

Extraction Barrier Brackish Water Treatment



Location:

An extraction barrier and brackish water treatment system will be constructed on the coast at Naval Base Ventura County Point Mugu. The treated water will be used as potable supply by the U.S. Navy; the remainder will be recharged or delivered for beneficial use in the Oxnard and Pleasant Valley basins.



Project Description:

Extract coastal brackish (salinity too high for agriculture or human consumption) groundwater from aquifers to remediate effects of past seawater intrusion, develop a hydraulic barrier by intercepting landward flow of seawater, and desalinate the extracted groundwater for direct use or recharge.



CURRENT STATUS

United has gathered and interpreted available geologic data in the project area and refined their existing groundwater flow model to include solute transport and refined aquifer layering. As part of a Proposition 1 planning grant, various scenarios for project scale, well locations and distribution of product water were completed in 2021. Initial modeling indicates pumping 3,500 acre-feet per year (AFY) can mitigate inland intrusion in the Upper Aquifer System, and larger projects are likely feasible.

United has begun conducting design, environmental and permitting work in coordination with the U.S. Navy, and is planning to construct monitoring and extraction wells for Phase I of the project in 2024. United has secured State grant funding to support construction of the monitoring wells, and anticipates securing grant funding to support construction of Phase I extraction wells in late 2023.



BENEFITS/YIELD

Phase I:

- Controls seawater intrusion with a groundwater extraction barrier
- Restores offshore groundwater gradients in coastal areas
- Removes saline and brackish groundwater from the Oxnard Plain and improves groundwater quality
- Supports and increases the sustainable yield of the Oxnard-Pleasant Valley basins

Phase II:

- Enhances resilience of local water supplies (e.g. unaffected by droughts, providing alternate water supply)
- Treated water provides a high-quality water source available for all users including municipal, industrial, and agricultural customers, small mutual water companies, and disadvantaged communities
- Enables Naval Base Ventura County to meet its water goals





Estimated Cost:

The capital cost is estimated at \$300 million for construction. State grant funding has already been secured for some of the design, feasibility studies and monitoring costs. State funding is expected to be secured in late 2023 to support construction of Phase I. Additional federal grants and financial support are being actively pursued to minimize capital costs. When the sustainable yield improvements to the basin are considered as well, the yield of the project, a combination of treated water and increased basin groundwater yield, would result in a larger benefit and lower cost capital and operational cost estimates.



Current Funding Sources:

State Water Resources Control Board - Groundwater Grant Program

- \$122,563 - Round 1 Planning Grant
- \$8.45 million - Round 3 Implementation Grant

Department of Water Resources (DWR) - Sustainable Groundwater Management Grant Program

- \$1,317,900 for monitoring well construction

Potential Funding Sources:

- United States Bureau of Reclamation - Water Infrastructure Improvements for the Nation (WIIN)
- DWR - Proposition 1 - Integrated Regional Water Management Grant Program
- Department of Defense (DOD) - Office of Local Defense Community Cooperation (OLDCC) - Defense Community Infrastructure Program (DCIP)
- California Ocean Protection Council (OPC) Prop 68

Ask from United to Regulators, Legislators, Local Agencies, and Stakeholders:

Support for permitting this innovative project; funding assistance.

