



— BUREAU OF —  
RECLAMATION

# **Water Infrastructure Improvements for the Nation Act of 2016 (Public Law 114-322), Title I Water Resources Development Section 4009(a):**

## **Feasibility Study Review Findings *Department of Interior, Bureau of Reclamation's Desalination Construction Program***

**June 2024**

*Prepared for*

**Committee on Energy and Natural Resources of the Senate  
Committee on Natural Resources of the House of Representatives**

*Prepared by*

**U.S. Department of the Interior, Bureau of Reclamation**

## **Mission Statements**

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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## **Title XVI, Desalination Construction: Feasibility Study Review Findings**

### **Introduction**

This report is provided in accordance with the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016 – Title I Water Resources Development, Section 4009(a) (P.L. 114-322) and the Infrastructure Investment and Jobs Act – Title IX Western Water Infrastructure (P.L. 117-58).

As required under Section 4009(a) of the WIIN Act, projects are eligible to compete for funding after a project sponsor completes a feasibility study and Reclamation determines that it meets the programmatic requirements outlined in the Reclamation Manual Directives and Standards WTR 11-01. WTR 11-01 is designed to provide structured guidance for feasibility study reviews and to meet feasibility study legislative requirements. This includes:

- The feasibility study report meets the requirements of a feasibility study as defined under Section 1604 of P.L. 102-575, as amended, and complies with applicable Federal laws and regulations.
- The desalination project is technically and financially feasible and provides a Federal benefit in accordance with the Reclamation laws.

### **Feasibility Reviews and Determinations**

Section 4009(a) of the WIIN Act requires the Secretary to submit a report to Congress that describes the results of feasibility reviews. Figure 1 below is a summary of the four feasibility study reviews for desalination projects that have occurred since the last Feasibility Study Review Findings report was transmitted to Congress. All four feasibility studies were determined to meet the requirements of WTR 11-01.

As a result of meeting requirements outlined in WTR 11-01, these projects, as defined by the feasibility study, are now eligible for planning, design, and construction funding through the competitive WIIN Act Desalination Construction grant program. Reclamation uses annual competitive funding opportunities to allocate funds available for the WIIN Act Desalination Program. The total Federal funding received may not exceed 25 percent of the total project cost, up to the per project Federal funding cap identified in the WIIN Act Desalination Construction funding opportunity.

Prior to receiving Federal funding, the project must comply with all applicable environmental laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and before any construction begins, all project sponsors must demonstrate that it is financially capable of funding the non-Federal portion of project construction costs and all operation, maintenance, and replacement costs, pursuant to Reclamation Manual Directives and Standards WTR 11-02.

**Title XVI, Desalination Construction: Feasibility Study Review Findings**

<b>City of Pharr</b>	<b>Parker County Special Utility District</b>	<b>Johnson County Special Utility District</b>	<b>San Diego County Water Authority</b>
<p><b>Project Title:</b> Brackish Groundwater Desalination</p> <p><b>Estimated Project Costs:</b> \$134,124,116</p>	<p><b>Project Title:</b> Desalination Project</p> <p><b>Estimated Project Costs:</b> \$66,492,000</p>	<p><b>Project Title:</b> Desalination Project</p> <p><b>Estimated Project Costs:</b> \$157,723,000</p>	<p><b>Project Title:</b> Lewis Carlsbad Desalination Plant Intake Project</p> <p><b>Estimated Project Costs:</b> \$251,541,000</p>

Figure 1. Summary of the four feasibility studies reviewed by Reclamation since the last Feasibility Study Review Findings report was transmitted to Congress.

## Project Summaries

Provided below is a summary of the four projects that include the projects sponsors, location, project description, and total estimated project costs.

### City of Pharr

**Project:** Brackish Groundwater Desalination

**Location:** Pharr, Texas

**Review Completed:** September 1, 2023

The City of Pharr evaluated options for development of a new brackish groundwater well field, a 10 million gallons per day (MGD) (11,200 acre-feet per year) desalination water treatment and concentrate disposal facilities, and the necessary transmission infrastructure to integrate the new supply to the City’s water system. The selected project will increase raw water supply to enable full utilization of its existing surface water treatment plant capacity and to increase treated water production capacity to comply with Drinking Water Standards. The project is expected to stretch the limited water supplies in the Rio Grande system to meet the region’s future water needs and limit future dependence on surface water.

**Total Estimated Project Costs:** \$134,124,116

## **Title XVI, Desalination Construction: Feasibility Study Review Findings**

### **Parker County Special Utility District**

**Project:** Desalination Project

**Location:** Parker County, Texas

**Review Completed:** March 1, 2024

The Parker County Special Utility District (PCSUD) water system is experiencing rapid population growth putting strain on the water supply system. PCSUD is planning to expand its existing desalination water treatment plant from 1.0 MGD to 2.0 MGD. The Brazos River is the only viable water source for the area and this surface water has high salinity, TDS, and chlorides requiring desalination treatment technologies to meet both Environmental Protection Agency and state Primary and Secondary Drinking Water Standards. The desalination project being investigated will use advanced treatment technologies including direct-filtration membrane filtration with ceramic ultrafiltration membranes followed by enhanced-recovery reverse osmosis. Desalinated water will provide municipal drinking water to its customers who will then treat the water for consumption, personal use, and irrigation. This project will provide up to 1,120 acre-feet of recycled water per year.

**Total Estimated Project Cost:** \$66,492,000

### **Johnson County Special Utility District**

**Project:** Desalination Project

**Location:** Johnson County, Texas

**Review Completed:** January 19, 2024

The Johnson County Special Utility District (JCSUD) is planning a new JCSUD desalination facility designed and operated similarly to an existing JCSUD facility, while utilizing improvements in technology and design. The study area historically relied on groundwater and surface water; however, with the declining capacity of groundwater aquifers due to overdevelopment, water use increasingly relies on surface water supplies and/or brackish groundwater supplies. The desalination facility being investigated will utilize direct-filtration membrane filtration with ceramic ultrafiltration membranes followed by enhanced-recovery reverse osmosis. The project is expected to provide a consistent source of alternative water supply to the study area by producing up to 11,210 acre-feet of recycled water per year.

**Total Estimated Project Cost:** \$157,723,000

### **San Diego County Water Authority**

**Project:** Lewis Carlsbad Desalination Plant Intake Project

**Location:** San Diego, California

**Review Completed:** February 1, 2024

The San Diego County Water Authority evaluated options for permanent intake screen and discharge alternatives for the existing Lewis Carlsbad Desalination Plant (CDP). In 2015, the CDP completed construction and began commercial production providing critical drought-resilient water supplies for a region with limited local drinking water resources. The CDP is located on a decommissioned power station site and currently uses the original intake and discharge facilities. New intake and discharge facilities are necessary to allow for stand-alone operation at the CDP. Implementation of the new facilities will be completed in three operational phases (temporary, interim, and permanent) with two separate capital improvements to maintain operations of the CDP. This project was determined the best alternative to minimize intake and mortality of marine life while transitioning the CDP to a long-term stand-alone operation. The project will also enable future increases to plant production to capture recent improvements to the reverse osmosis technology installed at the CDP.

**Total Estimated Project Costs:** \$251,541,000