

RECLAMATION

Managing Water in the West

Mid-Pacific Region

Central Valley Project Water Plan 2014



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

February 3, 2014

TABLE OF CONTENTS

INTRODUCTION	5
Drought Update	6
NEAR-TERM ACTIONS 2014	7
Operational Flexibility Within the Existing Biological Opinion.....	7
Old and Middle River Index	7
Estimation Method Based on New Range of Years for the Adult Delta Smelt Incidental Take Statement.....	7
New and Refined Turbidity Models	8
San Joaquin River (SJR) Inflow to Export (I:E) Ratio	8
Operational Flexibility	8
Flexibility Agreement.....	8
Water Transfers	9
Streamline Water Transfer Approval Process	9
Use of Warren Act Contracts to Facilitate Water Supplies.....	9
Refuges and Fisheries	10
San Joaquin River Restoration Program Flows – Recapture and Recirculation Plan	10
Lower Klamath River Fall Flows for Fall-run Chinook Salmon	11
Refuge Water Supply	11
Golden Gate Salmon Association (GGSA) Projects	12
Coordination	13
Coordination and Forecasting.....	13
Improve Hatchery Operational Coordination with North of Delta Diversers	13
Folsom Intake Protection	13
Relief from Water Quality Objectives.....	13
Water Acquisitions	14
Acquire Non-CVP Water for CVP Purposes	14
Component 1 (C1) Water.....	15
Response to Drought	15
Public Health and Safety	15
Rescheduling Water in San Luis Reservoir.....	15
San Joaquin River Restoration Program - Ceasing Restoration Flows Early.....	15
Additional Short-Term Mitigating Measures.....	16
North of Delta Water Management	16
MEDIUM-TERM ACTIONS (BEYOND WATER YEAR 2014)	17
Refuges and Fisheries	17
Refuge Water Supply.....	17
Coordination	18
Rice Straw Decomposition.....	18
Operational Flexibility with the Existing Biological Opinions	18
Population Dynamics Modeling to Revise Adult Delta Smelt Incidental Take Statement	18
Salmonid Genetic Testing	18
Water Transfers	19
Long-Term Water Transfer Process.....	19
San Joaquin River I:E Experiment.....	19

List of Tables

Water Year 2014, Estimated Benefit for Near-Term Action Categories	12
--	----

INTRODUCTION

Low reservoir storages at the start of Water Year 2014, and the potential for continued dry hydrologic conditions into the coming water year, coupled with significant protective actions for threatened fish populations and the need to maintain adequate water quality standards under state law, could present serious water supply challenges for many parts of California. The January-May period in 2013 was the driest January-May period on record for the Central Valley; conditions remain dry with the October 2013 inflow to Shasta Lake near the lowest for any month on record; and the National Weather Service's Season Drought Project indicates persistent drought conditions for the Central Valley and Sierra Nevada for the next 90 days. For these reasons, it is imperative that Reclamation, our customers, and our stakeholders be prepared to face these challenges. The aim of the Draft 2014 Water Plan is to minimize the negative impacts to affected Central Valley Project (CVP) customers and stakeholders associated with a possible dry 2014 water year. The draft Plan is the product of Reclamation's ongoing assessment of the water supply situation and the cumulative input from the 2013/2014 water year meetings with customers and stakeholders.

The 2013/2014 water year meetings were conducted over a several week period in June 2013, and continued into early September 2013 to discuss current CVP water operations and ongoing water supply challenges. Customers and stakeholders provided items for Reclamation's consideration and we provided regular updates throughout the summer. The result was a list of suggested actions from agriculture, Municipal and Industrial (M&I), tribal, fisheries, other environmental, power and refuge interests. We were clear that this list was reflective of actions that Reclamation would consider for inclusion in the Plan; it was not a commitment to carry any particular action.

This Plan is Reclamation's attempt to identify actions based on those items suggested by our customers and stakeholders, deemed to provide the greatest potential to address adverse water supply impacts in 2014 while maintaining environmental commitments, based on:

- Resources available to carry out the action,
- The schedule necessary to achieve anticipated benefits, and
- The likelihood to achieve the expected benefits

We have developed a list of proposed actions, and associated timelines, that we anticipate can be implemented during the 2014 water year, absent changed conditions, unforeseen barriers or unanticipated circumstances, and we call these near-term. We will continue to assess and update the timeline for these projects as we define the scope and permit needs of each project. This leaves a broad array of actions that, due to limited resources, environmental and permitting prerequisites, or other implementing difficulties, preclude implementation in the 2014 water year. Many of these items are included in the Medium Term Actions section of this document (see page 17).

The Plan focuses on actions that are achievable, that provide operational flexibility, and that are value added to CVP operations as a whole. The actual benefits realized through these actions will be highly dependent on actual hydrologic conditions throughout the State this coming water year. As conditions change, Reclamation will continuously be reevaluating our planned actions and will adjust accordingly.

Many of the actions on the list fall into the category of operational flexibility as it relates to the existing biological opinions (BOs). The term "operational flexibility" can be defined as the ability to manage existing water supplies

Introduction

efficiently and effectively, consistent with the project authorizations and objectives, while adapting to changes in regulatory, physical, and hydrologic conditions. Improved operational flexibility can result in, the most efficient system operation, increased water yield and increased ability to meet project needs under a range of potential conditions.

As operational flexibility relates to the incidental take levels and reasonable and prudent alternative actions in the current BOs for both the Delta smelt and salmonid species, Reclamation is working to coordinate and collaborate with the Federal resource agencies, as well as the California Departments of Fish and Wildlife (DFW) and Water Resources (DWR), to develop processes and data to identify and take advantage of any opportunities to improve operational flexibility within the BOs. Opportunities include improvements to the current processes that are used by the following interagency groups that play a role in managing real-time operations: the Smelt Working Group, the Delta Operations for Salmonids and Sturgeon, and the Water Operations Management Team. The ultimate goal is to maximize operational flexibility, while not causing jeopardy or modification of critical habitat to Federally-listed species.

Due to other regulatory requirements outside of the BOs that can constrain Delta operations at times throughout year, the range of possible hydrological conditions and without knowing the timing and distribution of sensitive fish populations that will occur in the winter and spring, Reclamation cannot predict the actual water yield benefits of improving operational flexibility within the specific requirements of the BOs. In addition, other constraints, including State Water Resources Control Board (SWRCB) requirements for water quality, salinity, and/or Delta outflow, can be important factors that govern

Delta and upstream operations. As conditions dictate, Reclamation will collaborate with other Federal and State agencies, including the SWRCB to gain concurrence on a path forward that makes the best use of limited water resources.

Drought Update

Following two years of dry conditions, on Jan. 17, Governor Edmund G. Brown Jr. proclaimed a Drought State of Emergency. Subsequently, the Departments of the Interior, Agriculture, and Commerce jointly announced their roles in helping California prepare for and lessen drought impacts through the National Drought Resilience Partnership (NDRP). Current severe dry conditions are considered the worst in 160 years of record keeping, even surpassing the previous driest years of 1976-1977 when California population was 22 million; today the population is 38 million. In response to the drought, additional actions are underway.

The Plan has been updated to outline additional measures we are taking to respond to the drought. In coordination with the State, Reclamation is making it a priority to operate the CVP to first meet public health and safety needs as well as legal requirements while ensuring the best possible use of limited water supplies, and focusing on conservation actions, and offering support and flexibility to customers in managing the drought. The Response to Drought section outlines several actions that were initiated since the draft Plan was released in November 2013. There is a tremendous amount of work that has to happen in the weeks and months ahead, and it is going to take the focus and support of many to address the difficult conditions, and continue to make the best possible, most balanced decision on the key issues facing the CVP.

NEAR-TERM ACTIONS 2014

Operational Flexibility Within the Existing Biological Opinion

Old and Middle River Index

Develop and implement a pilot project to test using an index rather than tidally-filtered United States Geological Survey (USGS) gauge data at OMR to determine OMR negative flow.

Develop and implement a pilot project to test using an index rather than tidally filtered United States Geological Survey (USGS) gauge data at OMR to determine OMR negative flow.

The initial proposal was reviewed by the fishery agencies and comments were provided to Reclamation. Reclamation is developing a scope of work (SOW) for work needed to respond to the comments. The SOW will be implemented by the Federal water contractors and include gathering data and preparing a report documenting why the proposal does not adversely affect the species and is in compliance with the existing BOs. Reclamation plans to provide the report to the fisheries agencies around February 14, 2014. The timeframe for the fisheries agencies review will be determined based on the relevancy of the OMR ratio in mid-February. The pilot project could be implemented in 2014 if appropriate hydrologic conditions exist.

During the pilot project implementation Reclamation and DWR will operate to the OMR objective using an index based on San Joaquin River flow. Operations would return to use of the tidally-filtered OMR values if the difference between the tidally-filtered values and index values exceed a certain limit. This limit will be determined in cooperation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) as the plan is finalized.

Parties Involved

Reclamation, USFWS, NMFS, DWR, State and Federal contractors and environmental stakeholders.

Timeline for Benefits to be Derived

There is some potential to realize a water benefit during the winter while the experiment is implemented. However, current hydrologic conditions in 2014 do not require OMR restrictions.

Benefits

From an operational standpoint, this action could result in a more predictable response to changing conditions in the Delta.

Estimation Method Based on New Range of Years for the Adult Delta Smelt Incidental Take Statement

Develop a new cumulative salvage index calculation for determining cumulative expanded salvage, using years in addition to the existing 2006-2008 range.

The current incidental take statement (ITS) calculates the incidental take limit (ITL) based on the cumulative expanded salvage (CES) from 2006-2008. The State and Federal water contractors (SFWC) are preparing a new calculation utilizing a number of different years to calculate the CES. SFWC and Reclamation are working closely to develop a comprehensive proposal to submit to USFWS. If approved this calculation will be used in 2015.

Parties Involved

Reclamation, USFWS, State and Federal water contractors, and environmental stakeholders.

Timeline for Benefits to be Derived

The SFWC provided a proposal for review by Reclamation and the USFWS. Over the next few months Reclamation, SFWC and the resources agencies will be working on the new calculation. Reclamation is committed to working with SFWC and USFWS to develop the new calculation for use in 2015.

Near-Term Actions 2014

Benefits

The use of multiple years in calculating the CES will provide a more comprehensive approach to calculating the CES. This will provide greater operational flexibility.

New and Refined Turbidity Models

For predicting Delta smelt salvage, continue to refine and improve existing models to predict turbidity conditions that lead to entrainment events, and determine the magnitude of the conditions that create a “turbidity” bridge for the Delta smelt’s movement between the central Delta and the export pumps. The existing model will continue to be improved and if a turbidity event occurs, the model will be used to predict the possibility of a turbidity bridge developing.

In addition to the model, in order to better track smelt movement, monitoring efforts are being planned for 2014. Information for these additional samplings will help track Smelt movements in Suisun Marsh and the central Delta, inform pumping decisions and provide data for use in the turbidity model.

Parties Involved

USFWS is working closely with Metropolitan Water District (MWD) and DWR as well as Reclamation and other environmental stakeholders.

Timeline for Benefits to be Derived

Benefits will be the greatest during the smelt migration period. Smelt migration is generally triggered by flow and turbidity events that occur between December and June. The model is ready and will be applied as the opportunity arises in 2014.

Benefits

If operations can be modified to avoid a turbidity bridge within the central and south Delta, the adult smelt would more likely move up the Sacramento River rather than moving into the central and south Delta. Smelt that are located in the Sacramento River are at a lower risk of entrainment than those in the central and south Delta. This reduces the risk that exports would be curtailed due to smelt presence. Under current hydrologic conditions the use of the modelling tool may not be needed this year.

San Joaquin River (SJR) Inflow to Export (I:E) Ratio

Determine 2014 San Joaquin River I:E ratio in February in advance of the May 1 DWR runoff forecast for San Joaquin Valley.

Typically the I:E ratio would be determined using the May 1 DWR runoff forecast. The May forecast determines the San Joaquin Valley year type classification which determines the I:E ratio. This early San Joaquin River I:E ratio determination will be based on the DWR January runoff forecast, consideration of NOAA weather forecasts, and expert opinion.

Parties Involved

NMFS, FWS, Reclamation, DWR.

Timeline for Benefits to be Derived

Based on DWR’s January forecast and the current hydrologic conditions, Reclamation is forecasting a critically-dry water year type classification. As such Reclamation expects that the I:E ratio for water year 2014 to be set at 1:1 for benefits to occur February - May 2014

Benefits

Under the current hydrologic conditions an early determination of the I:E ratio will provide additional operational flexibility. It provides some certainty that exports could equal inflow from the San Joaquin River.

Operational Flexibility

Flexibility Agreement

Reclamation and the San Joaquin River Exchange Contractors (Exchange Contractors) entered into a Flexibility Agreement to improve San Luis Reservoir and Delta operations while allowing greater flexibility in the Exchange Contractors’ contract-specified monthly delivery quantities. The exchange contractors use alternative sources of water supply (groundwater and other conserved water) early in the year to delay use of CVP surface water supplies from the Delta and San Luis Reservoir. That water can then be used to meet demands of other CVP contractors.

Parties Involved

San Joaquin River Exchange Contractors and Reclamation.

Timeline for Benefits to be Derived

Annual benefits obtained during the early and peak irrigation season for both the San Joaquin River Exchange Contractors and CVP south-of-Delta water contractors.

Benefits

Potentially provides up to 10,000 acre-feet for delivery to CVP water service contractors on the west side of the San Joaquin Valley during early and peak irrigation. It is not an increase in supply, but a demand shift providing flexibility in deliveries.

Water Transfers**Streamline Water Transfer Approval Process**

Further streamline Reclamation's process for final approval of water transfers process by providing an e-Brochure package and tracking tool.

The e-Brochure outlines the process and considerations that each Reclamation office typically uses for final processing of approved transfer proposals once it is determined that a transfer action can be accommodated operationally. The e-Brochure is sectionalized by office and each section includes a number of elements such as points of contact, timelines, and a progress monitoring system. The e-Brochure is being constructed with on-line capability so that information and status can be viewed 24 hours a day. Reclamation is available to meet with customers regarding any specific proposal, issue, or suggested improvement to the water transfer approval process.

Reclamation currently has a number of programmatic transfer programs for which we have National Environmental Policy Act (NEPA) coverage and provide an accelerated process for handling transfers analyzed. These accelerated water transfer programs cover within basin transfers and programs such as the 25-year transfer program with the San Joaquin Exchange Contractors. We have also approved banking arrangements with some districts on a multi-year basis which involve water transfers/exchanges with local water banks. Reclamation anticipates completing the environmental document for a 10-year North to South Transfer Program in time for

the summer of 2015 and is currently contemplating a North to North programmatic document to cover transfers between North of Delta Water Service Contractors and Sacramento River Settlement Contractors having non-project base supplies which are typically available for transfer and are not covered under existing accelerated programs. A 1-year North to South Water Transfer Program is being developed for the 2014 water year.

Reclamation will also continue to coordinate with the State and cooperate with our contractors to support improvements to transfer programs that require DWR involvement and/or approval by the State Water Resources Control Board (SWRCB).

Parties Involved

Reclamation, DWR, San Luis & Delta-Mendota Water Authority (SLDMWA), SWRCB, and various water transfer buyers and sellers, on a year-round basis.

Reclamation will engage State agencies, CVP contractors and State Water Project (SWP) contractors to identify bottlenecks to transfers, improve processing, and eliminate duplication of effort.

Timeline for Benefits to be Derived

The water year 2014 transfer window for north to south is July-September 2014, and will apply to the 1-year program. The transfer window for north to north and east to west is year-round since these transfers do not involve Delta pumping to accomplish.

Benefits

This action would not generate additional CVP water supply, but would provide for a voluntary redistribution of CVP supplies and non-CVP available supplies. As in 2013, south of Delta CVP water service contractors could receive over 150,000 acre-feet of additional water due to transfers from other sources. On a case-by-case basis some transfers and or conveyance of CVP and/or non-CVP supplies may improve operational flexibility.

Use of Warren Act Contracts to Facilitate Water Supplies

Investigate use of CVP storage and/or conveyance to facilitate approved water transfers by working

Near-Term Actions 2014

directly with transferring partners to consider whether such a request could be met without harming other CVP purposes or operations. Please see #10 for additional information on the topic of water transfer approvals.

Parties Involved

Depends on the transferring parties; generally a non-CVP source to a CVP contractor.

Timeline for Benefits to be Derived

Benefits would likely be provided during the Delta transfer pumping window July-September 2014 however, this depends on the availability of CVP facilities and the nature and timing of a proposed water transfer action.

Benefits

Dependent on number, quantity, timing, and location of the various transfers. Supply quantities for valid transfers could come at the expense of non-CVP water user supplies. Transfer amount will be dependent on the number, quantity, timing, and location of the various actions, and could range from 0 to 20,000 acre-feet. If coordinated and timed correctly, transfer flows could provide some flexibility and support for in-stream flows, cold-water pool, and/or reservoir storage.

Refuges and Fisheries

San Joaquin River Restoration Program Flows – Recapture and Recirculation Plan

Reclamation will continue to maximize opportunities to recapture and recirculate flows released for the San Joaquin River Restoration Program (Restoration Program), which includes completion of the Recapture and Recirculation Plan (R&R Plan). The R&R Plan will address recapture of the Restoration Flows in the Delta, which is not fully addressed in the 2011 R&R Plan.

The R&R Plan will describe the conditions under which Interim and Restoration flows (Restoration flows) would be recaptured, at the Mendota Pool, lower San Joaquin River diversions, and CVP and SWP Delta facilities. In addition, the R&R Plan will describe the conditions under which recaptured Restoration Flows (Recirculation Water) are recirculated to the Friant Division long-

term contractors (Friant Contractors) by direct delivery, exchanges, transfers, or sales to other south of Delta contractors and the refuges.

Parties Involved

Reclamation is to complete the R&R Plan, undertake recapture actions, and assist in recirculation actions. The parties to the Settlement (Friant Contractors and NRDC) and Westside contractors are to participate in the preparation of the R&R Plan.

Recapture and recirculation of Restoration flows is ongoing based on 2011 R&R Plan. Recirculation Water is generally allocated weekly to the Friant Contractors, on a pro-rata share, in San Luis Reservoir. Reclamation and the Friant Contractors work collaboratively to maximize the return of Recirculation Water to the Friant Contract Service area. Recirculation Water that is impractical to return is managed for exchange, transfer, or sale at the discretion of each Friant Contractor.

Timeline for Benefits to be Derived

Reclamation has been recapturing and recirculating flows since 2010. Reclamation prepared a draft R&R Plan in 2011, in coordination with the Friant Contractors, NRDC, and the Westside contractors. Reclamation has been operating to the draft R&R Plan and will continue to recapture and recirculate Restoration Flows consistent with the draft R&R Plan until the Final R&R Plan is completed.

Reclamation has been working diligently on drafting the R&R Plan. However, due to work on other drought - related activities this actim has been delayed. We expect to have the main body of the Plan completed in March and the Operations Agreement Appendix in May.

Benefits

The R&R Plan is a requirement of the Settlement and Public Law 111-11 and will describe the key conditions for recapture and recirculation. Reclamation will continue to maximize recapture and recirculation of Restoration Flows for Friant Contractors, consistent with the Settlement and Public Law 111-11. This includes working with the Friant Contractors, facility owners, and other potentially affected parties to recapture Restoration Flows at locations between the Merced River

confluence and the Delta. If successful, this could increase the volume of recaptured Restoration Flows.

Lower Klamath River Fall Flows for Fall-run Chinook Salmon

Develop a plan for the long-term protection of the fishery resources. Reclamation released flows for augmentation in the fall of 2012 and 2013, the impacts of which have yet to be addressed. In 2012, a total volume of 39,000 acre-feet was released and approximately 17,500 acre-feet was released in 2013. A long-term strategy implementable by the fall of 2014 is being developed in a cooperative stakeholder process. The most recent stakeholder meeting was held on December 19, 2013, and more dialogue is needed to finalize the strategy.

Parties Involved

Reclamation will coordinate with tribes in the Trinity and Klamath River Basins, USFWS, DFW, NOAA Fisheries environmental stakeholders, and CVP and other water and power users in exploring alternatives, developing the augmentation regime and identifying impacts. Reclamation sponsored a well-attended workshop on December 19, 2013, to gather stakeholder input. After meeting several times, we are close to a final version of the Plan. We want to take approximately one more month to allow adequate time for final discussion prior to finalizing the Plan. We are close to a final version of the plan. We want to take approximately one more month to allow adequate time for final discussions prior to finalizing the plan

Timeline for Benefits to be Derived

The benefits are derived in August of September during years when flow augmentation is determined necessary in accordance with criteria developed under Reclamation and USFWS guidance in 2012.

Benefits

Flow augmentation provided from Trinity Reservoir would be expected to increase flows and decrease water temperatures in the lower Klamath River while the fall-run Chinook salmon are migrating in the Klamath River. In turn, these fish should experience less physiological stress and vulnerability to disease. Increased volume and water turnover rates will allow for lower fish densities and help disrupt the potential spread of

disease. There will also be a minor increase in coho salmon rearing habitat in the Trinity River during the augmentation period. The advantage of having a Long Term Plan in place will allow for broader stakeholder input and establishing operational responses. It will also hopefully reduce conflicts and lead to better overall resource.

Refuge Water Supply

Implement activities such as shifted demand scheduling, reallocation of Level 2 supplies to other refuges, and supply flexibility options that are strategically prioritized, to improve coordinated management of refuge water supplies and lessen impacts to other water users.

Demand Scheduling

Reclamation is addressing demand scheduling through its work on the Action for Golden Gate Salmon Association Projects (see page 10). (On a regional basis, work with various water users and diverters to forecast water demands in an effort to better project and schedule reservoir releases, operational flexibility, and pumping and canal capacities.)

Reallocation of Level 2

Article 7 of the refuge water supply contracts, “Transfers, Reallocations or Exchanges of Water”, forms the basis for this action. It states that, “Subject to the prior written approval of the Contracting Officer, the Project Water made available under this Contract may be transferred, reallocated or exchanged in that Year to other Refuge(s) or Project contractors if such transfer, reallocation or exchange is requested by the Contractor and is authorized by applicable Federal and California State laws, and then-current applicable guidelines or regulations.” Reclamation is working with the refuges to help manage refuge Level 2 supplies and allow reallocation of Level 2 refuge water between and among refuges. Such reallocations have occurred for the past 8 years. Additionally, Level 2 diversification opportunities, which can provide mutual benefits to refuges and agricultural water service contractors, are being pursued.

Supply Flexibility Options

Reclamation has engaged a broad group of CVP water contractors, refuge interests and NGO’s, in a Stakeholder Technical Team (STT) and a Policy Team to address development of strategies and

Near-Term Actions 2014

actions that are needed to increase water supply reliability for all CVP SOD water users, including wildlife refuges. A project which the STT identified as being appropriate for action within the 2014 water year is:

- Groundwater Acquisition Program for ARRA-funded Wells

See the Medium-Term Actions section of this Plan for additional projects.

Parties Involved

Reallocation of Level 2

Reclamation, USFWS, DFG, and Grassland WD.

Supply Flexibility Options

Groundwater Acquisition Program for ARRA-funded Wells: Grasslands Water District, San Luis Delta-Mendota Water Authority, Reclamation.

Timeline for Benefits to be Derived Reallocation of Level 2

Benefits to the refuges could be realized throughout the year. Reclamation will continue to allow transferring water from one refuge to another. Benefits will be seen in the 2014 water year.

Supply Flexibility Options

Groundwater Acquisition Program for ARRA-funded Wells: These wells are in place and are expected to be operational in WY2014 and will provide up to 5000 acre-feet of Level 2 water freeing up an equivalent amount in San Luis Reservoir for agricultural contractors. Another 5,000 acre-feet would go to meet Incremental 4 requirements.

Benefits

Reallocation of Level 2

The amount of water that can be reallocated varies widely from year-to-year, as do costs of conveyance which is dependent upon location of donor and receiving refuges.

Supply Flexibility Options

ARRA groundwater wells are projected to yield 5,000 acre-feet of Level 2 water and 5,000 acre-feet of Incremental Level 4. Level 2 water produced frees up an equivalent amount of surface water in San Luis Reservoir for agricultural contractors.

Golden Gate Salmon Association (GGSA) Projects

Implement the following projects in water year 2014:

- A.1 – Delta Cross Channel Electrical Barrier: Exploration and, if reasonable, installation of an experimental temporary low voltage graduated electrical barrier near Dead Horse Island to deter Mokelumne River fall-run Chinook salmon from straying into the Sacramento river through the Delta Cross Channel;
- B.1 – Sacramento River Gravel Augmentation: creation of spawning and rearing habitat on the Upper Sacramento River for juvenile Chinook salmon and steelhead;
- B.9 – Sacramento River Flows – coordination of fish and river releases and diversions to improve the migration on juvenile Chinook salmon;
- B.10 – Painter’s Riffle – repairs of an engineered side channel near Redding to provide spawning habitat for Chinook salmon and steelhead.

Parties Involved

Parties are involved as part of the project team in the development of the plans and review of documents. Participants include the: DFW, DWR, East Bay Municipal Utility District, NMFS, Reclamation District 108, SWRCB, Reclamation, and USFWS.

Timeline for Benefits to be Derived

Benefits would begin with implementation of the projects in 2014 and we would expect to see increased returns of Chinook salmon and steelhead in 2 to 3 years following successful completion of their lifecycle.

Benefits

- A.1 – Primary benefits include Mokelumne River natural and hatchery production and the maintenance of Sacramento Basin salmon genetics. Secondary benefits include potential water quality improvements in the South Delta and a reduced need for operation of the Delta Cross Channel Gates.

- B.1 – Primary benefits include increased spawning and rearing habitat to address factors limiting the natural production of adult anadromous fish in the Upper Sacramento River.
- B.9 – Primary benefits would include higher survival for Sacramento Basin fish as a result of improved water temperatures, expanded habitat, and reduced predation. The project may identify potential water supply benefits as well.
- B.10 – Primary benefits are increased spawning and rearing habitat in the Upper Sacramento River.

Coordination

Coordination and Forecasting

On a regional basis, intensify coordination of operations with the various river diverters, water districts, hatchery operators and the other system operators listed below to best forecast operations and water demands in an effort to improve operational flexibility and delivery efficiency.

Parties Involved

Sacramento River Settlement Contractors, San Joaquin River Exchange Contractors, City of Sacramento, DWR, other non-CVP reservoir operators, and various sets of CVP contractors – Tehama Colusa Canal Authority (TCCA), SLDMWA, American River Contractors, Friant Water Users, Refuge Managers, and environmental stakeholders.

Timeline for Benefits to be Derived

Initially in water year 2014, then a continuous and ongoing effort.

Benefits

This action would result in little to no increase to net supply but will increase operational efficiency.

Improve Hatchery Operational Coordination with North of Delta Diverters

Develop and implement a plan for better coordination of hatchery fish releases to coincide with adequate natural flows or other operational releases, which would reduce the need for specific release of stored water as a separate effort for the hatcheries.

Timeline for Benefits to be Derived

Benefits would occur concurrent with the action and would result in improved number of adult salmon in 2 to 3 years as a result of more successful migration.

Benefits

Benefits include improved numbers of adult salmon and a more efficient water operation.

Folsom Intake Protection

Should dry conditions persist over the winter, meet with American River stakeholders to discuss options for meeting minimal river flows for fisheries and downstream diversion while ensuring the Folsom M&I intake remains operational, and if needed install a temporary pump system.

The authorities and cost-share obligations were identified in January, 2014. A scope of work is under development for the temporary pump system, to prepare to initiate the procurement process. We will continue to monitor the forecast and plan to possibly implement this action later in the water year.

Parties Involved

Reclamation, San Juan Water District, Cities of Roseville and Folsom.

Timeline for Benefits to be Derived

Likely time frame for alternative pumping to provide benefits would be Sep – Nov 2014

Relief from Water Quality Objectives

Promptly identify opportunities to collaborate to propose, review and approve temporary amendments to water quality objectives or to move compliance points in order to avoid disproportionate impacts through continued Reclamation forecasting and prompt inter and intra agency coordination and communication. Reclamation will effectively coordinate with DWR, the State Water Project (SWP) and CVP contractors, the State and Federal fishery agencies, and the SWRCB, at a minimum. The goal is to reduce disproportionately high water supply impact or shift a significant fishery concern or water supply impact to another part of the system. Reclamation will continue to assess hydrological and operational conditions and coordinate with

Near-Term Actions 2014

the appropriate agencies and stakeholders. Coordination will occur at regular CALFED Ops meetings with additional meetings and briefings as needed.

In January 2014, Reclamation and DWR identified the need to file a Temporary Urgency Change Petition to the State Water Resources Control Board. Included is a proposal to relax the D-1641 X2 standard to avoid going to 7,100 cfs, and to modify operations at the Delta Cross Channel (DCC), in order to keep the gates open in February. The petition was filed on January 29 and the requested changes were approved by the SWRCB in an order dated January 31. The DCC were opened on February 1. Gate operations in February will be managed based on real-time water quality and fisheries data.

Parties Involved

Reclamation, DWR, DFW, USFWS, NMFS, the SWRCB, the SWP and CVP contractors, environmental organizations, and any other effected parties.

Timeline for Benefits to be Derived

October through May, if an opportunity presents itself and the SWRCB approves some change.

Benefits

Benefit to supplies will depend on the water quality objective modified and actual conditions. Modification to water quality standards usually result in tradeoffs among beneficial uses, but there may be up to tens of thousands of additional acre-feet generated.

Water Acquisitions

Acquire Non-CVP Water for CVP Purposes

Reclamation will actively pursue water acquisitions, exchanges and transfers to augment CVP water supplies for agricultural, refuge, in-stream and other purposes. Emphasis will be given to proposals designed to meet multiple purposes and objectives. The goal is to acquire 10 TAF.

Parties Involved

Reclamation and sellers to be determined.

Water Year 2014 Estimated Benefit for Near-Term Action Categories	
Action Category	Estimated Benefit
Operational Flexibility within the Existing Biological Opinions	Up to 50,000 acre-feet Old and Middle River Index; Estimation Method Based on New Range of Year for the Adult Delta Smelt Incidental Take Statement; and New and Refined Turbidity Models
Operational Flexibility	Up to 10,000 acre-feet Flexibility Agreement
Water Transfers	Up to 170,000 acre-feet Streamline Water Transfer Approval Process; and Use of Warren Act Contracts to Facilitate Water Supplies
Refuges and Fisheries	Up to 5,000 acre-feet ARRA Funded Wells
Water Acquisitions	Up to 31,000 acre-feet Acquire Non-CVP Water for CVP Purposes, and Component (C1) Water
Response to Drought	Up to 13,000 acre-feet SJRRP-Ceasing Restoration Flows Early
Total Estimated Benefits	Up to 279,000 acre-feet

Timeline for Benefits to be Derived
WY 2014.

Benefits

Approximately 10,000 acre-feet of water is planned for acquisition, with additional quantities possibly available depending on the hydrology, degree of benefits, and pumping capability

Component 1 (C1) Water

Acquire C1 Water from Yuba County Water Agency (YCWA) for Project use.

Parties Involved

DWR and YCWA.

Timeline for Benefits to be Derived
July through September 2014.

Benefits

Under current agreement, the 60,000 acre-feet is split between the SWP and CVP as project flow/supplies. After system losses, the CVP may receive approximately 21,000 acre-feet.

Response to Drought

Public Health and Safety

Reclamation is working with customers to identify any unmet water demand to satisfy amounts needed for public health and safety.

Parties Involved

All CVP contractors with an identified M&I use.

Timeline for Benefits to be Derived
This data will be available by February 11.

Benefits

Intent to provide M&I contractor with an amount of water from the CVP that satisfies the “unmet” water need. Unmet need is the difference between the amount of water available to the contractor from other sources and the amount necessary to satisfy minimum public health and safety requirements. In coordination with the State, Reclamation is making it a priority to operate the CVP to first meet public health and safety needs as well as legal requirements while ensuring the best possible use of limited water supplies and focusing on conservation actions.

Rescheduling Water in San Luis Reservoir

In December 2013, Reclamation issued rescheduling guidelines for the rescheduling of CVP water from the 2013 contract year to the 2014 contract year with regard to the Federal share of storage in San Luis Reservoir. These guidelines established the process whereby contractors may request carryover of 2013 contract year water into 2014. These requests are subject to approval by Reclamation in February. Rescheduling is historically allowed when rescheduling will not interfere with Reclamation’s CVP operations. As of January 27, 2014, there is approximately 250,000 acre-feet of water that could be rescheduled.

Parties Involved

South of Delta water service contractors.

Timeline for Benefits to be Derived

Rescheduled water will be carried over to the 2014 water year and available for use in that year by the contractor rescheduling the water.

Benefits

The rescheduled water is from South of Delta water service contractors. Rescheduling would provide some contractors with their only water supplies for 2014 due to the drought.

San Joaquin River Restoration Program - Ceasing Restoration Flows Early

Under the San Joaquin River Restoration Program, Restoration Flows are scheduled to continue until the end of February as part of the 2013/2014 Restoration Year. As the 2014/2015 Restoration Year is currently projected to be a “critical dry” year under the Settlement in NRDC, et al., v. Rodgers, et al., and Restoration Flows were scheduled to end on February 28. The parties to the Settlement have agreed to ramp down and stop Restorations Flows starting February 1, one month earlier than called for in the Settlement. Reclamation has received a recommendation from the Restoration Administrator reflecting this change. Reclamation estimates that about 13,000 acre-feet of “Unreleased Restoration Flows” will be generated by this action. These Unreleased Restoration Flows will be banked and then sold to the Friant Division long-term contractors, consistent with Paragraph 13(i) of the Settlement.

Near-Term Actions 2014

Reclamation will also implement a juvenile salmon trap and transport study in connection with this action to test the feasibility of moving juvenile salmon from the upstream reaches of the San Joaquin River to areas where they can migrate out to the ocean. This study will provide information on the feasibility of this action for moving juvenile spring-run Chinook salmon in similar low-flow conditions in the future.

Parties Involved

Reclamation

Timeline for Benefits to be Derived

February 2014

Benefits

13,000 acre-feet of Unreleased Restoration Flows in the Friant Division

Additional Short-Term Mitigating Measures

Depending on hydrologic conditions it may be necessary for Reclamation or its customers to implement additional mitigating measures to provide water deliveries during the drought, or to assist in relieving contractors from drought impacts. Reclamation is considering paying for things we wouldn't normally pay for; changing operations and maintenance practices or schedules; and delaying rate increases, installing temporary barriers in the Delta, increased fishery monitoring, temporary pumps to access water below current water supply intakes (Folsom Intake Protection, described above), blending water, facilitating the conveyance of non-project water, and small-scale pumping operations upstream above check structures.

Parties Involved

Reclamation and CVP contractors, in coordination with stakeholders.

Timeline for Benefits to be Derived

The timeline for emergency measures will be determined as the water year progresses. Additional meetings will occur to ensure all reasonable measures are supported and undertaken.

Benefits

Potential benefits will be M&I and agricultural access to water, as well as water supplies for the monitoring and protection of fish and wildlife.

North of Delta Water Management

Proposal is to extend the water delivery period for the north of Delta water service contractors from March 1, 2014 through April 15, 2014.

Parties Involved

Potentially all north of Delta water service contractors, including five Federal and State wildlife refuges.

Timeline for Benefits to be Derived

Benefits would be realized from the time the extension is announced through the end of the extension period. Reclamation is currently evaluating this proposal with plans to reach a decision within the next two weeks.

Benefits

Contractors with a remaining allocation must apply the water by February 28, 2014, which is the end of the contract period. Extending the delivery period through April 15, 2014, will allow water to be applied at a time when crops and wildlife habitat are in greater need, thereby increasing the beneficial use of a very limited water supply.

MEDIUM-TERM ACTIONS (BEYOND WATER YEAR 2014)

Refuges and Fisheries

Refuge Water Supply Supply Flexibility Options

Reclamation has engaged a broad group of CVP water contractors, refuge interests and NGO's, in a Stakeholder Technical Team (STT) and a Policy Team to address development of strategies and actions that are needed to increase water supply reliability for all CVP SOD water users, including wildlife refuges. Project which the STT identified as being appropriate for action within the next 3 years are:

- North Grasslands Water Conservation and Water Quality Control Project
- Los Banos Creek Water Resource Implementation Plan

Parties Involved

North Grasslands: Grassland Water District, San Luis Water District (funding) & Reclamation

Los Banos Creek Water Resource Implementation Plan: Exchange Contractors, Grassland Water District, San Luis Water District, City of Los Banos, and potentially others.

Timeline for Benefits to be Derived

North Grasslands: If funded, this project could start in 2014 and would take 2 years to complete. Water benefits are estimated at 15,000 acre-feet depending on allocation, but would not be realized until at least 2015.

Los Banos Creek Water Resource Implementation Plan: Features of this proposed project could be constructed in FY2014 and according to project proponents, operational in 2014. Water benefits would only be realized if hydrology allows water from Los Banos Detention Dam to be utilized.

Benefits and Costs

North Grasslands: The North Grasslands Conservation and Water Quality Control Project

is estimated to provide 15,000 acre-feet of water to meet refuge needs at a cost of \$45 per acre-feet. Construction costs are estimated at \$6.2 million, but may be funded in whole or part by San Luis Water District in return for a portion of water conserved. Construction is projected to take 2 years, so no water benefits would accrue in 2014.

Los Banos Creek Water Resource Implementation Plan: Los Banos Creek project could develop up to 15,600 acre-feet of additional water, increasing refuge supplies on average by 2,788 acre-feet per year and SOD agricultural contract supplies by 3,612 acre-feet per year.

Golden Gate Salmon Association (GGSA) Projects

Implement the following projects over the next couple of years:

- B.9(b) - Sacramento River Temperature Facilities: investigations of structural improvements to Shasta Dam to increase cold water availability.
- B.11 - Sacramento River Stranding: smoothing of releases from Keswick during the month of October to reduce incidences of redds in locations that will later desiccate through coordination of rice decomposition diversions.

Parties Involved

Parties are involved as part of the project team in the development of the plans and review of documents. Participants include the: DFW, DWR, East Bay Municipal, NMFS, Reclamation District 108, SWRCB, Reclamation, and USFWS.

Timeline for Benefits to be Derived

Benefits would begin with implementation of the projects and we would expect to see increased returns of Chinook salmon and steelhead in 2 to 3 years following successful completion of their lifecycle.

Medium-Term Actions (Beyond Water Year 2014)

- B.9(b) – Primary benefits would include improved water temperatures, increased flexibility in reservoir management, and potentially improved water supply.
- B.11 – Project fishery benefits accrue to fall-run Chinook salmon in years where conditions allow for changes to Keswick Dam operations (approximately 2 out of every 3 years on average). There may be some small benefits with increased storage in Shasta Reservoir.

Coordination

Rice Straw Decomposition

Work with north of Delta water district and land managers to better coordinate river diversions for their rice decomposition water needs and alternatives methods to rice decomposition as a way to conserve water supplies. Reclamation is considering an appraisal level review of this concept in order to investigate its viability (magnitude, cost, authorities, environmental impacts, etc.), identify next steps and who would be in charge of the effort. The timeline needed to implement this action precludes an action in the immediate future. One proposal that arose during water year 2013 was the possibility of formulating a pilot program to evaluate the long-term viability of a rotation program to mix decomposition with mechanical means.

Parties Involved

North of Delta water district and land managers, GCID, possibly other Sacramento River Settlement Contractors, and the University of California Davis School of Agriculture and Environmental Sciences, and environmental stakeholders.

Timeline for Benefits to be Derived

Supply benefits and potential operational flexibility would be immediate once the scope of a pilot program is formulated.

Benefits

From an operational flexibility standpoint this would likely result in water backed up into storage at Shasta. The quantity is uncertain, possibly 10,000 acre-feet during a pilot project.

Operational Flexibility with the Existing Biological Opinions

Population Dynamics Modeling to Revise Adult Delta Smelt Incidental Take Statement

Develop a life cycle model that would allow the incidental take limit (as defined in the incidental take statement from the 2008 BO) to be determined by the use of population dynamics instead of entrainment at the pumps.

Parties Involved

USFWS is the lead agency developing the model. Reclamation and DFW will be collaborators. Additionally Federal and State water contractors and environmental stakeholders will be asked to participate. Efforts have been initiated and are expected to continue through 2015.

Timeline for Benefits to be Derived

A final peer reviewed model is planned for implementation in 2015 and will be used in the December and March timeframe.

Benefits

Improved ability to assess risk to the species, shifting the focus from salvage at pumps to entrainment effects as a fraction of the actual population.

Salmonid Genetic Testing

Opportunities may exist to improve genetic testing of salmonids salvaged at the Tracy Fish Facility. Genetic evaluation is part of the Term and Condition 2a of the 2009 NMFS BO. Including genetic information in the loss equation could increase the accuracy in estimating annual and season loss estimates of different evolutionarily significant units of Chinook salmon.

Parties Involved (and when)

Reclamation, NMFS, Federal and State water contractors, and environmental stakeholders. Once Reclamation has an awarded contract, efforts can begin to collaborate with agency staff and interested stakeholders.

Timeline for Benefits to be Derived

Expect some improvement of genetic efforts at facilities in 2015.

Medium-Term Actions (Beyond Water Year 2014)

Benefits

Could allow for less more reliable water deliveries to south of Delta contractors and have reliable protection of targeted fish species.

Water Transfers

Long-Term Water Transfer Process

Reclamation will continue preparing the long term Environmental Impact Statement (EIS) that is scheduled for a draft to be released in the fall of 2014. Reclamation and the SLDMWA are preparing a joint EIS/Environmental Impact Report (EIR) to analyze the effects of water transfers from water agencies in northern California to water agencies south of the Sacramento-San Joaquin Delta (Delta) and in the San Francisco Bay Area (Bay Area).

Parties Involved

Reclamation is the NEPA lead. SLDMWA is the California Environmental Quality Act (CEQA) lead. USFWS will need to complete Section 7 consultation in 2014. DWR is a Responsible Agency under CEQA.

Timeline for Benefits to be Derived

Transfers would occur over a ten-year period: 2015-2025.

Benefits

Benefits will go to the participating buyer and seller agencies within the Long-Term Water

Transfer program. The “up to” amount of transfer water that could be made available in any year is approximately 473,000 acre-feet. However, it is unlikely that this amount of water could be transferred in any year due to Delta regulatory and other constraints.

San Joaquin River I:E Experiment

Determine appropriate experiments to evaluate fish movements as a result of I:E ratio requirements from the NMFS BO, using steelhead survival study results information.

Parties Involved

South Delta Salmonid Research Collaborative (SDSRC) working group including USFWS, NMFS, Reclamation, DWR, DFW as well as Federal and State water contractors and environmental stakeholders. The SDSRC workgroup continues to meet at least every two weeks to develop new treatments that can be initiated in the future.

Timeline for Benefits to be Derived

Implement new treatments possibly as early as March 2014 to develop new information regarding steelhead survival and migration habits through the south Delta past Chipp’s Island.

Benefits

Increased scientific information will improve management flexibility in the south Delta in future years.