

# Coastal Brackish Groundwater Extraction and Treatment



## Location:

Coastal brackish groundwater extraction and treatment (desalination) will occur at the Naval Base Ventura County Point Mugu facility. Some treated water will be used as potable supply by the Navy; the remainder will be recharged or delivered for beneficial use in the Oxnard and Pleasant Valley basins.

## Project Description:

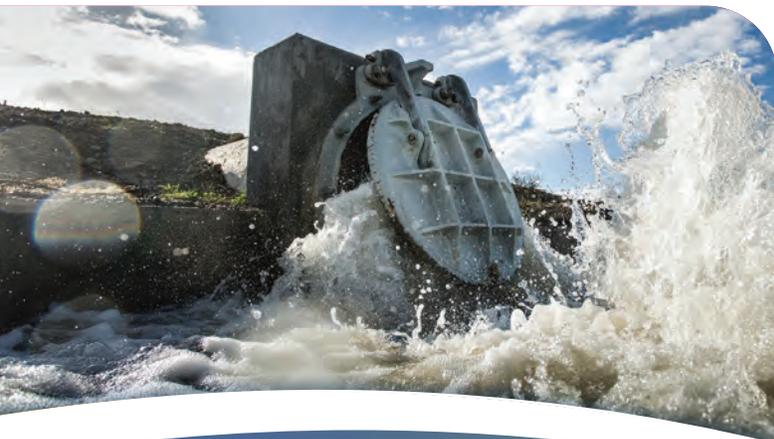
Extract coastal brackish (salinity too high for agriculture or human consumption) groundwater from aquifers to remediate effects of past seawater intrusion, develop a hydraulic barrier by intercepting landward flow of seawater, and desalinate the extracted groundwater for direct use or recharge.



## 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 current Prop 1 planning grant, various scenarios for project scale, well locations and distribution of product water will be completed this year. Initial modeling indicates pumping 5,000 acre-feet per year (AFY) can prevent further inland intrusion, and larger projects are likely feasible.

United expects to enter a Memorandum of Understanding with the U.S. Navy following Prop 1 demonstrations of project feasibility.



## BENEFITS/YIELD

- Initial modeling for a suite of projects has assumed 10,000 AFY is pumped from the shallower confined aquifers near Mugu submarine canyon. Approximately 1,500 AFY of very high-quality potable water from the plant will be used by the Navy, and the remainder of the treated water will be used for aquifer recharge or delivered directly to users across Oxnard and Pleasant Valley basins.
- Creation of a seawater intrusion barrier along the coast further increases sustainable yield of the Oxnard and Pleasant Valley basins in amounts comparable to the coastal pumping, when optimized with other projects.
- Coastal brackish groundwater is considered a “drought-proof supply,” as extraction and treatment of this source is unaffected by wet and dry climate cycles. Water-supply sources that are available during droughts enhance resilience, especially in the face of climate change.
- Delivery of low-total dissolved solids (TDS) water to recharge basins and or municipal water systems will improve water quality for small mutual water companies and disadvantaged communities. Delivery of low-TDS water for agricultural use is expected to reduce irrigation water needs for flushing salts from soils.



## Estimated Cost:

Approximately \$200-300 million for construction; estimated annual costs per acre-foot for brackish-water treatment and annual maintenance range from \$2,000 to \$3,000 based on costs for comparable facilities. Additional indirect benefits are realized because pumping cuts in some inland areas are avoided. Efforts will be made to obtain federal and state grant funding to support the capital cost.



## Current/Potential Partners:

Naval Base Ventura County, Fox Canyon Groundwater Management Agency

## Current/Potential Funding Sources:

- Currently supported by Prop 1 Round 2 planning grant. United recently submitted application for a Prop 1 Round 3 implementation grant for Phase 1 production wells and additional monitoring wells.

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

Support for permitting this innovative project; funding assistance.

