

Central Valley Refuge Needs

2025

Central Valley wildlife refuges need funding for water-related expenses to maintain, enhance, and restore wetlands that provide habitat for multiple species and recreation opportunities for the public. One-time funding needs include: infrastructure, planning/project design, water acquisition, and water conveyance. Refuges also need adequate funding to support annual ongoing costs for spot market water acquisitions, conveyance/wheeling costs and general maintenance activities.

Estimated one-time funding needs are listed by refuge below. Total estimated costs of one-time funding needs for Central Valley Project Improvement Act (CVPIA) Refuges range from \$114,215,000 to \$175,765,000, while total costs for non-CVPIA Refuges range from \$25,355,000 to \$33,515,000. Although not listed, note that to comply with the CVPIA, approximately 134,264 acre-feet of water must still be acquired, either purchased annually or permanently. In addition, long-term water conveyance facilities and agreements still need to be established for Sutter NWR, Mendota WA, and Pixley NWR to comply with CVPIA.

PHOTO: Steve Emmons

North of Delta CVPIA Refuges

Water Conveyance/Wheeling (all refuges)

The total Incremental Level 4 water allocation for the five north of Delta refuges is 27,750 acre-feet. The average annual unit cost for Reclamation to convey this surface water to north of Delta refuges is approximately \$29 per acre-foot.

Sacramento NWR

Internal Water System Engineering Assessment	\$600,000
25-1 Delivery Canal Repair and Improvements	\$1,000,000

Delevan NWR

Delevan NWR Internal Water System Engineering Assessment	\$450,000
Maxwell Irrigation District Water Exchange	Undetermined Cost

North of Delta

Continued

Colusa NWR

Colusa NWR Internal Water System Engineering Assessment	\$400,000
Delivery Canal Siphon Under Ohm Road	\$500,00-\$1,000,000

Sutter NWR

Conveyance Infrastructure/Agreement for Delivery of CVPIA Water	Undetermined Cost
Annual Pumping Costs for New Refuge Lift-pump Station	\$100,00-\$150,000
Reconnect PG&E Electricity to Triangle Pump/Well	\$50,000

Gray Lodge WA

Installation of Trash Screens on 4 Main Drain Siphons	\$4,000,000
Cleaning 26 miles of Water Delivery Canals	\$50,000

North of Delta Non-CVPIA Refuges

Llano Seco Unit (Sacramento NWRC, Upper Butte Basin Wildlife Area, and USFWS conservation easements)

Repair Redwood Siphon and Main Delivery Canal	\$800,000
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Butte Sink Unit (Sacramento NWRC)

Replace Lift Pump and Fish Screen	\$3,000,000-\$4,000,000
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Upper Butte Basin Wildlife Area

Howard Slough Unit

Install Solar Array to Offset Pumping Costs	\$1,000,000
Delivery Canal Siphons Under Highway 162	\$2,000,000-\$3,000,000
Western Extension of Ward Canal	\$2,000,000-\$3,000,000
Realignment of West Drain Delivery Canal	\$1,000,000-\$1,500,000

Little Dry Creek Unit

Repairing 106 Lift Pump and Siphon	\$500,000-\$600,000
Cherokee Farms Water Conveyance and Wetland Enhancement	\$2,000,000-\$3,000,000
Mom's Farm Pipeline	\$2,000,000-\$3,000,000
Biggs West Gridley Water Conveyance Feasibility Study and Project	\$2,000,000-\$3,000,000

South of Delta CVPIA Refuges

Water Conveyance/Wheeling (all refuges)

The total Incremental Level 4 water allocation for south of Delta refuges is 105,514 acre-feet. Incremental Level 4 water supplies for the region are pooled. The average annual unit to convey this water to south of Delta refuges is approximately \$50 per acre-foot. New Incremental Level 4 delivery projects may incur additional charges. For state and private wetlands, SGMA fees are expected to have an impact on operating budgets.

Grassland RCD

Grassland RCD Conveyance Modernization Program	\$6,500,000
City of Los Banos Flood Water Capture Project	\$2,000,000
Los Banos Creek Reservoir Water Resource Management Program Phase II	\$1,500,000

North Grasslands WA

Salt Slough Unit

Irrigation Valve Replacement	\$136,000
Water Control Structure Replacement on Main Delivery Canal	\$100,000
Filed 18 Inlet Valve Replacement	\$20,000

China Island Unit

Irrigation Valve Replacement	\$140,000
Field 27 Inlet Valve Replacement	\$54,000
Secure 1,400 Acre-Feet Incremental Level 4 CVPIA Water	Undetermined Cost

Gadwall Unit

Field 2, F, and G Irrigation Valve Replacement	\$20,000
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Volta WA

Replace Low Lift Pump 3	\$400,000
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San Luis NWR

Kesterson Unit

Install Eagle Ditch Lift Pump	\$1,500,000
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East Bear Creek Unit

Secure Reliable Supply/Conveyance of Level 2 CVPIA Water	\$15,000,000
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Merced NWR

Secure Reliable Supply/Conveyance of Level 2 CVPIA Surface Water	Undetermined Cost
Install New Lift Pump and Repair 3 Damaged Wells	\$1,500,000
Replace Deadman Creek Water Delivery Siphon	\$2,000,000

Mendota Wildlife Area

Conveyance Infrastructure/Agreement for delivery of CVPIA Water	\$29,000,000-\$70,000,000
Subsidence and Water Conveyance System Engineering Study	\$1,500,000
Water Conveyance Improvement Project to Address Subsidence	\$30,000,000-\$50,000,000
Water Control Structure Replacement Project	\$72,000
Pump 10 Headwall Replacement	\$55,000
Pump 12 Protection Project	\$18,000
Dredging Silt from Fresno Slough	\$2,000,000

Pixley NWR

Conveyance Infrastructure/Agreement for delivery of CVPIA Water	Undetermined Cost
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Kern NWR

Replace Screen/Improve Infrastructure on Goose Lake Delivery Canal	\$5,000,000
Replace Three Lift Pumps	\$1,500,000

South of Delta Non-CVPIA Refuges

Lone Tree Unit of Merced NWR

Install Lift Pump and Water Conveyance Infrastructure	\$300,000
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Snowbird Unit of Merced NWR

Replace Pump and Well	\$500,000
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Arena Plains Unit of Merced NWR

Replace Well and Add Solar Array	\$300,000
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San Joaquin River NWR

Repair Lift Pump and Install Fish Screens on Stanislaus River	\$400,000
Install Lift Pump and Pipe to Drain Flood Waters Back to River	\$60,000
Repair White Lake Lift Pump	\$30,000

Delta Refuges

Yolo Bypass WA

55 Lift Station Delivery Canal Repair	\$600,000
New Lift Pump Station to Supply 70 Delivery Canal	\$1,000,000
Install New Lift Pump for Treehouse Wetlands	\$150,000
Rehabilitate the 29 Low Lift Pump on Putah Creek	\$160,000
Install Second Lift Pump at the Martins Lift Station	\$150,000
Install Solar Array to Offset Pumping Costs	\$1,000,000

Stone Lakes NWR

Repair Sun River Unit Northwest Lift Pump	\$60,000-\$80,000
Install Water Delivery Pipeline on Sun River Unit	\$100,000-\$140,000
Rehabilitate SP Cut Canal	\$620,000
Repair Lewis and Beach Lake Unit Pipeline System	\$25,000

Suisun Refuges

Grizzly Island WA

Replace Pond 11 Lift Pump and Rehabilitate Wetlands	\$500,000-\$1,000,000
Install Solar Array to Offset Pumping Costs	\$1,000,000

Joice Island WA

Improve External and Internal Levees to Manage Water	\$500,000-1,000,000
Rehabilitate Two Lift Pumps that Circulate and Drain Water	\$500,000-1,000,000

Potential New Water Sources

Sites Reservoir

The original proposal included a long-term average of 26,000 to 31,000 acre-feet of Incremental Level 4 water to refuges (mostly south of Delta). The project has been scaled back in size, and final refuge water supply benefits are not confirmed. Current estimates are approximately 13,600 to 34,200 acre-feet of Incremental Level 4 with an average of 16,000 acre-feet per year (mostly south of Delta).