

# Draft CVPIA Fiscal Year 2011 Refuge Water Supply Program Work Plan

*January 31, 2011*

## ***Introduction***

In 1992, the Central Valley Project Improvement Act (CVPIA) established fish and wildlife as having co-equal priority with agricultural and municipal & industrial users of Central Valley Project (CVP) water. CVPIA mandated the development and implementation of the Refuge Water Supply Program (RWSP) to manage, secure, and deliver a reliable, clean water supply to federal, state, and private wildlife wetland habitat areas (refuges) in California's Central Valley. In total, there are 19 wildlife refuges, including the wetland areas identified in the San Joaquin Basin Action Plan (SJBAP), that collectively protect a significant portion of the last remaining five percent of the historic Central Valley wetlands, providing critical habitat to birds of the Pacific Flyway. (See Figure 1 for refuge locations.)

The RWSP is administered and implemented by the Bureau of Reclamation in close collaboration with the U.S. Fish and Wildlife Service (Service), Region 8. Reclamation and the Service also work cooperatively with the California Department of Fish & Game (CDFG), Grassland Water District (GWD), and the Central Valley Habitat Joint Venture (CVHJV) in implementing the RWSP.

## ***Purpose***

This annual work plan (AWP) presents Reclamation's approach for implementing the RWSP in fiscal year (FY) 2011. It also serves as an important tool to aid federal agencies' decision making for program budgeting and planning purposes. The AWP includes the RWSP's status, FY 2010 accomplishments, FY 2011 activities and related budgets, and provides a 3-year look into the future.

## ***Background***

Each year Reclamation and the Service endeavor to make progress towards the established requirement to supply 555,515 acre-feet of water to the refuges, pursuant to CVPIA. This target quantity of water is referred to as full Level 4 and is the amount of water required for optimum habitat development on the refuges.

Full Level 4 Water consists of two blocks of water – Level 2 Water and Incremental Level 4 Water. Level 2 Water equals 422,251 acre-feet of water that is derived from the CVP's annual yield and other sources, and is the average annual amount of water required to maintain wetland habitats at the refuges as they existed in 1989 (Report on Refuge Water Supply Investigations, 1989). The RWSP has delivered an average of 364,985 acre-feet of Level 2 Water annually since 1993.

Incremental Level 4 Water equals 133,264 acre-feet and is the difference between Level 2 and full Level 4. Incremental Level 4 Water is supplemental water that is acquired from willing

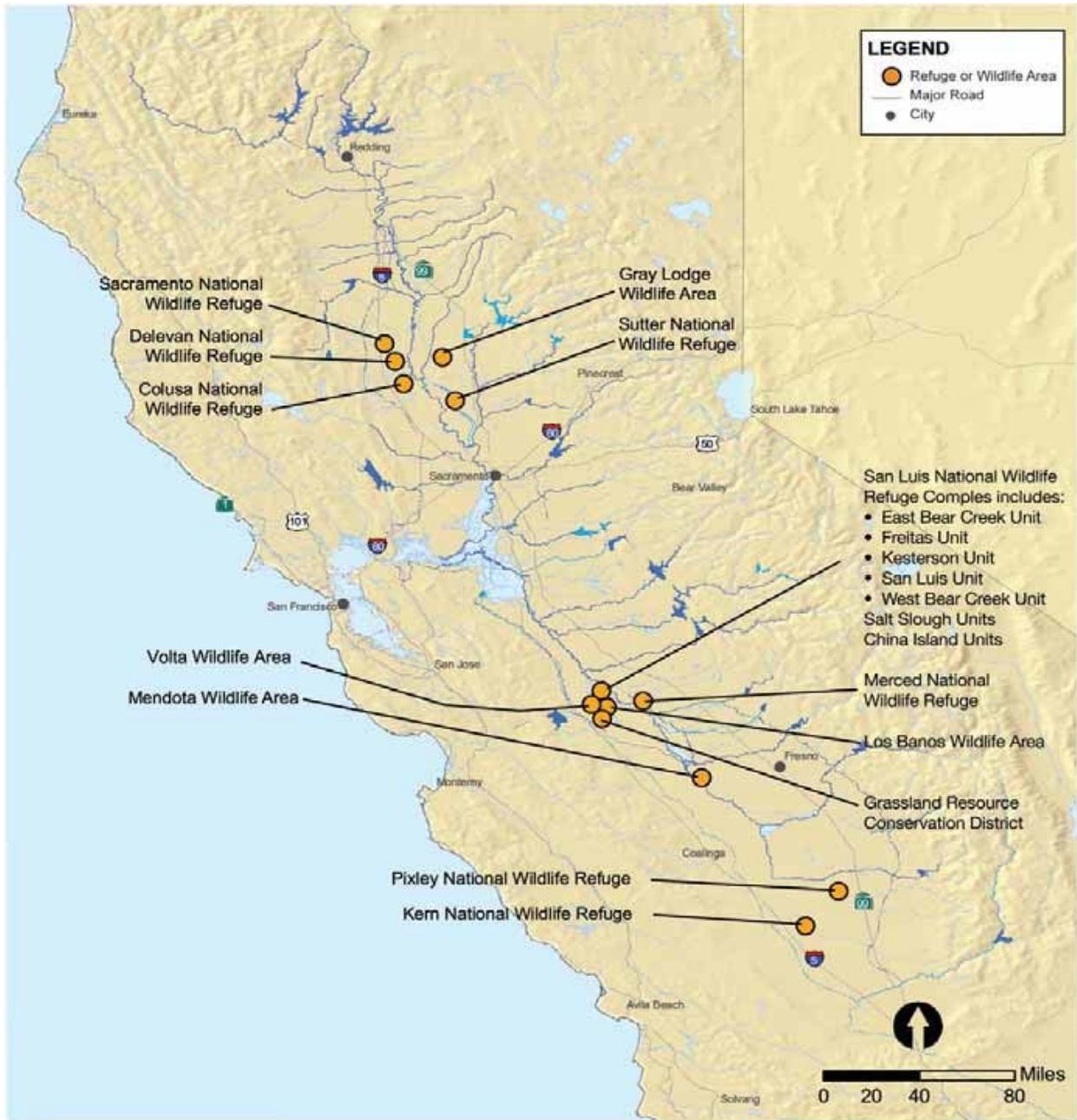


Figure 1  
Locations of CVPIA Refuges

sellers. The amount of Incremental Level 4 Water acquired varies from year to year, depending on annual hydrology, water availability, water market pricing, and funding. The RWSP has acquired an average of 58,401 acre-feet of Incremental Level 4 Water annually since 1993. After accounting for conveyance losses, the average amount of Incremental Level 4 Water delivered to the refuges annually is 51,047 acre-feet.

Each year in February and March, Reclamation announces the available Level 2 refuge water allocation percentage for the contract year that begins in March. At this same time, the RWSP

provides its initial estimate for Incremental Level 4 acquisitions to the Interagency Refuge Water Management Team (IRWMT). Following these announcements, annual water delivery schedules are developed by each refuge manager and coordinated through the IRWMT. The IRWMT is chaired by Reclamation and includes refuge managing agencies – GWD, CDFG, and the Service, as well as representation from the CVHJV.

Reclamation has five long-term water supply contracts with GWD, the Service, and CDFG, which establish Reclamation's commitment to the CVPIA delivery mandates. Two contracts with CDFG cover Gray Lodge, Los Banos, Volta, and Mendota Wildlife Areas (WA), as well as the Salt Slough and China Island Units of the North Grasslands WA. Two contracts with the Service cover Sacramento, Delevan, Colusa, Sutter, Merced, Kern, and Pixley National Wildlife Refuges (NWR) along with the San Luis, Kesterson, East Bear Creek, West Bear Creek, and Freitas units of the San Luis NWR Complex. The fifth contract is with the GWD for the Grassland Resource Conservation District (GRCD), which is comprised of privately-owned and managed wetlands.

Since CVPIA's enactment, the RWSP has made substantial progress in providing reliable water supplies to nearly all 19 refuges. Presently, there remain 5 refuges that cannot receive full Level 4 Water because conveyance facilities are either inadequate or lacking. These refuges are the Gray Lodge WA, Sutter NWR, Pixley NWR, East Bear Creek NWR, and Mendota WA. The RWSP, in collaboration with these refuges and neighboring water districts, seeks to eventually provide the required water conveyance facilities to enable the delivery of reliable water supplies to all 19 refuges.

### ***RWSP FY 2011 Goals and Objectives***

- To construct and/or modify the necessary infrastructure to support long-term delivery of firm, reliable water supplies to the boundaries of the refuges. The need to upgrade or construct conveyance facilities is a result of capacity constraints in existing delivery systems and/or the lack of delivery systems. In some cases, conveyance can be provided through local water districts with improvements to their facilities. In other cases, new and independent facilities may be needed. The goal is to have the necessary facilities in place to deliver full Level 4 Water in accordance with the priorities set forth in the CVPIA Implementation Plan 2010-2019.
- To acquire Incremental Level 4 Water for critical wetland habitat supporting resident and migratory waterfowl, threatened and endangered species, and wetland dependent aquatic biota on the refuges.
- To convey long-term, firm and reliable water supplies (Level 2 and Incremental Level 4) of suitable quality and established quantities to the boundaries of the refuges.

### ***RWSP Components***

The RWSP consists of three important components that are authorized under CVPIA – Water Acquisitions, Facilities Construction (including SJBAP facilities), and Water Conveyance. Listed below are the key CVPIA sections authorizing these components and their corresponding responsible staff members. Overall program oversight and management is performed by

Tim Rust (Reclamation Lead) and Dale Garrison (Service Co-Lead). Working together, these three components are moving the RWSP forward toward meeting its goals.

<b>Component</b>	<b>Name</b>	<b>Agency</b>	<b>Role</b>
Water Acquisitions – CVPIA Section 3406(d)(2)	Linda Colella	Reclamation	Lead
Facilities Construction (including SJBAP facilities) – CVPIA Section 3406(d)(5)	Vacant	Reclamation	Lead
Water Conveyance (Wheeling) – CVPIA Section 3406(d)(1), (2) and (5)	Sonya Nechanicky	Reclamation	Lead

### ***RWSP Status***

As of 2010, 14 of the 19 refuges are able to receive full Level 4 water supplies. The Facilities Construction component identified 46 design/construction projects or actions that must be completed to provide full Level 4 capacity at all refuges. To date, 32 of the 46 projects or actions have been completed. Presently, water conveyance design and construction activities are occurring at the Biggs West Gridley Water District (BWGWD), which conveys refuge water to Gray Lodge WA.

Reclamation administers cooperative agreements for the construction and rehabilitation of conveyance facilities for refuges. Design and specifications for all major components of the SJBAP implementation plan have been completed. Identified major construction projects in the SJBAP have either been completed or are in the final stages, except for Phase II of the East Bear Unit of the San Luis NWR Complex. Reclamation is currently working with the IRWMT to create a project management plan to complete the remaining facilities construction related projects.

The RWSP conveys Level 2 and Incremental Level 4 Water to the refuges through negotiated agreements with water delivery entities. These agreements are used to reimburse the delivering entities for costs associated with conveying water to the refuges through federal, state, and private water distribution systems. The RWSP currently has nine long-term (7 to 50 years) agreements for conveyance. These agreements are with Central California Irrigation District, GWD, San Luis Delta-Mendota Water Authority, Buena Vista Water Storage District, California Department of Water Resources (DWR), BWGWD, Glenn Colusa Irrigation District, and Henry Miller Reclamation District (HMRD) – two agreements. Reclamation administers eight of these agreements; the Service administers one of the two HMRD agreements.

Presently, Incremental Level 4 Water consists of annual purchases from the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors), Stevinson and Grassland water districts, and other willing sellers, as well as permanent acquisitions made in 1998 and 2005.

In addition to surface water acquisitions, the RWSP continues to look at using groundwater to lower costs and increase reliability of providing supplemental refuge water supplies. For example, groundwater wells are currently being constructed at the Volta WA that will increase water supply reliability and help to diversify Level 2 Water in accordance with CVPIA Section 3406 (d)(1). It is anticipated that these wells will produce up to 2,000 acre-feet annually.

Reclamation continues to work with the Service, CDFG, and GWD in developing a Strategic Wetlands Best Management Plan (BMP) consistent with CALFED legislation (H.R. 2828),

providing resources to support the development and implementation of a real-time monitoring network and other potential BMP analysis tools.

## ***FY 2010 Accomplishments***

The RWSP's accomplishments are summarized below.

- Completed required testing of the East Bear Creek Phase I Pumping Plant & Pipeline. Revised operating procedures were implemented and tested.
- Completed the acquisition process to provide Service staff operations and maintenance training on the East Bear Creek Phase I Pumping Plant.
- Completed emergency repairs to the East Bear Creek Phase I Pumping Plant facilities that had been damaged by a lightning strike.
- Completed a 1-year extension for continued monitoring of BWGWD canal water levels and flows. This data will be used to refine the Hydraulic Engineering Centers River Analysis System (HEC-RAS) model as final design commences in late 2010.
- A total of approximately 390,546 acre-feet of Level 2 water was delivered to the refuges in FY 2010. Of this amount approximately 334,524 acre-feet were from CVP yield and approximately 56,022 acre-feet were from non-CVP diverse sources, including riparian water rights water, pre-1914 water rights water, groundwater, accretion water, and water provided under Merced Irrigation District's existing mitigation agreement with the Federal Energy Regulatory Commission.
- The RWSP acquired approximately 64,880 acre-feet of Incremental Level 4 Water as listed in the actions below.
  - 2010 was the fifth year of Reclamation's agreement with the Exchange Contractors, San Luis & Delta-Mendota Water Authority and Madera Irrigation District for the annual purchase of up to 49,583 acre-feet of Exchange Contractors transfer water. The RWSP acquired 27,714 acre-feet from the Exchange Contractors under this agreement .
  - Negotiated a new 1-year agreement with the Stevinson Water District for the acquisition of up to 7,295 acre-feet a year, for delivery to the East Bear NWR. In 2010, 3,773 acre-feet were acquired.
  - Continued a 3-year agreement with the GWD for the acquisition of up to 10,000 acre-feet of groundwater per year. In FY 2010, 8,000 acre-feet of water were acquired.
  - Negotiated a water acquisition contract with the Kern-Tulare Irrigation District for the purchase of up to 20,000 acre-feet of water. Deliveries under this agreement began in FY 2011.
  - Negotiated a 1-year agreement with Panoche Water District for the acquisition of up to 10,000 acre-feet of water. Deliveries under this agreement began in FY 2011.
  - Negotiated a new 1-year agreement with the Exchange Contractors for the acquisition of 8,000 acre-feet of water.

Restoration funds purchased 46,723 acre-feet at a cost of \$6,503,065, which includes \$280,180 from FY 2009 that remained on current agreements; Cal-Fed funds purchased

14,900 acre-feet at a cost of \$2.5M; and Water & Related Resource funds were used to purchase 3,257 acre-feet at a cost of \$488,626.

Incremental Level 4 Water may be acquired in one month and delivered in another. This holds true for fiscal years as well, depending on the time of year an agreement or contract is negotiated and the refuge managers' delivery schedules. Differences in quantity of acquired and delivered Incremental Level 4 Water in any fiscal year may be attributed to the date of acquisition, carriage losses, and requested delivery timing. The RWSP strives to meet the requested timing of refuge deliveries, which is critical to all aspects of refuge management.

- The RWSP delivered 58,021 acre-feet of Incremental Level 4 Water to the refuges in FY 2010.
- Continued to support GWD, in cooperation with CDFG and the Service, to implement the Water Quality Monitoring Project in the Grassland Ecological Area (GEA), a 4-year program, on lands that receive CVPIA water. The study monitors the volume of water, as well as salt load of all major water sources entering the wetlands and all major outflows draining from the GEA. Data from this monitoring effort will provide information to refuge and land-use managers that will serve to better understand the dynamics of water quantity and quality used to manage the GEA.
- Negotiated a sixth amendment to extend the termination date to February 28, 2011, on the groundwater pumping reimbursement agreement with CDFG for the purpose of supplementing Level 2 surface water supplies up to full Level 2 allocation for the Gray Lodge WA.
- Continued cost share development under the CVPIA Sharing of Costs Agreement for Mitigation Projects and Improvements (SCAMPI) to determine the State of California's 2001-2010 cost share apportionment related to Incremental Level 4 Water supplies, including water acquisition, certain conveyance facilities construction, and water delivery costs. Efforts from this process are coordinated with the Service, CDFG, and DWR.
- Initiated well construction at Volta WA (2 wells), Gray Lodge WA (3 wells), and Pixley NWR (2 wells) under the American Recovery and Re-investment Act (ARRA) with completion expected in FY 2011. The combined expected production capacity of these wells is approximately 7,400 acre-feet/year.
- Initiated the Feasibility Study for the North Grasslands Water Conservation and Water Quality Control Project, located in the GRCD. Upon completion of this report, the project is expected to implement design and construction in 2011. The project is designed to intercept surplus high quality flows in Los Banos Creek, the Eagle Ditch, Mud Slough North, and selected local drainages associated with operational spill and return the water upstream into the service area for reuse within the GRCD as water supplies to be accounted for as CVPIA deliveries under the RWSP.
- Initiated project to install flow meters on Bear Creek within the boundaries of the East Bear Creek NWR. The Service will collect the data, which will be used to determine losses incurred during conveyance of refuge water to the East Bear Creek Pumping Plant through the Bear Creek channel.
- Completed development of Reclamation Web site to provide real time and current water year cumulative water flow data for Gray Lodge WA water deliveries. This project allowed for

the transition from a commercial Web site to a Reclamation Web site for the purpose of accessing this data.

### ***FY 2011 Projected Labor & Activities***

The RWSP anticipates conducting the water acquisition, facilities construction, and conveyance activities listed in Table 1 (Activities and Costs), which is located at the back of this report. For each activity, performance data and costs are provided. Table 1 also presents the labor costs associated with administering, managing, and implementing the RWSP.



AWP Activity Number	Type of Activity	# of FTEs	Activity Name & Description	NMFS OCAP RPA#	Performance Metric	Performance Target	Complete this FY? Y/N	Total Project Cost	FY2011 Anticipated Funding				
									Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources	
1.2	<b>RWSP Support continued</b>												
1.2.2		0.75	Reclamation, Water Acquisition Component Manager -- Consults w ith water rights and w ater transfer personnel, solicitor's office, etc., to negotiate, prepare and administer w ater acquisition contracts for Incremental Level 4 w ater. Coordinates refuge delivery schedules w ith personnel from refuges, area offices, Central Valley Operations (CVO), and California Department of Water Resources (DWR). Tracks and monitors all obligations and expenditures.					\$123,968	\$123,968	\$0	\$0	\$123,968	
1.2.3		1.00	Reclamation, Refuge Facilities Construction and San Joaquin Basin Action Plan Components Manager -- Manages, provides oversight, and administers the construction component of the RWSP. Oversees planning and construction of facilities to convey full Level 4 refuge w ater supplies per Central Valley Project Improvement Act (CVPIA).					\$148,126	\$148,126	\$0	\$0	\$148,126	
1.2.4		0.25	Service, <i>CVPIA Implementation Division Chief</i> -- Provides coordination support for CVPIA reporting requirements.					\$54,666	\$54,666	\$0	\$0	\$54,666	
		3.00						<b>Subtotal Funding</b>	\$496,625	\$496,625	\$0	\$0	\$496,625
		2.75						<b>Reclamation</b>	\$441,959	\$441,959	\$0	\$0	\$441,959
		0.25						<b>Service</b>	\$54,666	\$54,666	\$0	\$0	\$54,666
								<b>Other</b>	\$0	\$0	\$0	\$0	\$0
1.3	<b>Technical Support</b>												
1.3.1		1.00	Reclamation, RWSP Support Specialist -- Develops conveyance component budget and provides support services for conveyance and acquisition components of the RWSP. Assists w ith coordination of refuge delivery schedules, w ater accounting, annual w ork plans, and RWSP data entry.					\$141,743	\$141,743	\$0	\$0	\$141,743	
1.3.2		0.27	Environmental Monitoring Staff, Reclamation (representative of up to four staff) -- Perform w ater quality monitoring at Gray Lodge Wildlife Area (GLWA). Provide technical assistance for coop/interagency agreements for w ater quality monitoring. Includes monthly site data dow nloads; physical w ater collections; raw data QC/QA; data analysis; data storage & management; and report development.					\$44,489	\$44,489	\$0	\$0	\$44,489	
1.3.3		0.06	Information Management Staff, Reclamation -- Provide information technology support to the RWSP's database and GLWA Flow Data Web site.					\$9,000	\$9,000	\$0	\$0	\$9,000	

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									Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources	
1.3	<b>Technical Support continued</b>												
1.3.4		0.28	Acquisitions Staff, Reclamation -- Process conveyance, acquisition, and construction agreement/contract obligations, payments, and modifications; administer coop/interagency agreements for water quality monitoring.					\$45,000	\$37,000	\$8,000	\$0	\$45,000	
1.3.5		0.20	Reclamation, South Central California Area Office (SCCAO) -- Administers south-of-Delta CVPIA refuge water conveyance agreements.					\$47,457	\$47,457	\$0	\$0	\$47,457	
1.3.6		0.06	Reclamation, SCCAO -- Enters CVPIA refuge delivery data into Reclamation's financial/accounting database.					\$18,904	\$18,904	\$0	\$0	\$18,904	
1.3.7		0.25	Reclamation, Northern California Area Office (NCAO) -- Administers north-of-Delta CVPIA refuge water conveyance agreements.					\$42,540	\$42,540	\$0	\$0	\$42,540	
1.3.8		0.40	Reclamation, NCAO -- Physical downloading of flow meter data on site; calibrate and maintain flow meters; provide QC/QA of data for Gray Lodge Flow Data Web site; maintain and repair 21 well pump meters at GLWA.					\$52,523	\$52,523	\$0	\$0	\$52,523	
1.3.9		0.06	Sacramento NWR Staff, Service -- Administer giant garter snake mitigation site in Sacramento Valley.					\$13,120	\$13,120	\$0	\$0	\$13,120	
1.3.10		0.55	Environmental Specialists, Reclamation -- Ensure environmental compliance for certain water acquisition projects is completed.					\$92,215	\$92,215	\$0	\$0	\$92,215	
1.3.11		1.12	Clerical & Supervisory Support, Reclamation -Provide clerical and supervisory support to the RWSP.					\$143,010	\$143,010	\$0	\$0	\$143,010	
1.3.12		0.90	Technical Service Center (TSC), Reclamation, Review and update plans for East Bear Creek Phase II. Review engineering and construction plans of new alternatives for Pixley, Sutter, and Mendota refuges comparing them to previous alternatives.					\$182,000	\$140,000	\$42,000	\$0	\$182,000	
1.3.13		0.08	Design and Construction Staff, Reclamation -- Provide engineering technical support to the RWSP.					\$15,000	\$15,000	\$0	\$0	\$15,000	
1.3.14		0.75	Mid-Pacific Construction Office (MPCO), Reclamation -- Design and construction management and planning. (Divided between MPCO staff members.)					\$150,000	\$100,000	\$50,000	\$0	\$150,000	
		5.98						<b>Subtotal Funding</b>	\$997,001	\$897,001	\$100,000	\$0	\$997,001
		5.92						<b>Reclamation</b>	\$983,881	\$883,881	\$100,000	\$0	\$983,881
		0.06						<b>Service</b>	\$13,120	\$13,120	\$0	\$0	\$13,120
		-						<b>Other</b>	\$0	\$0	\$0	\$0	\$0



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									Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources	
1.7	<b>Outreach and Public Involvement</b>												
1.7.1		0.20	Reclamation, Public Affairs Office -- Funding is for coordination of local public involvement plan for the BWGWD construction.  Reclamation Program Component Managers -- Attend bi-monthly (IRWMT) meetings to discuss refuge water issues including water needs, delivery schedules, water acquisitions, and allocations. Periodic public meetings with CVPIA stakeholders to discuss annual work plans and provide status updates. Periodic meetings on Sharing of Costs Agreement for Mitigation Projects and Improvements (SCAMPI). These are funded under program management and program support.					\$30,000	\$30,000	\$0	\$0	\$30,000	
		0.20						<b>Subtotal Funding</b>	\$30,000	\$30,000	\$0	\$0	\$30,000
		0.20						<b>Reclamation</b>	\$30,000	\$30,000	\$0	\$0	\$30,000
		0.00						<b>Service</b>	\$0	\$0	\$0	\$0	\$0
								<b>Other</b>	\$0	\$0	\$0	\$0	\$0
1.8	<b>Planning</b>												
1.8.2			Professional service contract to re-evaluate alternative solutions and project costs to deliver Inc. Level 4 water supplies to Pixley NWR.		Report		Y	\$350,000	\$350,000	\$0	\$0	\$350,000	
1.8.3			Pilot Aquifer Pump Testing -- Continue testing and water quality monitoring by Lawrence Berkeley Labs at various refuges within the San Joaquin Valley to further explore a groundwater conjunctive use program.		Report		N	\$100,000	\$100,000	\$0	\$0	\$100,000	
1.8.4			Planning activities for the East Bear Creek Phase II Project.		Report		N	\$236,057	\$36,057	\$200,000	\$0	\$236,057	
1.8.5			Complete value engineering study for the North Grasslands Water Conservation and Water Quality Control Project (N. Grasslands Water Conserv Proj).		Report		Y	\$50,000	\$0	\$50,000	\$0	\$50,000	
								<b>Subtotal Funding</b>	\$736,057	\$486,057	\$250,000	\$0	\$736,057
								<b>Reclamation</b>	\$736,057	\$486,057	\$250,000	\$0	\$736,057
								<b>Service</b>	\$0	\$0	\$0	\$0	\$0
								<b>Other</b>	\$0	\$0	\$0	\$0	\$0

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									Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources	
<b>1.9</b>	<b>Environmental Compliance</b>												
1.9.1			Ensure that water acquisition projects are in compliance with applicable State and Federal law. Preparation of environmental assessments or other environmental documents may be needed for water acquisitions, groundwater projects, etc. Environmental document preparation costs are covered under technical support, activity 1.3.10.		Report			\$0	\$0	\$0	\$0	\$0	
1.9.2		0.10	Finalize environmental work (biological assessment, biological opinion, and necessary permits) associated with the BWGWD Conveyance Project. Performed or administrated by Reclamation environmental staff.		Report		Y	\$20,000	\$20,000	\$0	\$0	\$20,000	
		0.10						<b>Subtotal Funding</b>	\$20,000	\$20,000	\$0	\$0	\$20,000
		0.10						<b>Reclamation</b>	\$20,000	\$20,000	\$0	\$0	\$20,000
		0.00						<b>Service</b>	\$0	\$0	\$0	\$0	\$0
		-						<b>Other</b>	\$0	\$0	\$0	\$0	\$0
<b>1.10</b>	<b>Design</b>												
1.10.1			North Grasslands Water Conservation and Water Quality Control Project (N. Grasslands Water Conserv Proj). Completion of Phase I (Feasibility); Implementation of Phase II (Design). Phases I & II funded in FY10.		Design Report and Feasibility Report		Y	\$0	\$0	\$0	\$0	\$0	
								<b>Subtotal Funding</b>	\$0	\$0	\$0	\$0	\$0
								<b>Reclamation</b>	\$0	\$0	\$0	\$0	\$0
								<b>Service</b>	\$0	\$0	\$0	\$0	\$0
								<b>Other</b>	\$0	\$0	\$0	\$0	\$0
<b>1.11</b>	<b>Construction</b>												
1.11.1			Modify construction contract to finalize transfer of East Bear Creek pumping plant to the Service.				Y	\$50,000	\$50,000	\$0	\$0	\$50,000	
1.11.2			Gray Lodge/Pixley Well Construction Project (ARRA #28.113) -- Construction activities to be completed in FY11. Project funded in FY10.				Y	\$0	\$0	\$0	\$0	\$0	
1.11.3			Volta Well Construction Project (ARRA #28.129) -- Construction activities to be completed in FY11. Project funded in FY10.				Y	\$0	\$0	\$0	\$0	\$0	
1.11.4			East Bear Creek Phase II -- Additional funding being provided to cover the total project cost currently estimated at \$24,000,000.				N	\$1,070,512	\$1,070,512	\$0	\$0	\$1,070,512	
								<b>Subtotal Funding</b>	\$1,120,512	\$1,120,512	\$0	\$0	\$1,120,512
								<b>Reclamation</b>	\$1,120,512	\$1,120,512	\$0	\$0	\$1,120,512
								<b>Service</b>	\$0	\$0	\$0	\$0	\$0
								<b>Other</b>	\$0	\$0	\$0	\$0	\$0

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									Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources	
1.12	<b>Monitoring</b>												
1.12.1			Water Quality Monitoring in the Grassland Resource Conservation District -- Real-time water quality monitoring will measure water volume as well as salt load of major water sources entering CVPIA wetlands in the Grasslands Ecological Area (GEA), and all major outflow draining from the GEA. Monitoring to be performed by GWD. Other partners include the Service and CDFG. First report expected September 2010.		Report		N	\$484,343	\$484,343	\$0	\$0	\$484,343	
1.12.2			Costs for water sampling analysis by contract laboratory for GLWA water quality monitoring.		Report		N	\$30,000	\$30,000	\$0	\$0	\$30,000	
								<b>Subtotal Funding</b>	\$514,343	\$514,343	\$0	\$0	\$514,343
								<b>Reclamation</b>	\$514,343	\$514,343	\$0	\$0	\$514,343
								<b>Service</b>	\$0	\$0	\$0	\$0	\$0
								<b>Other</b>	\$0	\$0	\$0	\$0	\$0
1.13	<b>Conveyance</b>												
1.13.1			Reclamation -- Costs to convey Level 2 refuge water supplies.		Acre Feet Level 2	364,681	Y	\$7,290,064	\$7,290,064	\$0	\$0	\$7,290,064	
1.13.2			Service -- Costs to convey Level 2 refuge water supplies.		Acre Feet Level 2	35,202	Y	\$1,004,449	\$1,004,449	\$0	\$0	\$1,004,449	
1.13.3			Reclamation -- Costs to convey Inc. Level 4 refuge water supplies. Delivery target is comprised of water expected to be acquired in FY11, permanently acquired water, and water that may be reallocated for delivery as Inc. Level 4 in FY11. The variability of acquisition costs and water availability requires planning to convey more water than shown in 1.6.5.		Acre Feet Inc. Level 4	46,290	Y	\$990,928	\$370,968	\$0	\$0	\$370,968	
								<b>Subtotal Funding</b>	\$9,285,441	\$8,665,481	\$0	\$0	\$8,665,481
								<b>Reclamation</b>	\$8,280,992	\$7,661,032	\$0	\$0	\$7,661,032
								<b>Service</b>	\$1,004,449	\$1,004,449	\$0	\$0	\$1,004,449
								<b>Other</b>	\$0	\$0	\$0	\$0	
1.14	<b>Other - Describe</b>												
1.14.1			CVPIA Refuge Water Supply Program Database -- Phase II. Develop design enhancements.				N	\$40,000	\$40,000	\$0	\$0	\$40,000	
								<b>Subtotal Funding</b>	\$40,000	\$40,000	\$0	\$0	\$40,000
								<b>Reclamation</b>	\$40,000	\$40,000	\$0	\$0	\$40,000
								<b>Service</b>	\$0	\$0	\$0	\$0	
								<b>Other</b>	\$0	\$0	\$0	\$0	

AWP Activity Number	Type of Activity	# of FTEs	Activity Name & Description	NMFS OCAP RPA#	Performance Metric	Performance Target	Complete this FY? Y/N	Total Project Cost	FY2011 Anticipated Funding				
									Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources	
		10.88	<b>TOTAL FTEs:</b>										
			<b>TOTAL FUNDING</b>					<i>Total Funding</i>	\$20,569,960	\$19,600,000	\$350,000	\$0	\$19,950,000
								<i>Reclamation</i>	\$19,279,062	\$18,309,102	\$350,000	\$0	\$18,659,102
								<i>Service</i>	\$1,290,898	\$1,290,898	\$0	\$0	\$1,290,898
								<i>Other</i>	\$0	\$0	\$0	\$0	\$0
			<b>ACQUISITION: Total Funding Breakdown</b>						\$8,000,000	\$8,000,000	\$0	\$0	\$8,000,000
			<b>Reclamation</b>						\$7,890,668	\$7,890,668	\$0	\$0	\$7,890,668
			<b>Service</b>						\$109,332	\$109,332	\$0	\$0	\$109,332
			<b>Other</b>						\$0	\$0	\$0	\$0	\$0
			<b>CONSTRUCTION: Total Funding Breakdown</b>						\$2,450,000	\$2,100,000	\$350,000	\$0	\$2,450,000
			<b>Reclamation (RFCP)</b>						\$1,867,201	\$1,867,201	\$0	\$0	\$1,867,201
			<b>Reclamation (SJBAP)</b>						\$550,000	\$200,000	\$350,000	\$0	\$550,000
			<b>Service (RFCP)</b>						\$32,799	\$32,799	\$0	\$0	\$32,799
			<b>Other</b>						\$0	\$0	\$0	\$0	\$0
			<b>CONVEYANCE Total Funding Breakdown</b>						\$10,119,960	\$9,500,000	\$0	\$0	\$9,500,000
			<b>Reclamation</b>						\$8,971,193	\$8,351,233	\$0	\$0	\$8,351,233
			<b>Service</b>						\$1,148,767	\$1,148,767	\$0	\$0	\$1,148,767
			<b>Other</b>						\$0	\$0	\$0	\$0	\$0
<b>1.16</b>	<b>Unfunded Needs</b>												
1.16.1			Conveyance Agreements, Inc. Level 4 -- Unfunded Need (There is possibility that some of this unfunded need may be met through prior year funding from certain agreements.)				Y	\$583,210	\$583,210	\$0	\$0	\$0	\$583,210
1.16.2			North Grasslands Water Conservation and Water Quality Control Project Phase III (Construction) -- Construct a conveyance system of pipes and pumps in the GWD to capture quality flows from operational spill and return upstream for delivery to the GRCD. Water deliveries will count towards CVPIA refuge allocation goals. Project to be initiated in 2011 contingent on available funding.				N	\$6,065,181	\$0	\$0	\$6,065,181	\$0	\$6,065,181
			<b>Total Unfunded Need</b>					\$6,648,391	\$583,210	\$0	\$6,065,181	\$0	\$6,648,391

Table 2 below summarizes the entire RWSP's proposed FY 2011 budget by key tasks.

**Table 2. FY 2011 Budget Breakout**

Task	Agency	FTE	LABOR			CONTRACTS		USBR Only Misc. Costs	Total Costs (Rounded to the Nearest Thousand)
			Direct Salary and Benefits Costs <sup>1/</sup>	Overhead (O/H) Costs on Salary & Benefits <sup>1/</sup>	FWS Overhead Burden Assess: 22% of Salary, Benefits & Labor O/H Costs <sup>2/</sup>	Contract, Grant, and Agreement Costs	FWS Overhead Assess: 6% Contract Costs/ 22% Utility Costs <sup>2/</sup>		
1.1 Program Management	FWS	1.00	\$179,232		\$39,431	\$0	\$0		\$218,663
	BOR	0.60	\$66,549	\$39,929		\$0		\$0	\$106,478
1.2 Program Support	FWS	0.25	\$44,808		\$9,858	\$0	\$0		\$54,666
	BOR	2.75	\$267,063	\$163,656		\$0		\$11,240	\$441,959
1.3 Technical Support	FWS	0.06	\$10,754		\$2,366	\$0	\$0		\$13,120
	BOR	5.92	\$614,926	\$368,955		\$0		\$0	\$983,881
1.6 Water Acquisitions	FWS		\$0		\$0	\$0	\$0		\$0
	BOR		\$0	\$0		\$7,004,840		\$0	\$7,004,840
1.7 Outreach and Public Involvement	FWS		\$0		\$0	\$0	\$0		\$0
	BOR	0.20	\$23,077	\$6,923		\$0		\$0	\$30,000
1.8 Planning	FWS		\$0		\$0	\$0	\$0		\$0
	BOR		\$0	\$0		\$736,057		\$0	\$736,057
1.9 Environmental Compliance	FWS		\$0		\$0	\$0	\$0		\$0
	BOR	0.10	\$12,121	\$7,879		\$0		\$0	\$20,000
1.11 Construction	FWS		\$0		\$0	\$0	\$0		\$0
	BOR		\$0	\$0		\$1,120,512		\$0	\$1,120,512
1.12 Monitoring	FWS		\$0		\$0	\$0	\$0		\$0
	BOR		\$0	\$0		\$514,344		\$0	\$514,344
1.13 Conveyance	FWS Level 2		\$0		\$0	\$546,154	\$32,769		\$578,923
	FWS Power		\$0		\$0	\$348,792	\$76,734		\$425,526
	BOR Level 2		\$0	\$0		\$7,290,064		\$0	\$7,290,064
	BOR Inc. L4		\$0	\$0		\$370,968		\$0	\$370,968
1.14 Other: Phase II RWSP Database	FWS		\$0		\$0	\$0	\$0		\$0
	BOR		\$0	\$0		\$40,000		\$0	\$40,000
<b>FWS Total Costs</b>		1.31	\$234,794		\$51,655	\$894,946	\$109,503		\$1,290,898
<b>BOR Total Costs</b>		9.57	\$983,736	\$587,343		\$17,076,784		\$11,240	\$18,659,102
<b>TOTAL ALL</b>		10.88	\$1,218,529	\$587,343	\$51,655	\$17,971,730	\$109,503	\$11,240	<b>\$19,950,000</b>

<sup>1/</sup> For FWS only: The FWS develops a bio-rate which is the combination of both the salary/benefit and related administrative costs. The FWS simple definition reads, "It is an average \$\$ rate that is developed and used for estimating project costs. It incorporates a biologists' salary and benefits, supervisory, clerical and biologist support costs and all other office operating costs related to completing project tasks.

<sup>2/</sup> FWS assesses an O/H Burden charge of 6% on all contracts/agreements related to budget object codes starting with 25, 41, and 32, and a charge of 22% on costs under all other budget object codes.

### ***Three-Year Budget Plan***

Reclamation's budgeting process is a three-year advance planning exercise. Table 3 presents the RWSP's estimated future budgets for fiscal years 2012, 2013, and 2014. It is important to emphasize that the budget costs presented in Table 3 indicate the RWSP capability only. These figures do not reflect future Congressional appropriations.

Regarding water acquisition costs shown in Table 3, the amounts shown assume that the RWSP would have the capability to purchase approximately 100,000 acre-feet of Incremental Level 4 Water each year. This quantity of water is substantially higher than the annual average acquisition of 58,401 acre-feet, but falls short of the total Incremental Level 4 required – 133,264 acre-feet. Incremental Level 4 Water is especially important to refuges located in the San Joaquin Valley, where the RWSP is attempting to supply water for permanent and semi-permanent wetlands in an arid and highly-altered environment.

Actions to improve existing, and construct new conveyance facilities (groundwater wells, canals, pipelines, pumping plants, etc.) at the five refuges currently without adequate conveyance facilities are expected to increase during 2012-2014. Specifically, the RWSP expects to complete final design and construction of conveyance facilities at the Biggs-West Gridley Water District and final design and construction of the East Bear Creek – Phase II project. It is anticipated that funding would be appropriated to complete these projects that would enable the delivery of full Level 4 Water to East Bear Creek NWR and Gray Lodge WA.

The costs associated with conveying approximately 495,000 acre-feet of Level 2 and Incremental Level 4 Water during 2012-2014 are shown in Table 3.

Finally, water quality monitoring is becoming increasingly more important, particularly in the San Joaquin Valley, in response to the Central Valley Regional Water Quality Control Board's more stringent water quality standards for the San Joaquin River. The RWSP currently has water quality monitoring projects in various CVPIA wetland areas for surface water and groundwater. These projects provide valuable data for decision making, environmental documentation and refuge management.

**Table 3. CVPIA Three-Year Budget Plan FY2012-2014**  
(\$ amounts in thousands)

Year	Description of Activities	Requested RF Funding	Requested W&RR Funding
2012	1.1 Program Management –Labor	370	0
	1.2 Program Support –Labor	599	0
	1.3 Technical Support – Labor	1,311	241
	1.6 Water Acquisition – Acquire 100,000 acre-feet of incremental level 4 water for refuges	20,253	0
	1.8 Planning – Begin environmental and design work for Sutter NWR alternatives	1,804	100
	1.11 Construction – Improvements to conveyance system at BWGWD	3,000	0
	1.12 Monitoring – Real-time water quality monitoring in the Grassland Ecological Area and Gray Lodge Wildlife Area	541	0
	1.13 Conveyance – Costs for annual conveyance of approximately 495,000 acre-feet of water to CVPIA refuges, including some pumping costs	8,662	2,246
	<b>TOTAL</b>	<b>36,540</b>	<b>2,587</b>
2013	1.1 Program Management – Labor	384	0
	1.2 Program Support – Labor	625	0
	1.3 Technical Support – Labor	1,322	241
	1.6 Water Acquisition – Acquire 100,000 acre-feet of incremental level 4 water for refuges	22,500	0
	1.8 Planning – Complete environmental and design work for Sutter NWR alternatives	608	100
	1.11 Construction – \$2M to \$5M additional funding for work at BWGWD; balance for Sutter NWR	10,500	0
	1.12 Monitoring – Real-time water quality monitoring in the Grassland Ecological Area and Gray Lodge Wildlife Area	543	0
	1.13 Conveyance – Costs for annual conveyance of approximately 495,000 acre-feet of water to CVPIA refuges, including some pumping costs	9,008	2,336
	<b>TOTAL</b>	<b>45,490</b>	<b>2,677</b>
2014	1.1 Program Management – Labor	400	0
	1.2 Program Support – Labor	648	0
	1.3 Technical Support – Labor	1,337	241
	1.6 Water Acquisition – Acquire 100,000 acre-feet of incremental level 4 water for refuges	25,000	0
	1.8 Planning – Begin environmental and design work for Pixley NWR alternatives	1,112	100
	1.11 Construction – Additional funding for Sutter; balance for East Bear Creek – Phase II	25,200	0
	1.12 Monitoring – Real-time water quality monitoring in the Grassland Ecological Area and Gray Lodge Wildlife Area	565	0
	1.13 Conveyance – Costs for annual conveyance of approximately 495,000 acre-feet of water to CVPIA refuges, including some pumping costs	9,369	2,429
	<b>TOTAL</b>	<b>63,631</b>	<b>2,770</b>

<sup>1</sup>Restoration Fund (RF) (Section 3407)

<sup>2</sup>Water and Related Resources (W&RR) Appropriations

Additional assumptions: RF funds are to acquire 100,000 acre-feet of Incremental Level 4 refuge water supplies for San Joaquin Valley refuges estimating \$200 per acre-foot beginning in FY2012 and expected price increases in FY2013 (\$225 per acre-foot) and FY2015 (\$250 per acre-foot).

**RWSP Monitoring Projects**

**Table 4. RWSP - FY 2011 Monitoring Projects**

<b>Project Information</b>	<b>Gray Lodge Wildlife Area</b>	<b>Grassland Ecological Area</b>
<b>Description:</b>	Monitor groundwater and surface water quality at GLWA pursuant to provision in the Agreement for the Reimbursement of Deep Well Pumping Costs on the Gray Lodge Wildlife Area Between the United States and the State of California, #05-WC-20-2903 (Agreement)	This water monitoring project is a proposed four-year study that will monitor the volume of water, as well as salt load, of all major water sources entering the CVPIA wetlands of the GEA, and all major outflows draining from the GEA.
<b>FY 2010 Project Complete?</b>	On-going project through termination of Agreement. FY 2010 samplings complete.	On-going project through September 30, 2012
<b>CVPIA annual work plan subtask number:</b>	Monitoring 1.12.1 and Technical Support 1.3.1	Monitoring 1.12.1 and Technical Support 1.3.1
<b>Scope of the monitoring effort:</b>	Within the Gray Lodge WA six groundwater wells, three points of delivery, and the primary discharge point are being monitored.	CVPIA refuges of the GEA
<b>Product/deliverable:</b>	Annual report providing analysis of collected data.	Annual report providing analysis of collected data.
<b>Cost:</b>	\$74,489 (\$44,489 labor and \$30,000 laboratory water analysis)	\$484,343
<b>Questions posed:</b>	Does the quality of groundwater supplies affect the overall quality of total water supplies provided to the Gray Lodge WA? What is the quality of surface water supplied at the points of delivery?	What is the quality of water entering and exiting the Los Banos WA, Volta WA, Salt Slough WA, Freitas NWR, Kesterson NWR, and the GRCD n the GEA?
<b>Objectives:</b>	Establish a baseline for groundwater and surface water quality at Gray Lodge WA. This data will be used in future environmental documentation required for renewal of Agreement. Data will be available to support meeting various water quality standards established by regulatory agencies.	Provide water quality data to refuge managers and others to facilitate a better understanding of the dynamics of water quantity and quality used to manage refuges.
<b>Results – expected or actual:</b>	Annual reports on water quality. Groundwater and surface water quality baseline established. Baseline data to support EA for agreement renewal. Data used as a tool in management of Gray Lodge WA.	Establish baseline data for water quality at specific locations within the GEA.

<b>Project Information</b>	<b>Gray Lodge Wildlife Area</b>	<b>Grassland Resource Conservation District</b>
<b>Data collection methods:</b>	Manual physical water sampling collection for organic compounds and automatic data collection for physical parameters via multi parameter sondes.	To date 42 of 43 real-time water quality monitoring stations have been installed or retrofitted and are being maintained at key locations throughout the GEA. Each station records data on flow, electrical conductivity and temperature.
<b>Data management:</b>	Digital files with raw data are archived by the MP-150 Environmental Division. Annual analysis report is produced.	Currently the project data is stored on the commercial Nivis web server. Nivis Inc. is a data storage provider, located on the East coast of the US that has established a service contract with YSI Inc. to support YSI EcoNet. The data remains on the Nivis site for a maximum of 3 years under the current service agreement. An alternative database solution will be needed for the project to preserve the data at the end of the 3 year storage period.
<b>Assessment:</b>	Analyses from annual reports indicate overall that both groundwater and surface water supplies meet current agricultural water quality limits and ambient water quality criteria. The conjunctive use of groundwater has proven beneficial in meeting the needs of the refuge and allowing Reclamation to meet its Level 2 obligation.	The first annual report has been drafted but not yet received in final form from the GWD.
<b>Use of information in future decision making:</b>	Water quality data will be used for refuge management as well as future environmental documentation required for renewal of Agreement.	Water quality data will be used by refuge managers and others to determine best management practices.
<b>NMFS OCAP BO RPA</b>	No	No

## ***RWSP Source Documents***

- Public Law 102-575, Title 34, Central Valley Project Improvement Act of 1992
- CVPIA Record of Decision
- Report on Refuge Water Supply Investigations, Central Valley Hydrologic Basin, California (3/1989)
- San Joaquin Basin Action Plan/Kesterson Mitigation Plan, Merced County, California (12/1989)
- San Joaquin Basin Action Plan and North Grasslands Area – Conveyance Facilities – Final EA/IS (12/1997)
- Conveyance of Refuge Water Supply Project, East Sacramento Valley Study Area – Final EA/IS and Proposed FONSI/Negative Declaration (12/1997)
- Conveyance of Refuge Water Supply Project, West Sacramento Valley Study Area – Final EA/IS and Proposed FONSI/Negative Declaration (12/1997)
- Conveyance of Refuge Water Supply, South San Joaquin Valley Study Area (Kern and Pixley National Wildlife Refuges) – Final EA/IS (10/2003)
- Conveyance of Refuge Water Supplies to the East Bear Creek Unit of the San Luis National Wildlife Refuge – Final E.A. (2/2006)
- Refuge Water Supply Conveyance Alternatives Refinement Memorandum (East and West Sacramento Valley) (5/1995)
- Refuge Water Supply Long-Term Water Supply Agreements – Sacramento River Basin – Final EA/IS (1/2001)
- Refuge Water Supply Long-Term Water Supply Agreements – Tulare Lake Basin – Final EA (1/2001)
- Refuge Water Supply Long-Term Water Supply Agreements, San Joaquin River Basin – Final EA/IS (1/2001)
- Report of Recommended Alternatives – Refuge Water Supply and San Joaquin Basin Action Plan Lands (4/1995)