provisions for the potential restoration of the San Joaquin River and authorized planning and environmental compliance for such activities. The Settlement Act, signed in March 2009, authorizes and directs the Secretary to implement the Settlement. Federal funding obligated for the SJRRP in Federal Fiscal Year (FY) 2015 for planning and environmental compliance activities was $44.8 million in 2015 and $49.5 million in 2016.

The State has committed its support to the Settlement by entering into a Memorandum of Understand (MOU) with the Settling Parties that outlines its collaborative role in the planning, design, funding, and implementation of the actions set forth in the Settlement. The State has committed to contribute approximately $200 million for projects that directly contribute to the restoration efforts. California Propositions 84 and 1E, passed by the voters in 2006, provide a portion of these funds, including $8.8 million obligated in State FY 2015.

SJRRP ANNUAL REPORT: ANNUAL BUDGET TABLE FOR 2015-2016

SOURCE:

FEDERAL FUNDS	FISCAL YEAR 2015[2]	FISCAL YEAR 2016[3]
Reclamation[1]		
San Joaquin River Restoration Fund	$16,600,786	$12,553,150
Central Valley Project Restoration Fund	$2,000,761	$2,000,000
Federal Appropriations	$32,000,000	$37,380,000
FEDERAL SUB-TOTAL	**$50,601,547**	**$51,933,150**
STATE OF CALIFORNIA FUNDS		
Department of Fish and Wildlife		
Proposition 13	$0	$0
Proposition 84	$2,873,000	$1,496,000
Proposition 1E	$0	$0
Department of Water Resources		
Proposition 13	$0	$0
Proposition 84	$7,600,000	$6,800,000
Proposition 1E	$2,544,500	$2,280,000
STATE SUB-TOTAL	**$13,017,500**	**$10,576,000**
TOTAL	**$63,619,047**	**$62,509,150**

NOTES: 1. Includes funding for USFWS and NMFS participation.

2. Fiscal Year 2015 represents total funds obligated.

3. Fiscal Year 2016 represents total dollar amounts approved.

State Fiscal Year is from July 1 toJune 30; Federal Fiscal Year is from October 1 toSeptember 30.

Program Management Structure

The Settlement includes explicit commitments that the Settling Parties and downstream water and land interests (referred to as Third Parties) would be involved in developing and implementing plans by the Secretary. With court approval of the Settlement, the Settling Parties initiated MOUs with the State and the Third Parties. These MOUS form the basis of a program structure to provide for effective oversight, management, and transparency of the SJRRP.

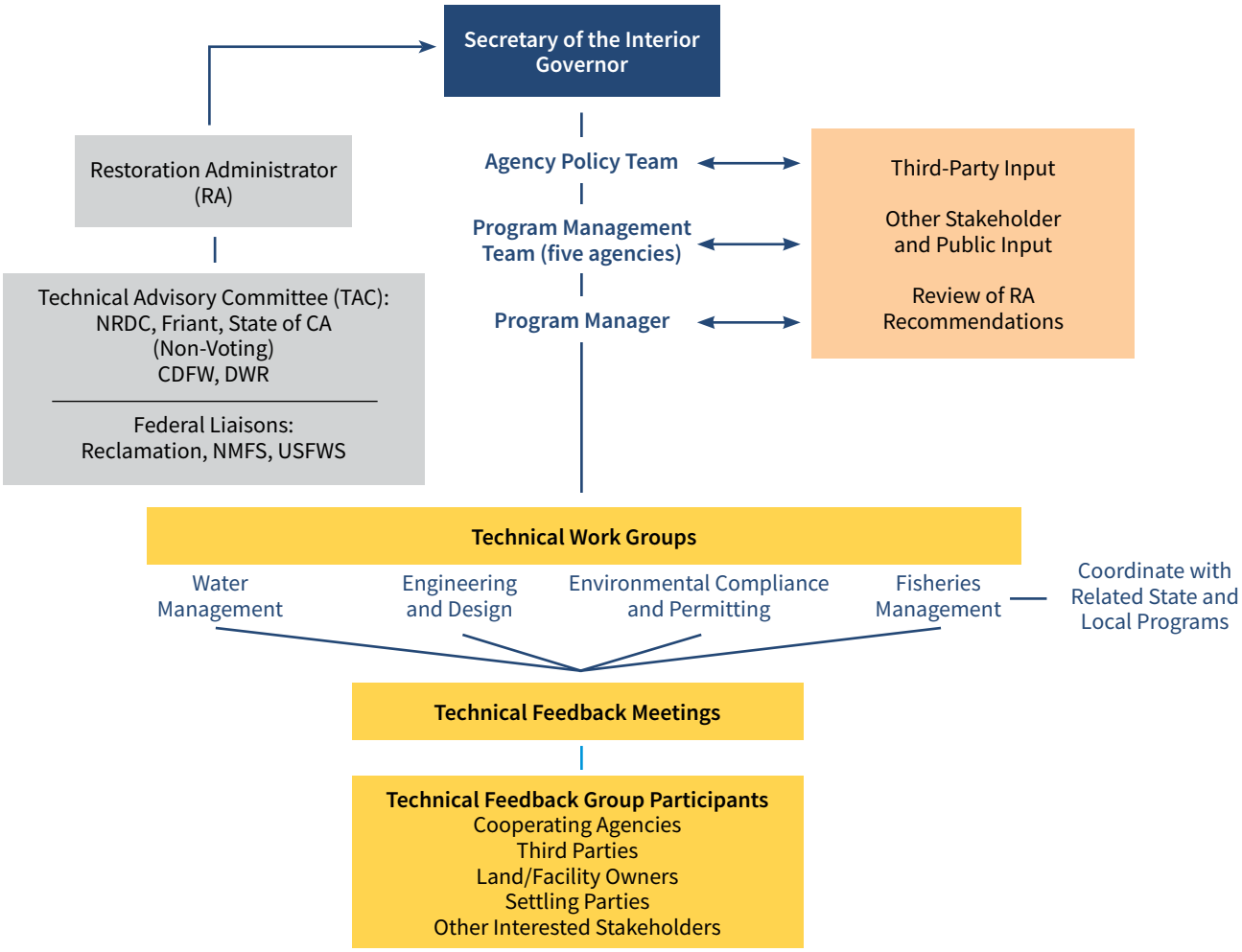
State MOU: Signed at the same time as the Settlement, the State MOU recognizes that, through CDFW, DWR, the Natural Resources Agency, and the California Environmental Protection Agency (Cal/EPA), the State will play a major, collaborative role in the planning, design, funding, and implementation of the actions on the San Joaquin River called for by the Settlement.

Third-Party Stakeholder MOU: Signed in February 2007, this MOU recognizes that the Third Parties will play a collaborative role in the planning, design, implementation, and potential adaptation of the actions on the San Joaquin River called for by the Settlement and in the implementing legislation.

The SJRRP Team: The SJRRP team is a multi-tiered group that includes staff from the Implementing Agencies. Roles and responsibilities of this group include:

- **Program Management Team:** Includes executives from the Implementing Agencies and is responsible for overall direction and coordination of the SJRRP.
- **Program Manager:** Provides direction and management of the Technical Work Groups (TWGs) and serves as chair of the Program Management Team.
- **Technical Work Groups:** The SJRRP includes four primary TWGs, each supported by various subject-matter-specific subgroups. The four TWGs are:
    - Water Management
    - Engineering and Design
    - Environmental Compliance and Permitting
    - Fisheries Management

Program structure and organizational chart that reflects the provisions of the Settlement and subsequent MOUs



THIRD-PARTY MOU SIGNATORIES

ENTITIES ALONG THE SAN JOAQUIN RIVER

- San Joaquin River Exchange Contractors Water Authority
- Central California Irrigation District
- Firebaugh Canal Water District
- San Luis Canal Company
- Columbia Canal Company
- San Joaquin River Resource Management Coalition

DOWNSTREAM TRIBUTARY WATER USERS

- Merced Irrigation District
- Turlock Irrigation District
- Modesto Irrigation District
- Oakdale Irrigation District
- South San Joaquin Irrigation District
- San Joaquin Tributaries Association

OTHER CVP WATER USERS

- Westlands Water District
- San Luis & Delta-Mendota Water Authority

Section 6 outlines the San Joaquin River Restoration Program's path forward for 2017 and beyond.

2017 AND THE FIVE-YEAR VISION

In 2015, the Program made significant progress on studies, environmental reviews, and engineering design to keep on track to accomplish the goals identified in the Revised Framework's Five-Year Vision. This progress continued into 2016 with planning and design and the completion of the first milestone construction project for the Program in the Eastside Bypass. Looking forward, in 2017 the Program will move into construction on several milestone projects and purchase additional seepage easements to increase channel capacity from 300 to 500 cubic feet per second (cfs).

Mendota Pool Bypass

Reclamation anticipates awarding the first construction contract for the Mendota Pool Bypass and Reach 2B Improvements Project in summer 2017. The project will create a new 1-mile bypass, which will allow Chinook salmon to pass upstream around Mendota Dam and Mendota Pool water supply infrastructure. This construction project is expected to create about 100 construction jobs near Mendota and indirectly support more than 140 jobs over the anticipated 10-year construction period. The overall project will benefit multiple stakeholders, including farmers, cities, recreationalists, and the environment.

Salmon Conservation and Research Facility

Public funding from voter-approved state bonds (Proposition 84 and Proposition 1) will fund construction on the new Salmon Conservation and Research Facility (SCARF). The project will begin in 2017, approximately 1 mile downstream of Friant Dam, and will be complete in 2018. The SCARF, owned and operated by the California Department of Fish and Wildlife (CDFW), will produce juveniles to assist with the development of 30,000 to 45,000 endangered spring-run Chinook salmon adults to support the Program Restoration Goal. CDFW will raise a genetically diverse population of juveniles for release in the San Joaquin River by spawning male and female fish that have the least amount of genetic similarity. Fish releases from the SCARF will be combined with other restoration actions to "restore and maintain fish populations in 'good condition,' in the mainstem 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" (Paragraph 2 of the Settlement).

Additional focus projects for 2017 include, but are not limited to:

- Purchase of two seepage easements, allowing the channel capacity to increase up to 500 cfs.
- Release of the Reach 4B/Eastside Bypass Draft EIS/R.
- Finalization of Version 2.0 of the Restoration Flow Guidelines.
- Completion of the Madera low-flow valve.
- Completion of Part III groundwater banking projects.
- Planning and design efforts to advance the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project.
- Draft Eastside Bypass Improvements Project Initial Study/Environmental Assessment.

In addition to the milestone actions described above, the Program will continue its ongoing actions, which include coordinating flow, fish, and seepage monitoring efforts; establishing channel capacity recommendations via the Channel Capacity Report; establishing Restoration Flows; and overseeing general administration of the Program. The integration of ongoing activities and upcoming milestone achievements will continue to move the Program closer to accomplishing the Five-Year Vision set forth in the Revised Framework.

SAN JOAQUIN RIVER
RESTORATION PROGRAM

2800 Cottage Way, Room W-1727
Sacramento, CA 95825

FOR MORE INFORMATION

Josh Newcom
Public Affairs Specialist
(916) 978-5109

Craig Moyle
Landowner Coordination
(916) 418-8248

Program Hotline: (800) 742-9474
www.restoresjr.net