# Appendix A
# Foundation for the Funding Constrained Framework

# San Joaquin River Restoration Program

# Foundation for the Funding Constrained Framework for Implementation

## February 12, 2018

On September 13, 2006, after more than 18 years of litigation, the plaintiffs, defendants, and the defendant interveners including Natural Resources Defense Council (NRDC), Friant Water Authority (FWA) and specific Friant Division contractors, and the U.S. Departments of the Interior and Commerce (collectively, the Settling Parties) agreed on the terms and conditions of a settlement in *NRDC, et al., v. Rodgers, et al.,* subsequently approved by the U.S. Eastern District Court of California on October 23, 2006 (Settlement). The San Joaquin River Restoration Settlement Act (Settlement Act), included in Public Law 111-11 and signed into law on March 30, 2009, authorizes and directs the Secretary of the Interior to implement the Settlement.

For various reasons the implementation of the Settlement is behind schedule and will cost more than originally anticipated. The Implementing Agencies[1], Settling Parties and affected downstream water districts and landowners (collectively referred to as the Third Parties) have held a number of meetings from August to February 2018 to address the funding challenges facing the SJRRP. The following is the general understanding reached:

- The funding identified and authorized in the Settlement Act currently is not sufficient to complete all of the actions necessary to implement the Settlement and Settlement Act (see Attachment 1 for a summary of funding sources and amounts).

- A multi-staged approach to the implementation of the Settlement and Settlement Act is necessary to fully implement the Restoration and Water Management goals.

- Achieving reintroduction and reestablishment of spring-run and fall-run Chinook salmon while implementing the protections required in the Settlement Act and the requirements of the Program Record of Decision should be the focus of a first stage.

- The first stage of the proposed approach should provide the conditions necessary for reestablishment of spring-run and fall-run Chinook salmon in the San Joaquin River between the Merced River and Friant Dam.

- If completed as described in this Foundation document, the first stage will constitute substantial steps towards implementation of the Settlement and Settlement Act.

[1] The Implementing Agencies consist of the Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and California Department of Water Resources.

- A staged approach, as described in this document, is consistent with the Settlement and Settlement Act and no modifications or amendments to the Settlement or Settlement Act are proposed to implement this approach. In addition, this approach does not in any way amend or alter the Settlement or Settlement Act, or alter the obligations in the Settlement including the obligation to fully implement the Settlement.

- The parties will use good faith efforts to obtain the funding necessary to fund completion of this first and later stages, including collectively supporting Congressional authorization of additional appropriations, in order to fully implement the Settlement and Settlement Act.

- Legislation to modify or amend the Settlement or Settlement Act, unless agreed to by the Settling Parties and Third Parties, is unnecessary and inconsistent with this Foundation document.

The Implementing Agencies have identified a staged approach that can be implemented in the near term. The first stage, Stage 1, extends from 2017 through 2024 and will generally include the following:

- Stage 1 has the primary goal of beginning the reestablishment of spring-run and fall-run Chinook salmon in the San Joaquin River between the Merced River and Friant Dam through the establishment of volitional fish passage, sufficient flows to manage temperatures, and provide for the basic habitat needs of the species.

- More specifically, Stage 1 consists of the following major construction activities (see Figure 1 for a summary of the costs and benefits of these actions, Attachment 2 for a listing and cost of all actions, and Attachment 3 for a listing of actions delayed to a future stage):
    - Construction of the Mendota Pool Bypass and fish screen;
    - Construction of sufficient levees in Reach 2B to provide floodplain habitat and channel capacity of 4,500 cubic feet per second (cfs) through Reach 2B and construction of facilities to allow the Bureau of Reclamation to make deliveries of San Joaquin River water into the Mendota Pool when necessary;
    - Completion of seepage and levee stability actions to achieve up to 2,500 cfs flow capacity through Reach 2A, Reach 3, Reach 4A, and in the Eastside Bypass from the Sand Slough Connecter north to the confluence with the San Joaquin River;
    - Construction of the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project;
    - Construction of the Salmon Conservation and Research Facility;
    - Construction of fish passage and levee improvement actions in the Eastside Bypass from the Sand Slough Connecter north to the confluence with the San Joaquin River; and,
    - All remaining funding provided to non-federal partners to move forward with the construction of the Friant-Kern Canal and Madera Canal Capacity Correction projects.

  Although not construction actions, Stage 1 will also consist of the operations of the facilities constructed along with minor projects and activities identified for funding in Attachment 2.

- Stage 1 will consume the balance of available funding. All Stage 1 actions are expected to stay within the funding amounts identified in Attachment 2. More specifically, the funds for the following major projects will be limited or "capped" for all costs though fiscal year 2024:
    - Mendota Pool Bypass, fish screen, and Reach 2B levees at $336.7 million;
    - Seepage actions to convey up to 2,500 cfs at $72.2 million; and,
    - Arroyo Canal Fish Screen and Sack Dam Fish Passage Project at $41.6 million[2].

  Any increases in costs on these projects will need to be offset by cost savings on other projects.

- Implementation of the actions identified in Stage 1 with a channel capacity of at least 2,200 cfs would make meaningful progress toward achieving fishery goals as described in the Draft 2017 *Fisheries Framework: Spring-run and Fall-run Chinook Salmon* guidance document that would be necessary to fulfill the Restoration Goal. (See Attachment 4 for more information.)

- Reclamation will continue to diligently implement Paragraphs 13 and 16 of the Settlement. More specifically, consistent with paragraph 13(i) of the Settlement, Unreleased Restoration Flows shall be managed to best achieve the Restoration Goal, and any proposal to bank, store, exchange, or sell Unreleased Restoration Flows shall be made available first to the Friant Contractors under the current Unreleased Restoration Flows program as it may change from time to time. In addition, and consistent with the Settlement, including Paragraph 16(a)(1), and the Settlement Act, Reclamation will work to ensure that any re-diversion of Restoration Flows are accounted for only as Recapture Flows for the benefit of the Friant Division.

- Additional opportunities for cost reductions, cost containment, and cost reporting mechanisms and will be identified, implemented and refined throughout this stage.

The number and focus of future stages are uncertain at this time; however, the Implementing Agencies, Settling Parties, and Third Parties will work collaboratively and in good faith to fully implement the Settlement and Settlement Act. Nothing in this approach seeks to limit full implementation of the Settlement or Settlement Act.

The approach for moving forward with the implementation of the Settlement is summarized in this document and will be expanded upon in a subsequent document, the Funding Constrained Framework for Implementation (Funding Constrained Framework), which has a target completion date of March 2018. The Implementing Agencies will work collaboratively to prepare the Funding Constrained Framework with the Settling Parties and Third Parties.

[2] Based on initial analysis conducted in parallel to this Foundation document, it is uncertain if the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project will be able to stay within the $41.6 million cost cap. Efforts on this project are being re-initiated and additional analysis, including an analysis of possible cost reduction measures, is planned. If sufficient cost reductions cannot be found, additional funds will be needed to construct this project.

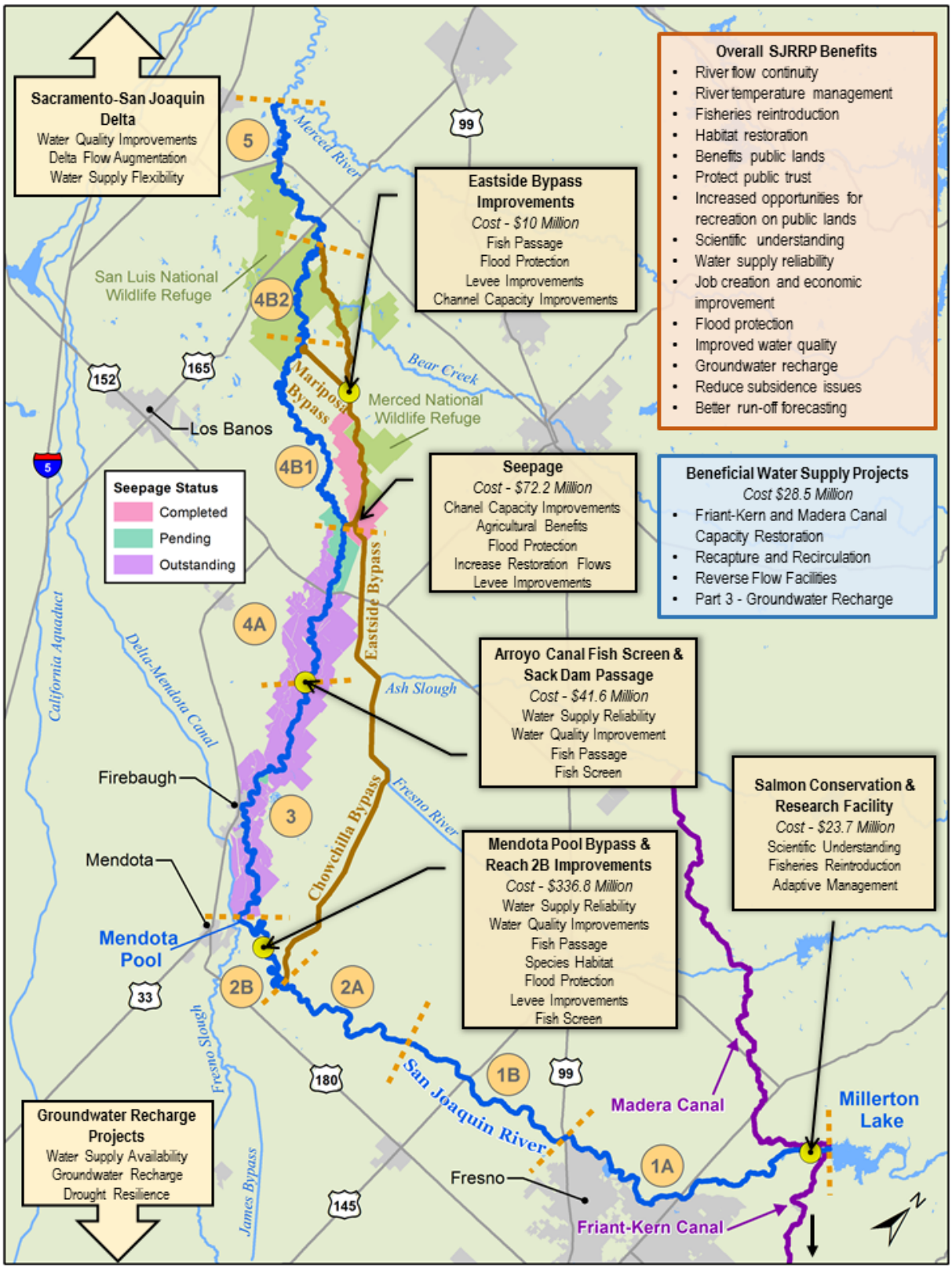


**Figure 1. Summary of Major Activities and Costs in the Foundation for the Funding Constrained Framework**

# Attachment 1
# Summary of Funding Sources and Amounts

# Summary of Funding Sources and Amounts

A summary overview of the San Joaquin River Restoration Program's (SJRRP's) funding sources remaining along with the funding needs to complete the actions identified in this Foundation document is provided below. See Chapter 3 of the Revised Framework for Implementation completed in 2015 for a more extensive description of each funding source.

## Federal Funding Sources

The San Joaquin River Restoration Settlement Act (Settlement Act), and specifically, Subtitle A, Part I, and Subtitle A, Part III – Friant Division Improvements of Public Law 111-11 identify a series of Federal funding sources for implementation of the SJRRP. These sources are described in Section 10009 and Section 10203 of Public Law 111-11 and collectively include the San Joaquin River Restoration (SJRR) Fund, Central Valley Project (CVP) Restoration Fund, and new Federal appropriations. In addition to those sources in the Settlement Act, the Bureau of Reclamation (Reclamation) also has other authorities, including the Secure Water Act, the Water Infrastructure for Improvements to the Nation (WIIN) Act, and the Fish and Wildlife Coordination Act that may be applicable to the implementation of the SJRRP.

## State Funding Sources

The State of California has committed to seek multi-benefit projects and funds equaling at least $200 million to support the implementation of the Settlement. State funds are anticipated to come from four different bond sources.

## Funding Source Remaining and Funding Needs to Complete Actions in this Foundation Document

Table 1-1 shows the summary of funding needed to implement the SJRRP actions identified in this Foundation document from Federal and State sources. Funding needs are escalated into the future and thus provided in various year dollars. Funding sources identified in the Settlement Act at October 2006 or October 2008 price levels have also been escalated into future price levels. In summary, the Federal funding need is estimated to be $540,912,000. Of this amount, $525,745,000 has been identified through existing sources, leaving a deficit of $15,166,000. The funding need designated as a State cost is $102,343,000. The State has identified $93,709,000 in funding, leaving a remaining funding of $8,634,000.

**Table 1-1. SJRRP Funding Needs and Sources to Implement the Actions Identified in this Foundation Document, FY 2017 to FY 2024 (in thousands)**

| | Funds in Various Dollars[1] |
|---|---|
| **Federal Funding Needs** | |
| Total Estimated Federal Funding Need | $540,912 |
| **Federal Funding Sources Remaining** | |
| SJRR Fund [2] | $297,730 |
| CVP Restoration Fund [3] | $16,000 |
| Federal Appropriations – Section 10009 of PL 111-11 | $211,983 |
| Federal Appropriations – Section 10203 of PL 111-11 [4] | $32 |
| Federal Appropriations – WIIN Act | $0 |
| Federal Appropriations – Fish and Wildlife Coordination Act | $0 |
| *Total Estimated Remaining Federal Funding Sources* | *$525,745* |
| **Federal Funding Remaining / (Shortfall)** | ($15,166) |
| | |
| **State Funding Needs** | |
| Total Estimated State Funding Need | $82,024 |
| Total Estimated State Funding Need with Levee Stability | $102,343 |
| **State Funding Sources Remaining** | |
| State Authorized Funding Remaining | $93,709 |
| **State Funding Remaining / (Shortfall)** | ($8,634) |

Note:

1. Funding need and sources (as authorized by law) have both been escalated into future year dollars.
2. Estimated funds accumulated in the SJRR Fund through the end of FY 2024. Includes estimated future Unreleased Restoration Flows sales, RWA sales, and Friant surcharge collections.
3. CVP Restoration Fund amounts assume an average of $2,000,000 annually, although this amount can be indexed.
4. Implementation of additional Part III groundwater banking projects is not included in Stage 1. The funding for this line reflects on the amount Reclamation would expend to complete the existing projects. However, it is important to note that there are a few years when Reclamation anticipates not being able to obligate the entire appropriations within the fiscal year. In these years, some or all of these funds could be used to implement additional Part III actions. In addition, this does not preclude Reclamation from pursuing additional appropriations for the Part III groundwater banking projects in Stage 1.

# Attachment 2
# Project and Activity Cost Summary

**Summary of SJRRP Estimated Future Activities and Costs for FY 17 to FY 24**
**Federal and State Funding Sources**
**All values in Thousands and in Various $ (Assumes 2.89% Inflation Rate)**

| Activity/Project Title | FY 17 | FY 18 | FY 19 | FY 20 | FY 21 | FY 22 | FY 23 | FY 24 | Estimated Cost (Various $) |
|---|---|---|---|---|---|---|---|---|---|
| **Administration and Program Management** | **$6,730** | **$10,772** | **$8,905** | **$9,050** | **$7,203** | **$6,013** | **$6,186** | **$5,011** | **$59,869** |
| Reclamation[1] | $1,885 | $1,845 | $1,898 | $1,953 | $1,507 | $1,034 | $1,064 | $547 | $11,734 |
| USFWS | $1,751 | $1,714 | $1,764 | $1,815 | $1,400 | $960 | $988 | $508 | $10,901 |
| NMFS | $1,029 | $1,007 | $1,036 | $1,066 | $823 | $564 | $581 | $299 | $6,405 |
| DWR | $522 | $1,124 | $1,157 | $1,190 | $706 | $726 | $747 | $768 | $6,939 |
| DFW | $1,543 | $5,081 | $3,050 | $3,026 | $2,767 | $2,728 | $2,807 | $2,888 | $23,890 |
| **Flow-Related Activities** | **$7,302** | **$7,221** | **$17,744** | **$24,196** | **$14,894** | **$20,435** | **$16,408** | **$1,403** | **$109,604** |
| ***Conservation Strategy and Flow-related Mitigation Measures*** | ***$561*** | ***$1,319*** | ***$704*** | ***$3,417*** | ***$2,977*** | ***$885*** | ***$559*** | ***$509*** | ***$10,931*** |
| Conservation Strategy | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Invasive Species Control | $0 | $0 | $0 | $1,681 | $0 | $0 | $0 | $0 | $1,681 |
| Vegetation Monitoring & Other | $51 | $0 | $0 | $59 | $0 | $0 | $65 | $0 | $175 |
| Reconsultation on Flows | $0 | $0 | $0 | $0 | $1,828 | $0 | $0 | $0 | $1,828 |
| Implement Conservation Strategy Actions for Flows | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Channel Capacity Advisory Group (Includes Erosion Monitori | $509 | $535 | $441 | $1,126 | $583 | $599 | $495 | $509 | $4,797 |
| Physical Monitoring and Management Plan Implementation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Steelhead Monitoring | $0 | $255 | $263 | $270 | $278 | $286 | $0 | $0 | $1,352 |
| Programmatic Cultural Resources Consultation | $0 | $529 | $0 | $280 | $288 | $0 | $0 | $0 | $1,098 |
| Millerton Lake Boat Ramps | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Traffic Detour Planning | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Sand Slough / Eastside Bypass Sand Removal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Flow Management and Monitoring*** | ***$908*** | ***$437*** | ***$449*** | ***$798*** | ***$821*** | ***$845*** | ***$997*** | ***$895*** | ***$6,150*** |
| Daily Flow Management and Monitoring | $79 | $86 | $89 | $91 | $94 | $97 | $99 | $102 | $737 |
| Stream Gaging | $292 | $209 | $215 | $222 | $228 | $235 | $369 | $248 | $2,019 |
| Unexpected Seepage Losses | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Unreleased Restoration Flows | $37 | $40 | $41 | $43 | $44 | $45 | $46 | $48 | $345 |
| Restoration Flow Guidelines | $33 | $34 | $35 | $36 | $37 | $38 | $39 | $40 | $289 |
| Data Management | $54 | $56 | $58 | $59 | $61 | $63 | $65 | $66 | $482 |
| MAP Actions to Inform Flow Decisions | $401 | $0 | $0 | $336 | $346 | $356 | $366 | $377 | $2,182 |
| Water Right Annual Report | $11 | $11 | $12 | $12 | $12 | $13 | $13 | $13 | $97 |
| ***Seepage Actions*** | ***$4,290*** | ***$3,454*** | ***$5,046*** | ***$17,068*** | ***$8,789*** | ***$18,705*** | ***$14,851*** | ***$0*** | ***$72,204*** |
| ***Levee Stability Actions (not a SJRRP cost)*** | ***$1,543*** | ***$2,011*** | ***$11,545*** | ***$2,913*** | ***$2,306*** | ***$0*** | ***$0*** | ***$0*** | ***$20,319*** |
| **Restoration Goal Activities** | **$25,774** | **$40,455** | **$26,777** | **$192,019** | **$56,905** | **$39,007** | **$20,307** | **$31,262** | **$432,506** |
| ***Phase I Projects*** [2] | ***$23,413*** | ***$17,431*** | ***$18,275*** | ***$187,213*** | ***$53,914*** | ***$36,648*** | ***$16,054*** | ***$26,887*** | ***$379,834*** |
| Mendota Pool Bypass, Fish Screen, and Reach 2B Levees | $22,881 | $16,875 | $18,171 | $151,450 | $48,657 | $36,502 | $15,721 | $26,544 | $336,803 |
| Reach 4B/ESB/MB Channel and Structural Improvements | $522 | $73 | $54 | $0 | $0 | $119 | $305 | $314 | $1,387 |
| Arroyo Canal Fish Screen and Sack Dam Fish Passage | $10 | $483 | $50 | $35,762 | $5,256 | $27 | $28 | $29 | $41,645 |
| Salt and Mud Slough Seasonal Barriers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Passage at Key Barriers to Migration*** | $480 | $794 | $7,086 | $2,331 | $445 | $332 | $342 | $352 | $12,161 |
| ***Phase II Projects*** | ***$325*** | ***$0*** | ***$0*** | ***$840*** | ***$865*** | ***$297*** | ***$305*** | ***$314*** | ***$2,946*** |
| Reach 4B/ESB High Flow Routing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Chowchilla Bifurcation Structure Fish Passage | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Gravel Pit Filing and/or Isolation | $325 | $0 | $0 | $840 | $865 | $297 | $305 | $314 | $2,946 |
| ***Fisheries Recolonization Activities*** | ***$1,555*** | ***$22,230*** | ***$1,416*** | ***$1,635*** | ***$1,682*** | ***$1,731*** | ***$3,606*** | ***$3,710*** | ***$37,565*** |
| Conservation Facility Construction (DFW cost) | $0 | $20,854 | $0 | $0 | $0 | $0 | $0 | $0 | $20,854 |
| Conservation Facility Water Supply Line (Reclamation cost) | $617 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $617 |
| Conservation Facility Operations and Maintenance | $720 | $783 | $806 | $829 | $853 | $878 | $3,051 | $3,139 | $11,060 |
| Donor Stock Collection | $0 | $90 | $92 | $272 | $280 | $288 | $297 | $305 | $1,625 |
| Trap and Haul (short-term and as needed) | $0 | $280 | $288 | $296 | $305 | $314 | $0 | $0 | $1,482 |
| Genetics Monitoring | $218 | $224 | $230 | $237 | $244 | $251 | $258 | $266 | $1,927 |
| Segregation Actions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Paragraph 12 Activities*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| **Water Management Goal Activities** | **$1,275** | **$8,430** | **$6,266** | **$17,596** | **$1,316** | **$1,354** | **$1,393** | **$1,434** | **$39,066** |
| Water Management Goal Oversight[3] | $1,235 | $1,209 | $1,244 | $1,279 | $1,316 | $1,354 | $1,393 | $1,434 | $10,464 |
| Recapture and Recirculation Activities[4] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Friant-Kern and Madera Canal Capacity Restoration[5] | $25 | $7,200 | $5,000 | $16,305 | $0 | $0 | $0 | $0 | $28,530 |
| Reverse Flow Facilities[6] | $5 | $11 | $12 | $12 | $0 | $0 | $0 | $0 | $40 |
| Financial Assistance for Friant Division Improvements | $10 | $11 | $11 | $0 | $0 | $0 | $0 | $0 | $32 |
| **Miscellaneous and/or Opportunistic Actions** | **$189** | **$265** | **$272** | **$280** | **$288** | **$297** | **$305** | **$314** | **$2,210** |
| **Total Estimated Federal Funding Need** | **$41,270** | **$67,143** | **$59,964** | **$243,142** | **$80,606** | **$67,106** | **$44,599** | **$39,424** | **$643,255** |

Notes and Assumptions:

1. Includes Program-wide activities including public outreach (annual report, Quarterly Updates, and similar) and data management.
2. Costs for the Phase I Projects are based on design estimates. Actual costs for individual projects will vary as implementation progresses and projects progress through the design stages. Includes the following for each project: environmental compliance efforts; planning and design; public outreach; land acquisition; pre and during construction mitigation measures; construction; post-construction mitigation measures and performance monitoring, and long-term operations and maintenance, if applicable. Assumes costs are obligated in these years, actual construction may take longer. All construction costs are indexed to June 2017 dollars.
3. Includes annual recapture and recirculation actions and managing Recovered Water Accounts.
4. Moved into a future phase. Includes additional funding for expaned recapture opportunities.
5. Assumes through completion of Madera Canal Capacity Correction Project environmental compliance. Moves implementation costs out to a future phase.
6. Reverse flow facilities are not included as part of the Core Program in the June 2012 Framework for Implementation. These costs are for managing the Secure Water Act - Drought Relief funded project.

Updated: 2/11/2018

**Summary of SJRRP Estimated Future Federal Activities and Costs for FY 17 to FY 24**
**All values in Thousands and in Various $ (Assumes 2.89% Inflation Rate)**

| Activity/Project Title | FY 17 | FY 18 | FY 19 | FY 20 | FY 21 | FY 22 | FY 23 | FY 24 | Total Estimated Cost (Various $) |
|---|---|---|---|---|---|---|---|---|---|
| **Administration and Program Management** | **$4,665** | **$4,567** | **$4,699** | **$4,834** | **$3,730** | **$2,559** | **$2,633** | **$1,354** | **$29,040** |
| Reclamation[1] | $1,885 | $1,845 | $1,898 | $1,953 | $1,507 | $1,034 | $1,064 | $547 | $11,734 |
| USFWS | $1,751 | $1,714 | $1,764 | $1,815 | $1,400 | $960 | $988 | $508 | $10,901 |
| NMFS | $1,029 | $1,007 | $1,036 | $1,066 | $823 | $564 | $581 | $299 | $6,405 |
| DWR | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| DFW | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Flow-Related Activities** | **$4,786** | **$4,604** | **$5,685** | **$19,746** | **$11,582** | **$19,401** | **$15,465** | **$434** | **$81,704** |
| ***Conservation Strategy and Flow-related Mitigation Measures*** | ***$57*** | ***$790*** | ***$268*** | ***$2,296*** | ***$2,401*** | ***$292*** | ***$71*** | ***$7*** | ***$6,181*** |
| Conservation Strategy | | | | | | | | | |
| Invasive Species Control | $0 | $0 | $0 | $1,681 | $0 | $0 | $0 | $0 | $1,681 |
| Vegetation Monitoring & Other | $51 | $0 | $0 | $59 | $0 | $0 | $65 | $0 | $175 |
| Reconsultation on Flows | $0 | $0 | $0 | $0 | $1,828 | $0 | $0 | $0 | $1,828 |
| Implement Conservation Strategy Actions for Flows | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Channel Capacity Advisory Group (Includes Erosion Monitoring) | $5 | $6 | $6 | $6 | $6 | $6 | $6 | $7 | $48 |
| Physical Monitoring and Management Plan Implementation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Steelhead Monitoring | $0 | $255 | $263 | $270 | $278 | $286 | $0 | $0 | $1,352 |
| Programmatic Cultural Resources Consultation | $0 | $529 | $0 | $280 | $288 | $0 | $0 | $0 | $1,098 |
| Millerton Lake Boat Ramps | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Traffic Detour Planning | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Sand Slough / Eastside Bypass Sand Removal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Flow Management and Monitoring*** | ***$439*** | ***$360*** | ***$371*** | ***$381*** | ***$392*** | ***$404*** | ***$543*** | ***$427*** | ***$3,318*** |
| Daily Flow Management and Monitoring | $79 | $86 | $89 | $91 | $94 | $97 | $99 | $102 | $737 |
| Stream Gaging | $224 | $133 | $137 | $141 | $145 | $149 | $281 | $158 | $1,369 |
| Unexpected Seepage Losses | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Unreleased Restoration Flows | $37 | $40 | $41 | $43 | $44 | $45 | $46 | $48 | $345 |
| Restoration Flow Guidelines | $33 | $34 | $35 | $36 | $37 | $38 | $39 | $40 | $289 |
| Data Management | $54 | $56 | $58 | $59 | $61 | $63 | $65 | $66 | $482 |
| MAP Actions to Inform Flow Decisions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Water Right Annual Report | $11 | $11 | $12 | $12 | $12 | $13 | $13 | $13 | $97 |
| ***Seepage Actions*** | ***$4,290*** | ***$3,454*** | ***$5,046*** | ***$17,068*** | ***$8,789*** | ***$18,705*** | ***$14,851*** | ***$0*** | ***$72,204*** |
| ***Levee Stability Actions (not a SJRRP cost)*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| **Restoration Goal Activities** | **$24,734** | **$18,749** | **$19,747** | **$190,495** | **$55,706** | **$38,248** | **$16,292** | **$27,131** | **$391,102** |
| ***Phase I Projects***[2] | ***$23,148*** | ***$17,373*** | ***$18,215*** | ***$187,202*** | ***$53,902*** | ***$36,518*** | ***$15,737*** | ***$26,560*** | ***$378,655*** |
| Mendota Pool Bypass, Fish Screen, and Reach 2B Levees[3] | $22,881 | $16,870 | $18,166 | $151,439 | $48,646 | $36,490 | $15,709 | $26,532 | $336,733 |
| Reach 4B/ESB/MB Channel and Structural Improvements | $257 | $20 | $0 | $0 | $0 | $0 | $0 | $0 | $277 |
| Arroyo Canal Fish Screen and Sack Dam Fish Passage | $10 | $483 | $50 | $35,762 | $5,256 | $27 | $28 | $29 | $41,645 |
| Salt and Mud Slough Seasonal Barriers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Passage at Key Barriers to Migration*** | ***$31*** | ***$0*** | ***$115*** | ***$1,659*** | ***$122*** | ***$0*** | ***$0*** | ***$0*** | ***$1,926*** |
| ***Phase II Projects*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| Reach 4B/ESB High Flow Routing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Chowchilla Bifurcation Structure Fish Passage | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Gravel Pit Filing and/or Isolation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Fisheries Recolonization Activities*** | ***$1,555*** | ***$1,377*** | ***$1,416*** | ***$1,635*** | ***$1,682*** | ***$1,731*** | ***$555*** | ***$571*** | ***$10,521*** |
| Conservation Facility Construction (DFW cost) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Conservation Facility Water Supply Line (Reclamation cost) | $617 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $617 |
| Conservation Facility Operations and Maintenance | $720 | $783 | $806 | $829 | $853 | $878 | $0 | $0 | $4,870 |
| Donor Stock Collection | $0 | $90 | $92 | $272 | $280 | $288 | $297 | $305 | $1,625 |
| Trap and Haul (short-term and as needed) | $0 | $280 | $288 | $296 | $305 | $314 | $0 | $0 | $1,482 |
| Genetics Monitoring | $218 | $224 | $230 | $237 | $244 | $251 | $258 | $266 | $1,927 |
| Segregation Actions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Paragraph 12 Activities*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| **Water Management Goal Activities** | **$1,275** | **$8,430** | **$6,266** | **$17,596** | **$1,316** | **$1,354** | **$1,393** | **$1,434** | **$39,066** |
| Water Management Goal Oversight[3] | $1,235 | $1,209 | $1,244 | $1,279 | $1,316 | $1,354 | $1,393 | $1,434 | $10,464 |
| Recapture and Recirculation Activities[4] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Friant-Kern and Madera Canal Capacity Restoration[5] | $25 | $7,200 | $5,000 | $16,305 | $0 | $0 | $0 | $0 | $28,530 |
| Reverse Flow Facilities[6] | $5 | $11 | $12 | $12 | $0 | $0 | $0 | $0 | $40 |
| Financial Assistance for Friant Division Improvements | $10 | $11 | $11 | $0 | $0 | $0 | $0 | $0 | $32 |
| **Miscellaneous and/or Opportunistic Actions** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| **Total Estimated Federal Funding Need** | **$35,460** | **$36,350** | **$36,396** | **$232,671** | **$72,335** | **$61,562** | **$35,783** | **$30,353** | **$540,912** |

Notes and Assumptions:

1. Includes Program-wide activities including public outreach (annual report, Quarterly Updates, and similar) and data management.
2. Costs for the Phase I Projects are based on design estimates. Actual costs for individual projects will vary as implementation progresses and projects progress through the design stages. Includes the following for each project: environmental compliance efforts; planning and design; public outreach; land acquisition; pre and during construction mitigation measures; construction; post-construction mitigation measures and performance monitoring, and long-term operations and maintenance, if applicable. Assumes costs are obligated in these years, actual construction may take longer. All construction costs are indexed to June 2017 dollars.
3. Includes annual recapture and recirculation actions and managing Recovered Water Accounts.
4. Moved into a future phase. Includes additional funding for expaned recapture opportunities.
5. Assumes through completion of Madera Canal Capacity Correction Project environmental compliance. Moves implementation costs out to a future phase.
6. Reverse flow facilities are not included as part of the Core Program in the June 2012 Framework for Implementation. These costs are for managing the Secure Water Act - Drought Relief funded project.

**Summary of SJRRP Estimated Future State Activities and Costs for FY 17 to FY 24**
**All values in Thousands and in Various $ (Assumes 2.89% Inflation Rate)**

| Activity/Project Title | FY 17 | FY 18 | FY 19 | FY 20 | FY 21 | FY 22 | FY 23 | FY 24 | Total Estimated Cost (Various $) |
|---|---|---|---|---|---|---|---|---|---|
| **Administration and Program Management** | **$2,065** | **$6,205** | **$4,206** | **$4,216** | **$3,473** | **$3,454** | **$3,554** | **$3,656** | **$30,829** |
| Reclamation[1] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| USFWS | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| NMFS | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| DWR | $522 | $1,124 | $1,157 | $1,190 | $706 | $726 | $747 | $768 | $6,939 |
| DFW | $1,543 | $5,081 | $3,050 | $3,026 | $2,767 | $2,728 | $2,807 | $2,888 | $23,890 |
| **Flow-Related Activities** | **$2,517** | **$2,617** | **$12,059** | **$4,451** | **$3,311** | **$1,034** | **$942** | **$969** | **$27,900** |
| ***Conservation Strategy and Flow-related Mitigation Measures*** | ***$504*** | ***$529*** | ***$436*** | ***$1,121*** | ***$576*** | ***$593*** | ***$488*** | ***$502*** | ***$4,750*** |
| Conservation Strategy | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | |
| Invasive Species Control | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Vegetation Monitoring & Other | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Reconsultation on Flows | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Implement Conservation Strategy Actions for Flows | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Channel Capacity Advisory Group (Includes Erosion Monitoring) | $504 | $529 | $436 | $1,121 | $576 | $593 | $488 | $502 | $4,750 |
| Physical Monitoring and Management Plan Implementation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Steelhead Monitoring | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Programmatic Cultural Resources Consultation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Millerton Lake Boat Ramps | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Traffic Detour Planning | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Sand Slough / Eastside Bypass Sand Removal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Flow Management and Monitoring*** | ***$469*** | ***$76*** | ***$78*** | ***$417*** | ***$429*** | ***$441*** | ***$454*** | ***$467*** | ***$2,832*** |
| Daily Flow Management and Monitoring | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Stream Gaging | $68 | $76 | $78 | $81 | $83 | $85 | $88 | $90 | $650 |
| Unexpected Seepage Losses | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Unreleased Restoration Flows | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Restoration Flow Guidelines | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Data Management | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| MAP Actions to Inform Flow Decisions | $401 | $0 | $0 | $336 | $346 | $356 | $366 | $377 | $2,182 |
| Water Right Annual Report | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Seepage Actions*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| ***Levee Stability Actions (not a SJRRP cost)*** | ***$1,543*** | ***$2,011*** | ***$11,545*** | ***$2,913*** | ***$2,306*** | ***$0*** | ***$0*** | ***$0*** | ***$20,319*** |
| **Restoration Goal Activities** | **$1,039** | **$21,706** | **$7,030** | **$1,524** | **$1,199** | **$759** | **$4,015** | **$4,131** | **$41,404** |
| ***Phase I Projects*** [2] | ***$264*** | ***$58*** | ***$60*** | ***$11*** | ***$12*** | ***$130*** | ***$317*** | ***$326*** | ***$1,180*** |
| Mendota Pool Bypass, Fish Screen, and Reach 2B Levees | $0 | $5 | $5 | $11 | $12 | $12 | $12 | $13 | $70 |
| Reach 4B/ESB/MB Channel and Structural Improvements | $264 | $53 | $54 | $0 | $0 | $119 | $305 | $314 | $1,109 |
| Arroyo Canal Fish Screen and Sack Dam Fish Passage | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Salt and Mud Slough Seasonal Barriers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Passage at Key Barriers to Migration*** | $450 | $794 | $6,970 | $672 | $323 | $332 | $342 | $352 | ***$10,234*** |
| ***Phase II Projects*** | ***$325*** | ***$0*** | ***$0*** | ***$840*** | ***$865*** | ***$297*** | ***$305*** | ***$314*** | ***$2,946*** |
| Reach 4B/ESB High Flow Routing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Chowchilla Bifurcation Structure Fish Passage | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Gravel Pit Filing and/or Isolation | $325 | $0 | $0 | $840 | $865 | $297 | $305 | $314 | $2,946 |
| ***Fisheries Recolonization Activities*** | ***$0*** | ***$20,854*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$3,051*** | ***$3,139*** | ***$27,044*** |
| Conservation Facility Construction (DFW cost) | $0 | $20,854 | $0 | $0 | $0 | $0 | $0 | $0 | $20,854 |
| Conservation Facility Water Supply Line (Reclamation cost) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Conservation Facility Operations and Maintenance | $0 | $0 | $0 | $0 | $0 | $0 | $3,051 | $3,139 | $6,190 |
| Donor Stock Collection | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Trap and Haul (short-term and as needed) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Genetics Monitoring | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Segregation Actions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| ***Paragraph 12 Activities*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| **Water Management Goal Activities** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| Water Management Goal Oversight[3] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Recapture and Recirculation Activities[4] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Friant-Kern and Madera Canal Capacity Restoration[5] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Reverse Flow Facilities[6] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Financial Assistance for Friant Division Improvements | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Miscellaneous and/or Opportunistic Actions** | **$189** | **$265** | **$272** | **$280** | **$288** | **$297** | **$305** | **$314** | **$2,210** |
| **Total Estimated Federal Funding Need** | **$5,810** | **$30,793** | **$23,567** | **$10,471** | **$8,271** | **$5,544** | **$8,816** | **$9,071** | **$102,343** |

Notes and Assumptions:

1. Includes Program-wide activities including public outreach (annual report, Quarterly Updates, and similar) and data management.
2. Costs for the Phase I Projects are based on design estimates. Actual costs for individual projects will vary as implementation progresses and projects progress through the design stages. Includes the following for each project: environmental compliance efforts; planning and design; public outreach; land acquisition; pre and during construction mitigation measures; construction; post-construction mitigation measures and performance monitoring, and long-term operations and maintenance, if applicable. Assumes costs are obligated in these years, actual construction may take longer. All construction costs are indexed to June 2017 dollars.
3. Includes annual recapture and recirculation actions and managing Recovered Water Accounts.
4. Moved into a future phase. Includes additional funding for expaned recapture opportunities.
5. Assumes through completion of Madera Canal Capacity Correction Project environmental compliance. Moves implementation costs out to a future phase.
6. Reverse flow facilities are not included as part of the Core Program in the June 2012 Framework for Implementation. These costs are for managing the Secure Water Act - Drought Relief funded project.

# Attachment 3
# List of Actions Delayed to a Future Stage

# List of Actions Delayed to a Future Stage

The following actions would be delayed to a future stage (paragraph number references refer to paragraph numbers in the Stipulation of Settlement in *NRDC, et al., v. Rodgers, et al.)*:

- Flow Actions
  - Re-consultation on Flows for Restoration Flow releases greater than about 2,500 cubic feet per second (cfs) in Reach 2A
  - Acquisition of Unexpected Seepage Loss water
  - Boat Launch Ramps
  - Traffic Detour Planning
  - Seepage and levee stability projects above 2,500 cfs*
- Channel and Structural Improvements
  - Land acquisition, permitting, final design, and construction of the Reach 4B, Eastside Bypass and Mariposa Bypass Channel and Structural Improvements Project*
  - Planning, design, and construction of the Salt and Mud Slough Barriers Project
  - Planning, design, and construction of the following projects: identify the highest priority gravel pits in Reach 1 (Paragraph 11(b)(3))*; modifications to the Chowchilla Bypass Bifurcation Structure to provide fish passage and prevent entrainment (Paragraph 11(b)(2))*; modifications to the San Joaquin River Control Structure to provide fish passage and prevent entrainment (beyond notching the sill and removing the trash rack which are anticipated to be completed in Stage 1)*
  - Planning and construction of Paragraph 12 Projects*
- Fish Recolonization
  - Developing a phasing out strategy for the Conservation Facility and annual spring-run donor stock collection and tagging
  - Phase out Conservation Facility and donor stock collection
- Water Management Goal and Friant Division Improvements
  - Additional recapture and recirculation opportunities
  - Investment Strategy Projects
  - New Financial Assistance for Groundwater Banking projects

* The California Department of Water Resources (DWR) may have available funds beyond their commitments in this Foundation document. DWR plans to use their remaining funds to continue to support restoration actions by conducting studies and implementing small projects that continue to improve the success of a naturally-reproducing, self-sustaining salmon fishery. The items with an asterisk above may be continued by the DWR as funds are available.

One or more of these projects could be implemented to the extent that funding is available that does not impede implementation of the agreed upon Stage 1 actions. This may be completed through the use of other funding sources and/or cost savings within the Stage 1 actions.

# Attachment 4
# Reestablishment of Salmon Populations

# Reestablishment of Salmon Populations

This Foundation document seeks to align San Joaquin River Restoration Program (SJRRP) actions with likely funding to implement a staged approach that: (1) meets reduced funding targets; (2) makes meaningful progress toward fisheries reintroduction and reestablishment; and (3) meets other goals and requirements that maintain a viable SJRRP.

The Bureau of Reclamation, in coordination with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and California Department of Water Resources, analyzed the minimum flow rate and associated channel capacity that would allow for meaningful progress toward reintroduction and reestablishment of spring-run and fall-run Chinook salmon in the San Joaquin River between Friant Dam and the Merced River. This effort examined several flow scenarios to compare fish habitat objectives with channel capacity and is further described in the "Analysis of Physical Flow Characteristics Supportive of Chinook Salmon to Inform Channel Capacity Selection in the Funding Constrained Framework" (in draft).

Implementation of the actions identified in Stage 1 with a channel capacity of at least 2,200 cubic feet per second would make meaningful progress toward achieving fishery goals as described in the Draft 2017 *Fisheries Framework: Spring-run and Fall-run Chinook Salmon* guidance document that would be necessary to fulfill the Restoration Goal (SJRRP, 2017). Specifically, the SJRRP's fisheries experts believe implementation of Stage 1 will provide significant benefits for fish in the following ways:

- Provide volitional upstream and downstream passage for multiple native fish species by addressing existing fish passage barriers and constructing fish passage structures.

- During the proper seasonal timing, increase the inundation rate and duration of floodplain rearing habitats for juvenile Chinook salmon and other native fishes.

- Provide conveyance for the complete range of Restoration Flows during Normal-Dry and drier year types, and a significant portion of Restoration Flows specified in the Normal-Wet and Wet year types by addressing seepage limitations and increasing levee capacity.

- Maintain some flexibility to release somewhat higher flows to better control water temperature throughout the Restoration Area, the area from Friant Dam to the Merced River confluence, and, thereby, work to support all Chinook salmon life stages in multiple water year types.

- Protect fish from being entrained by constructing fish screens at the two largest irrigation diversions in the Restoration Area.

However, the long-term 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 — cannot be fully met without implementation of all of the provisions of the

Stipulation of Settlement in *NRDC, et al., v. Rodgers, et al* (Settlement). The Funding Constrained Framework defers important elements of the Settlement and the San Joaquin River Restoration Settlement Act, including:

- Development of conveyance capacity for the remaining range of Restoration Flows, temperature control in all water year types, and further development of riparian habitats through water operations.

- The decision on how to route Restoration Flows in Reach 4B and the associated report to Congress.

- Completion of Paragraph 11(b) and Paragraph 12 actions to further the Restoration Goal.

References:

San Joaquin River Restoration Program (SJRRP). 2017. Fisheries Framework: Spring-run and Fall-run Chinook Salmon. Draft. June.