

# Draft CVPIA Fiscal Year 2014 Annual Work Plan

**May 6, 2013**

*Program Title:*

**Refuge Water Supply Program - - Conveyance (Wheeling) Component  
CVPIA Section 3406(d)(1), (2) and (5)**

## ***Responsible Entities***

<b>Staff Name</b>	<b>Agency</b>	<b>Role</b>
Tim Rust	Reclamation	RWSP Manager
Dale Garrison	Service	Co-Lead
Brian Cary	CDFW	State Partner

## ***Overview of Refuge Water Supply Program***

Reclamation and the U.S. Fish & Wildlife Service (Service) have primary responsibility for the oversight and implementation of all aspects of the Refuge Water Supply Program (RWSP), which consists of three major components: water acquisition, water conveyance, and facilities construction. These agencies serve as the RWSP's primary contacts; represent the RWSP at various internal and external meetings; prepare and make presentations on the RWSP; and provide guidance and oversight to the technical support personnel on contracting, budget, and environmental issues.

The California Department of Fish and Wildlife (CDFW), as the State partner, oversees state wildlife areas, and provides guidance and technical assistance on cost share efforts, pursuant to CVPIA. In addition, Reclamation collaborates with the Grassland Water District (GWD) in the acquisition and delivery of water supplies to the Grassland Resource Conservation District (GRCD) wetlands. Reclamation, Service, CDFW, and GWD, working collaboratively together, plan and implement RWSP activities to meet wildlife refuge water supply needs, in accordance with CVPIA.

The RWSP's over arching goal is to ensure that all 19 CVPIA identified wetland habitat areas, hereinafter referred to as "refuges", annually receive water of specified quantity, of suitable flow rate and timing, and suitable quality to support their wetland and aquatic environments. These wetland areas include 13 National Wildlife Refuges (NWR), 5 State Wildlife Areas (SWA), and 1 private wetland area (GRCD).

The RWSP's two water types are defined as Level 2 (L2) water and Incremental Level 4 (IL4) water. L2 represents the annual average amount of water historically received by the refuges prior to 1989. Annually, Reclamation is required to provide 422,251 acre-feet of L2 water supplies.

IL4 water is the difference between L2 and Full Level 4 water supplies; it equals 133,264 AF. Each year, the RWSP strives to provide as much IL4 water as possible. IL4 water supplies are acquired through voluntary measures such as water conservation, conjunctive use, purchase, lease, donation, or similar activities.

Full Level 4 is the total annual amount of water identified for each refuge in CVPIA as required for optimum wetland and wildlife habitat development and management. The Full Level 4 water

delivery target for the 19 refuges is 555,515 AF and is satisfied when both L2 and IL4 water targets are met in full.

Each year between February and March, Reclamation provides the Interagency Refuge Water Management Team (IRWMT), which is comprised of representatives from Reclamation, the Service, CDFW, GWD, and the Central Valley Joint Venture, with an initial projection of anticipated Incremental Level 4 water purchases for that contract year. The IRWMT determines the allocation of the projected Incremental Level 4 supplies to the refuges. Concurrent with this process, the three refuge managing agencies (Service, CDFW, and GWD) develop their initial water delivery schedules for each refuge and submit them to Reclamation by March 1.

The RWSP strives to diversify its water sources. For example, the RWSP pursues groundwater projects in partnership with local water districts because groundwater does not require external conveyance if the source can be located at or near a refuge. The lower cost of groundwater is also an advantage, although downsides include groundwater of poorer quality in some locations, particularly in the San Joaquin Valley; the threat of aquifer depletion and land subsidence. Groundwater is monitored for toxins, pollutants and salinity so as not to degrade the general quality of water on the refuges. Several refuges rely at least in part on groundwater supplies, including Volta and Gray Lodge SWAs, Merced and Pixley NWRs, and the GRCD.

Numerous biological benefits have resulted from a reliable year-round water supply that adequately meets the delivery schedule for wetland management on CVPIA refuges. Wildlife refuges provide habitat supporting migrant waterfowl and shorebirds; resident wildlife; and the recovery of special status species such as the giant garter snake, and tricolored blackbirds. In addition, RWSP water supplies allow refuge managers to “flush” excess salts from wetlands while improving soil quality.

### ***Goals and Objectives for FY 2014 – Refuge Water Conveyance***

The Refuge Water Conveyance (Wheeling) Component (RWCC) endeavors to meet the mandate of Section 3406(d)(1), (2), and (5) of the CVPIA, to provide long-term, firm and reliable water supplies to 19 Federal, State, and private refuges located in the Central Valley of California.

This program has two primary performance goals, specifically, starting with Water Year 2002 forward:

- Annually provide/deliver L2 water supplies by specified amounts to the refuges totaling 422,251 acre-feet;
- Annually deliver IL4 acquired water supplies by specified amounts to the refuges totaling 133,264 acre-feet.

The RWCC anticipates delivering approximately 390,645 acre-feet of L2 and 55,338 acre-feet of IL4 water supplies to CVPIA refuges during Fiscal Year 2014. These projected water deliveries represent 93% of the L2 performance goal and 42% of the IL4 performance goal, respectively, based on the current budget of \$9.515M.

The RWCC expects to negotiate a new reimbursement agreement with the CDFW for the purpose of reimbursing operational costs associated with CVPIA groundwater pumping activities.

All costs associated with the acquisition and delivery of IL4 water supplies are subject to a 25% State cost share under CVPIA. The RWCC will continue the coordinated development of cost

share task orders to meet this requirement pursuant to the guidelines identified under the Sharing of Costs Agreement for Mitigation Projects and Improvements (SCAMPI).

### ***Source Documents to CVPIA Refuge Conveyance Program:***

- 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)

### ***Status of the Program***

The RWCC has delivered the full amounts of L2 water supplies to CVPIA refuges as scheduled by refuge managers, meeting their timing needs, since 1993, to the extent allowed by availability of external conveyance capacity, with the following exceptions:

- The Kern NWF did not receive any scheduled water during August 2012, and those quantities of water delivered in September 2012 did not meet the refuge's schedule. A delay in execution of a new conveyance agreement between Reclamation and the California Department of Water Resources (DWR) resulted in a lapse of conveyance of Kern NWR water supplies down the California Aqueduct by the DWR.
- East Bear Creek Unit (EBC Unit) has not received full Level 2 water supplies nor have water deliveries met the refuge's scheduled needs since construction of the East Bear Pumping Plant (EBPP) was considered substantially complete and operational at the end of 2010. From 2011 to present, deliveries to EBC Unit have been sporadic due to unexpected EBPP operational problems and challenges in obtaining sufficient water supplies that can be delivered through available water conveyance systems specific to the unique location of the EBC Unit.

The RWCC has delivered all IL4 water as acquired on an annual basis since 1994.

The RWCC continues to assure that full L2 water supplies are delivered to all CVPIA refuges

with sufficient external conveyance capacity based on individual refuge delivery schedules. The RWCC also strives to deliver as much L2 water as possible, when feasible, to those refuges still without sufficient external conveyance capacity. And the RWCC continues to deliver the full amount of acquired IL4 on an annual basis to CVPIA refuges.

Reclamation has entered into five long-term water supply contracts with GWD, the Service, and CDFW which established Reclamation's commitment to the CVPIA delivery mandates. The contracts are: two with CDFW covering Gray Lodge, Los Banos, Volta, Mendota and North Grasslands WAs; two with the Service covering Sacramento, Delevan, Colusa, Sutter, San Luis, Merced, Kern and Pixley NWRs; and one with GWD for the Grassland Resource Conservation District (GRCD) which is comprised of privately-owned and managed wetlands.

Currently, nine long-term conveyance agreements (15-50 years) are utilized to convey CVPIA surface water supplies to the refuges. Reclamation administers 8 of these agreements, and the Service administers one of these agreements. The Program utilizes cooperative agreements to reimburse delivering entities for costs of conveying L2 and IL4 water supplies through Federal, State, and private water distribution systems to the refuges. These long-term agreements are with Henry Miller Reclamation District (aka the San Luis Canal Company) (two agreements), Central California Irrigation District, GWD, San Luis Delta-Mendota Water Authority, Buena Vista Water Storage District, California State Department of Water Resources, BWGWD, and Glenn-Colusa Irrigation District. The RWCC directly manages and administers six south-of-Delta conveyance agreements, and the Northern California Area Office administers two conveyance agreements for north-of-Delta, with oversight by the RWCC. The Service Region 8 administers one of the two SLCC conveyance agreements with the service area located south-of-Delta.

Lack of sufficient external conveyance capacity for some refuges impacts the ability of the RWCC to deliver full L2 and IL4 water supplies to all CVPIA refuges. Currently, four external conveyance facility capacity improvement construction projects remain to be completed affecting water deliveries to four CVPIA refuges.

### ***Adaptive Management***

CVPIA identifies a number of methods to utilize in the implementation of the Refuge Water Supply Program. In addition to these methods, the RWCC continues to explore opportunities to employ adaptive management techniques in order to meet those refuge conveyance obligations that, to date, have not been fulfilled due to constraints beyond the RWCC's control and also to meet unexpected or emergency situations.

One such idea under the convention of adaptive management currently being investigated is to utilize a local groundwater recharge basin in order to efficiently and effectively satisfy the full L4 water supply needs of Pixley NWR. The Pixley NWR is one of four refuges awaiting completion of planned external conveyance capacity improvement projects. Since the passage of CVPIA, Pixley NWR has been completely dependent upon a single groundwater well on the refuge, providing its only reliable water supplies, averaging 12% of Pixley NWR's CVPIA allocation since 2002. The RWCC completed construction of two additional groundwater wells at Pixley NWR in FY2012 with American Recovery and Reinvestment Act funding. Production from the new wells will begin in FY2014. Groundwater from these wells will provide Pixley NWR with its full L2 supplies on an annual basis for the first time, and potentially some of the IL4 water allocation. However, a local concern about using groundwater for the full L4 allocation at Pixley NWR, is that it may result in a potential overdraft of the regional aquifer.

The Preferred Alternative for conveying full L4 water to Pixley NWR, as identified in the RWSP planning document, is the construction of several miles of new underground pipeline linking the Friant-Kern Canal and the refuge, at a current estimated construction cost of \$25,000,000. This pipeline was deemed necessary because of the high water losses that would be incurred if Deer Creek, with its highly sandy soils, were used for conveyance purposes.

An adaptive alternative to this idea would be to actually take advantage of these sandy soils, working in concert with regional irrigation districts, to flow water into the local recharge basin situated near the refuge in amounts equivalent to offset groundwater pumped on this refuge. This would allow the construction of two additional groundwater wells. Five groundwater wells would potentially have the capability to provide full L4 water supplies to meet Pixley NWR's CVPIA allocation. Potential benefits would be provided both to the RWSP by significantly reducing the capital cost of constructing the pipeline alternative, and to the local participating districts, who would have the local aquifer enhanced in an area historically prone to overdraft and land subsidence.

Another example of implementing adaptive management relates to the Sutter NWR. Similar to Pixley NWR, Sutter NWR is another one of four refuges awaiting completion of planned external conveyance capacity improvement projects. The major portion of Sutter NWR lies within the Sutter Bypass, approximately 82%. This portion of the refuge has been dependent on receiving limited water supplies from the Sutter Bypass through exercising Sutter NWR's riparian water rights, using primarily gravity feed for diversion onto the refuge. This will continue to be the only surface water source available to Sutter NWR until Reclamation completes the needed conveyance facilities improvement construction project. The Sutter Bypass is operated by the California Department of Water Resources (CDWR) predominantly for flood control. Sutter NWR can only divert water from the Sutter Bypass when there is sufficient quantities and the water level in the Sutter Bypass is maintained at higher levels. In recent years, CDWR has operated the Sutter Bypass at lower water levels during the time of the year when Sutter NWR requires significant water for habitat flood up and wetlands maintenance. The lower water level in the Sutter Bypass effectively reduces the amount of water that can be diverted through gravity feed.

In 2012, the RWCC provided funds to the Service to rent temporary lift pumps for pumping water from the Sutter Bypass onto the refuge, therefore avoiding the problems associated with gravity feed reliance. Funding also covered diesel and Service overtime labor required to operate the temporary lift pumps. The lift pumps provided an increase of water delivery reliability for wetlands flood up and fall/winter habitat management, and in addition benefitted the refuge's hunting program. The RWCC has identified FY13 funding to continue this activity, and plans to continue to provide funding for this purpose until completion of the conveyance construction project relieves this need.

Table 1. FY2014 Proposed Activities and Costs

CVPIA Section 3406 (d)(1)(2)(5), Refuge Water Conveyance Program

	3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014				
	Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
<b>Total Funding</b>	\$10,015,000	\$0	\$0	\$258,760	\$10,273,760
Reclamation	\$9,188,575	\$0			\$9,188,575
Service	\$826,425	\$0			\$826,425
CA DFG			\$0	\$0	\$0
CA DWR			\$0	\$0	\$0

1.1 Program Management											
AWP Activity Number	Activity Name	Activity Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
1.1.1	Program Manager	Provides Reclamation administrative oversight for all aspects of the Refuge Water Conveyance Component of the Refuge Water Supply Program (RWSP). Serves as a primary contact and coordinator; represents the Conveyance Component at various internal and external meetings. Prepares and makes presentations on the RWSP. Provides guidance and oversight to technical support personnel on contracting, budget, and environmental issues. Has primary responsibility for RWSP long and short-term strategy. Participates in Interagency Refuge Water Management Team (IRWMT) meetings, CVPIA stakeholder public meetings, and Sharing of Costs Agreement for Mitigation Projects and Improvements (SCAMPI).	BOR	0.15			\$31,027				\$31,027
1.1.2	Program Co-lead	Provides Service biological oversight for all aspects of the Refuge Water Conveyance Component of the RWSP. Serves as a primary contact and coordinator; represents the Conveyance Component at various internal and external meetings. Prepares and makes presentations on the RWSP. Provides guidance and oversight to technical support personnel on contracting, budget, and environmental issues. Has primary responsibility for RWSP long and short-term strategy. Participates in IRWMT meetings, CVPIA stakeholder public meetings, and SCAMPI.	FWS	0.40			\$89,215				\$89,215
							<b>Sub-Total for Program Management, FY2014</b>				
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
<b>Subtotal Funding</b>							\$120,242	\$0	\$0	\$0	\$120,242
<b>Reclamation</b>							\$31,027	\$0			\$31,027
<b>Service</b>							\$89,215	\$0			\$89,215
<b>CA DFG</b>									\$0	\$0	\$0
<b>CA DWR</b>									\$0	\$0	\$0

1.2		Program Support										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014					
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources	
1.2.1	Refuge Water Conveyance Component Lead	Manages, provides oversight, and administers the Refuge Water Conveyance Component. Negotiates agreements and contracts for the conveyance of water supplies and other conveyance-related actions. Leads the Interagency Refuge Water Management Team (IRWMT). Participates in CVPIA stakeholder public meetings and SCAMPI. Administers refuge water supply and conveyance contracts. Identifies and develops projects to further progress towards performance goals. Provides direction and oversight for conveyance budget development and for technical support personnel on conveyance-related actions and projects. Coordinates actions and projects with multiple government agencies, Reclamation offices, NGOs, and stakeholders.	BOR	1.00			\$174,068					\$174,068
1.2.2	RWSP Support Specialist	Develops conveyance component budget and provides support services for Refuge Water Conveyance Component -- reconciles invoices, enters conveyance data, assists with annual work plan preparation.	BOR	0.60			\$85,811					\$85,811
1.2.3	Program Oversight	Supervises MP-410 Program Management Branch which includes the Refuge Water Conveyance Component.	BOR	0.16			\$32,441					\$32,441
1.2.4	Administrative Support	Provides administrative support to the MP-410 Program Mgmt Branch, including Refuge Water Conveyance Component.	BOR	0.16			\$14,676					\$14,676
1.2.5	CVPIA Program Administration	Program staff hours are inclusive of the time DFG staff commits to the administration and implementation of the Refuge Program under CVPIA.	CDFW	0.00							\$26,414	\$26,414
1.2.6	CVPIA Implementation Division Chief	Provide coordination support for CVPIA reporting requirements.	FWS	0.10			\$22,304					\$22,304
							<b>Sub-Total for Program Support, FY2014</b>					
							<b>Restoration Fund</b>	<b>Water and Related Resources</b>	<b>State Cash</b>	<b>State In-Kind</b>	<b>Total All Sources</b>	
							<i>Subtotal Funding</i>	\$329,300	\$0	\$0	\$26,414	\$355,714
							<i>Reclamation Service</i>	\$306,996	\$0			\$306,996
							<i>CA DFG</i>	\$22,304	\$0			\$22,304
							<i>CA DWR</i>			\$0	\$0	\$0

1.3		Technical Support				3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014					
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
			Name	Fractional FTE							
1.3.1	Environmental Compliance	Develop environmental compliance for refuge water conveyance projects.	BOR	0.16			\$29,137				\$29,137
1.3.2	Environmental Compliance	Develop environmental compliance for refuge water conveyance projects.	BOR	0.10			\$15,977				\$15,977
1.3.3	Water Quality Monitoring	Implementation and oversight of L2 water quality monitoring at 12 sampling sites on Gray Lodge Wildlife Area (GLWA) and 2 sampling sites on the Los Banos Wildlife Area to assure both groundwater and recaptured returns flows continue to meet regional water quality standards.	BOR	0.40			\$74,000				\$74,000
1.3.4	Website IT Support	Provide IT support to the GLWA Flow Data Web site, which provides real-time information about surface water deliveries.	BOR	0.06			\$5,000				\$5,000
1.3.5	Contracts/Agreements Support	Process contract and conveyance agreement obligations, payments, and modifications.	BOR	0.13			\$15,000				\$15,000
1.3.6	SOD CVP Delivery Data	Enter data for CVP water delivered to south-of-Delta (SOD) refuge into BOR WORKS database. BOR WORKS is Mid-Pacific Region's database to document delivery of CVP water. This labor is not subject to Cost Share.	BOR	0.03			\$4,793				\$4,793
1.3.7	Agreement Admin - NCAO	Administer north-of-Delta (NOD) CVPIA refuge water conveyance agreements.	BOR	0.08			\$15,639				\$15,639
1.3.8	Flow/Pump Meters Management	Collect water delivery data from flow meters at Gray Lodge WA, perform QA/QC on flow data, and coordinate data with other Reclamation staff. Perform maintenance and calibrations on flow meters and groundwater pump meters. Collect, perform QA/QC, and analyze flow data from Bear Creek.	BOR	0.15			\$30,347				\$30,347
1.3.9	Cultural Resources	Provide cultural resources support for Refuge Water Conveyance projects.	BOR	0.03			\$5,000				\$5,000
1.3.10	GIS Map Printing	Printing of Geographic Information Systems (GIS) maps as requested by Refuge Conveyance Component.	BOR	0.04			\$5,000				\$5,000
1.3.11	O/T Labor for Temp Lift Pumps	Operation of temporary lift pumps at Sutter NWR during fall. O/T labor required on weekends since temporary lift pumps must be monitored on a 12-24 hours cycle for lubrication and diesel refills.	FWS	0.02			\$5,000				\$5,000
							<b>Sub-Total for Technical Support, FY2014</b>				
							<b>Restoration Fund</b>	<b>Water and Related Resources</b>	<b>State Cash</b>	<b>State In-Kind</b>	<b>Total All Sources</b>
							\$204,893	\$0	\$0	\$0	\$204,893
							<i>Reclamation Service</i>	\$199,893	\$0		\$199,893
							<i>CA DFG</i>	\$5,000	\$0		\$5,000
									\$0	\$0	\$0
									\$0	\$0	\$0

3.1		Land or Water Acquisition or Water Conveyance		3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014							
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
3.1.1	Level 2 surface supplies CVPIA Refuges	Costs to convey Level 2 refuge surface water supplies (305,306 ac-ft) to boundaries of CVPIA refuges with sufficient external conveyance capacity, excluding the two SOD refuges served by the FWS surface water conveyance agreement and those Level 2 supplies provided from diverse sources or delivered at no cost to the Refuge Conveyance Program. FY14 budget leaves a need of \$792,552 required for the conveyance of identified L-2 AF; it is currently estimated that this need may be covered with prior year funds. (The total of \$7,053,267 includes \$500K realignment from Refuge Construction FY14 budget. This realignment is to offset \$500K of Refuge Conveyance FY13 funds that were realigned to Refuge Construction in May 2013 to fund a contract for a feasibility study on Sutter NWR conveyance system. Certain FY13 conveyance costs would not be invoiced until early FY14, which provided the opportunity for the Refuge Conveyance Program to realign these funds to the Refuge Construction Program on a temporary basis.)	BOR	0.00	0	305,306 AF	\$7,053,267				\$7,053,267
3.1.2	Power costs for Pumping Level 2 water	L-2 Power costs for groundwater pumping, pumping plant operation, and lift pumping required to elevate surface water supplies delivered at refuge boundaries up to refuge unit distribution system elevation level. Target acre feet only applies to the following water from diverse sources: groundwater pumping at Gray Lodge WA (5,000 af) and Pixley NWR (1,280 af) and East Bear Cr. Unit (4,000 af). (East Bear Cr. Unit is expected to receive project use energy (PUE) by WY2014; WAPA power will be directly invoiced to Reclamation.) Pumping plant and lift pumping activities apply to surface water acre feet already counted in 3.1.1.	BOR	0.00	0	10,280 AF	\$565,000				\$565,000
3.1.3	Level 2 surface supplies San Luis and W. Bear Creek Units	Costs to convey 100% Level 2 refuge surface water supplies to boundaries of two SOD refuges (San Luis (19,000 af) and W. Bear Cr. Units (7,207 af).	FWS	0.00	0	26,207 AF	\$652,816				\$652,816
3.1.4	Power costs for Pumping L2 water	L-2 Power costs for groundwater pumping, pumping plant operation, and lift pumping required to elevate surface water supplies delivered at refuge boundaries up to refuge unit distribution system elevation level. Target acre feet only applies to groundwater pumping (4,000 AF groundwater at Merced NWR). Lift pumping activity applies to surface water acre feet already counted in 3.1.1.	FWS	0.00	0	4,000 AF	\$57,090				\$57,090
3.1.5	Level 2 from Diverse Sources	Level 2 surface water supplies provided from diverse sources with NO conveyance cost or power cost to Refuge Water Conveyance Program (Sutter NWR (16,552 af) - riparian rights; Gray Lodge WA (18,800 af) - water rights water; and Merced NWR (9,500 af) - mitigation water from Merced I.D. under FERC license).	BOR	0.00	0	4,4852 AF	\$0				\$0

3.1.6	Inc. Level 4 NOD	Costs to deliver Inc. Level 4 surface water to NOD refuge(s) (acquired permanent water rights)	BOR	0.00	0	3,300 AF	\$63,690				\$63,690	
3.1.7	Inc. Level 4 to SOD refuges	Costs to convey Incremental Level 4 refuge surface water supplies (34,538 ac-ft) to boundaries of SOD CVPIA refuges with sufficient external conveyance capacity, excluding the two SOD refuges served by the FWS surface water conveyance agreement - no Inc. L-4 water is anticipated to be conveyed thru the FWS agreement. FY14 budget leaves a need of \$583,090 required for the conveyance of identified Inc. L-4 AF; it is currently estimated that this need may be covered with prior year funds.	BOR	0.00	0	34,538 AF	\$355,202				\$355,202	
3.1.8	Inc. L-4 conveyance via Volta Wells	O&M costs for pumping Inc. Level 4 groundwater from Volta wells.	BOR	0.00	0	2,500 AF	\$137,500				\$137,500	
3.1.9	Power costs for Pumping Inc. L-4 water	Inc. L-4 PG&E power costs for groundwater pumping and lift pumping Target acre feet applies to the following water from diverse sources: groundwater pumping at Pixley NWR (500 AF) and Los Banos WA (3,000 AF). Also covers PG&E costs for groundwater pumping at Volta wells; however, the respective AF are included in 3.1.8 above.	BOR	0.00	0	3,500 AF	\$430,000				\$430,000	
3.1.10	Inc. L-4 conveyance at GWD Groundwater	Inc. L-4 water delivered with no conveyance costs to Refuge Water Conveyance Program. 1,500 AF surface water via Merced ID FERC mitigation agreement. 10,000 AF groundwater via Grassland Water District Pilot Agreement (pending FWS review/continued approval and pending execution of Reclamation/GWD pilot agreement extension).	BOR	0.00	0	11,500 AF	\$0				\$0	
3.1.11	Power costs for Lift Pumping	Power costs are those used for initial lift pumps at Volta, Los Banos, Mendota, China Island, and Salt Slough Wildlife Area boundaries to raise CVP water delivered by the BOR to an elevation suitable for use within CVPIA Wildlife Areas.	CDFW	0.00	0	0				\$232,346	\$232,346	
							<b>Sub-Total for Water Conveyance, FY2014</b>					
							<b>Restoration Fund</b>	<b>Water and Related Resources</b>	<b>State Cash</b>	<b>State In-Kind</b>	<b>Total All Sources</b>	
							<i>Subtotal Funding</i>	\$9,314,565	\$0	\$0	\$232,346	\$9,546,911
							<i>Reclamation Service</i>	\$8,604,659	\$0			\$8,604,659
							<i>CA DFG</i>	\$709,906	\$0			\$709,906
									\$0	\$0	\$0	
									\$0	\$0	\$0	

4.1		Monitoring (Programmatic)										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014					
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources	
4.1.1	Gray Lodge WA Water Quality Monitoring	Contract laboratory water sampling analysis costs for Gray Lodge Wildlife Area (GLWA) water quality monitoring program. Water samples taken from 12 sites 3 x year.	BOR	0.00	0	0	\$23,000					\$23,000
4.1.2	Los Banos WA Water Quality Monitoring	Contract laboratory water sampling analysis costs for Los Banos Wildlife Area water quality monitoring program. Water samples taken from 2 sites 12 x year.	BOR	0.00	0	0	\$23,000					\$23,000
							<b>Sub-Total for Monitoring (Programmatic), FY2014</b>					
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources	
							<i>Subtotal Funding</i>	\$46,000	\$0	\$0	\$0	\$46,000
							<i>Reclamation</i>	\$46,000	\$0			\$46,000
							<i>Service</i>	\$0	\$0			\$0
							<i>CA DFG</i>			\$0	\$0	\$0
							<i>CA DWR</i>			\$0	\$0	\$0

4.2		Research (Evaluations, Studies, Investigations)										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (d)(1)(2)(5) Requested Funding for Fiscal Year 2014					
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources	
4.2.1	Bear Creek Water Losses Study and Evaluation	Collect and evaluate flow data to determine water losses on the East Bear Creek Unit of the San Luis NWR Complex. Project funded in FY2010. Reclamation labor in FY13 included in 1.2.1 and 1.3.7; no cost for FWS labor.	BOR	0.00	0	0	\$0					\$0
							<b>Sub-Total for Research, FY2014</b>					
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources	
							<i>Subtotal Funding</i>	\$0	\$0	\$0	\$0	\$0
							<i>Reclamation</i>	\$0	\$0			\$0
							<i>Service</i>	\$0	\$0			\$0
							<i>CA DFG</i>			\$0	\$0	\$0
							<i>CA DWR</i>			\$0	\$0	\$0

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

Table 2. FY2015 Proposed Activities and Costs

CVPIA Section 3406 (d)(1)(2)(5),

Refuge Water Conveyance Program

	3406 (d)(1)(2)(5) Requested Funding For FY 2015			
	Restoration Fund	Water and Related Resources	State Cash	Total All Sources
<b>Total</b>	\$14,900,000	\$0	\$258,760	\$15,158,760
<b>US Bureau of Reclamation</b>	\$14,802,959	\$0		\$14,802,959
<b>US Fish and Wildlife Service</b>	\$97,041	\$0		\$97,041
<b>California Dept of Fish and Wildlife</b>			\$258,760	\$258,760
<b>California Dept of Water Resources</b>			\$0	\$0

Task	Project Name	Project Description	Federal Costs(\$)				State Cost Share (\$)		Total Costs (\$)
			BOR Restoration Fund	BOR W&RR Fund	FWS Restoration Fund	FWS W&RR Fund	CA DFW	CA DWR	
<b>Program Mgmt &amp; Support</b>			\$554,054		\$97,041		\$26,414		\$677,509
<b>Project 1</b>	Water Quality Monitoring	Contract lab to analyze water quality from samples of groundwater and recirculated water obtained at Gray Lodge and Los Banos Wildlife Areas.	\$48,300						\$48,300
<b>Project 2</b>	Level 2 Conveyance	Reclamation - Convey Level 2 water supplies to CVPIA refuges (approximately 372,293 AF)	\$9,748,209						\$9,748,209
<b>Project 3</b>	Level 2 Conveyance	FWS - Convey Level 2 water supplies to CVPIA refuges (approximately 30,207 AF)	\$740,541						\$740,541
<b>Project 4</b>	Inc. Level 4 Conveyance	Convey Inc. Level 4 water supplies to CVPIA refuges (approximately 71,000 AF)	\$3,711,855						\$3,711,855

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

Task	Project Name	Project Description	Federal Costs(\$)				State Cost Share (\$)		Total Costs (\$)
			BOR Restoration Fund	BOR W&RR Fund	FWS Restoration Fund	FWS W&RR Fund	CA DFW	CA DWR	
<b>Project 5</b>	CDFW Power Costs for Lift Pumping	CDFG Power- Power costs are those used for initial lift pumps at Volta, Los Banos, Mendota, China Island, and Salt Slough Wildlife Area boundaries to raise CVP water delivered by the BOR to an elevation suitable for use within CVPIA Wildlife Areas.	\$0				\$232,346		\$232,346
<b>Project 6</b>	Bear Creek Water Losses Study and Evaluation	Collect and evaluate flow data to determine water losses on the East Bear Creek Unit of the San Luis NWR Complex. Project funded in FY2010.	\$0						\$0

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

Table 2. FY2016 Proposed Activities and Costs

CVPIA Section 3406 (d)(1)(2)(5),

Refuge Water Conveyance Program

	3406 (d)(1)(2)(5) Requested Funding For FY 2016			
	Restoration Fund	Water and Related Resources	State Cash	Total All Sources
<b>Total</b>	\$13,200,000	\$0	\$258,760	\$13,458,760
<b>US Bureau of Reclamation</b>	\$12,327,759	\$0		\$12,327,759
<b>US Fish and Wildlife Service</b>	\$872,241	\$0		\$872,241
<b>California Dept of Fish and Wildlife</b>			\$258,760	\$258,760
<b>California Dept of Water Resources</b>			\$0	\$0

Task	Project Name	Project Description	Federal Costs(\$)				State Cost Share (\$)		Total Costs (\$)
			BOR Restoration Fund	BOR W&RR Fund	FWS Restoration Fund	FWS W&RR Fund	CA DFW	CA DWR	
<b>Program Mgmt &amp; Support</b>			\$576,216		\$100,923		\$26,414		\$703,553
<b>Project 1</b>	Water Quality Monitoring	Contract lab to analyze water quality from samples of groundwater and recirculated water obtained at Gray Lodge and Los Banos Wildlife Areas.	\$50,715						\$50,715
<b>Project 2</b>	Level 2 Conveyance	Reclamation - Convey Level 2 water supplies to CVPIA refuges (approximately 372,293 AF).	\$9,822,319						\$9,822,319
<b>Project 3</b>	Level 2 Conveyance	FWS - Convey Level 2 water supplies to CVPIA refuges (approximately 30,207 AF).			\$771,318				\$771,318
<b>Project 4</b>	Inc. Level 4 Conveyance	Convey Inc. Level 4 water supplies to CVPIA refuges (approximately 65,000 AF)	\$1,878,509						\$1,878,509

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

Task	Project Name	Project Description	Federal Costs(\$)				State Cost Share (\$)		Total Costs (\$)
			BOR Restoration Fund	BOR W&RR Fund	FWS Restoration Fund	FWS W&RR Fund	CA DFW	CA DWR	
<b>Project 5</b>	CDFW Power Costs for Lift Pumping	CDFG Power- Power costs are those used for initial lift pumps at Volta, Los Banos, Mendota, China Island, and Salt Slough Wildlife Area boundaries to raise CVP water delivered by the BOR to an elevation suitable for use within CVPIA Wildlife Areas.					\$232,346		\$232,346
<b>Project 6</b>	Bear Creek Water Losses Study and Evaluation	Collect and evaluate flow data to determine water losses on the East Bear Creek Unit of the San Luis NWR Complex. Project funded in FY2010.	\$0						\$0

**Table 3 – Proposed Monitoring Activity**

<b>Project Description:</b>	Monitor groundwater and surface water quality at Gray Lodge Wildlife Area 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
<b>FY 2013 Project Complete?</b>	On-going project through term of agreement. FY2013 samplings complete
<b>CVPIA annual work plan subtask number:</b>	Monitoring 4.1.1 and Technical Support 1.3.3
<b>Scope of the monitoring effort:</b>	Gray Lodge Wildlife Area (GLWA)
<b>Product/deliverable:</b>	Annual report providing analysis of collected data
<b>Cost:</b>	\$74,000 annually
<b>Questions posed:</b>	Does the quality of groundwater supplies affect the overall quality of total water supplies provided to the GLWA?
<b>Objectives:</b>	Establish a baseline for water quality for use in future environmental documentation required for renewal of Agreement.
<b>Results – expected or actual:</b>	Establish baseline data for water quality at the GLWA
<b>Data collection methods:</b>	Manual physical water sampling collection for organic compounds and automatic data collection for physical parameters via multi-parameter sondes.
<b>Data management:</b>	Digital files with raw data are archived by the MP-150 Environmental Division. Annual analysis report is produced.
<b>Assessment:</b>	To date, collective water supplies at the GLWA meet the agricultural water quality limits and ambient water quality criteria.
<b>Use of information in future decision making:</b>	Water quality data will be used in future environmental documentation required for renewal of Agreement.

**Table 3 – Proposed Monitoring Activity**

<b>Project Description:</b>	Monitor groundwater and surface water quality at 2 sites on the Los Banos Wildlife Area pursuant to provision in a reimbursement agreement with the California Department of Fish and Wildlife for lift pumping and groundwater pumping costs.
<b>FY 2013 Project Complete?</b>	Project to be initiated approximately July 2013.
<b>CVPIA annual work plan subtask number:</b>	Monitoring 4.1.2 and Technical Support 1.3.3
<b>Scope of the monitoring effort:</b>	Los Banos Wildlife Area (LBWA)
<b>Product/deliverable:</b>	Monthly report providing analysis of collected data
<b>Cost:</b>	\$53,000 annually
<b>Questions posed:</b>	Does the quality of groundwater and recirculated water supplies meet specific criteria established for the Regional Water Board, either independently or blended with surface water supplies in the San Luis Canal?
<b>Objectives:</b>	Assure groundwater and recirculated water meet established water quality standards for delivery to CVPIA refuges as Incremental Level 4 water.
<b>Results – expected or actual:</b>	Groundwater and recirculated water supplies meet acceptable water quality standards for delivery to CVPIA refuges as Incremental Level 4 water.
<b>Data collection methods:</b>	Manual physical water sampling collection for organic compounds and automatic data collection for physical parameters via multi-parameter sondes.
<b>Data management:</b>	Digital files with raw data are archived by the MP-150 Environmental Division. Annual analysis report is produced.
<b>Assessment:</b>	Too early in project to make assessment.
<b>Use of information in future decision making:</b>	Water quality data will be used to determine if groundwater and recirculated water may continue to be used as a portion of Incremental Level 4 water deliveries to CVPIA refuges.