

Issues &



Insights

Ventura County's
supply of water news



How to Create 'New' Water: Introducing Extraction Barrier and Brackish Water Treatment Project

Seawater intrusion has been a problem in the southern Oxnard Plain since the 1930's due to years of imbalanced groundwater extraction and groundwater replenishment. Increased demands on groundwater have brought groundwater levels below sea level in coastal areas along the Pacific Ocean, which have resulted in seawater being drawn into the aquifers. Seawater intrusion contaminates fresh water supplies by elevating salt concentrations and deteriorating the quality of water to be unsuitable for drinking or agricultural irrigation purposes

Unlike coastal Los Angeles and Orange County, Ventura County currently has no physical seawater intrusion barrier in place. Historically, UWCD has mitigated seawater intrusion through groundwater recharge and shifting groundwater pumping from the upper aquifer system to lower aquifer system, which is less susceptible to seawater intrusion.

UWCD is working in close collaboration with the U.S. Navy to develop the Extraction Barrier and Brackish Water Treatment Project (EBB Water) to effectively combat seawater intrusion and create a local and drought resilient water supply for beneficial use in the region



EXTRACTION BARRIER AND BRACKISH WATER TREATMENT PROJECT

UWCD is developing an extraction barrier by creating a hydraulic barrier and

intercepting the inland flow of seawater near the coast. The extracted saline water (also referred to as brackish water) will be treated using advanced treatment, including membrane desalination, to provide a new high quality local supply for direct potable use and groundwater recharge. The desalination process produces a brine byproduct which can be discharged to the existing regional salinity management pipeline (SMP). The Project is being implemented in two phases. UWCD is currently developing the first phase of the Project (Phase 1) that includes design and installation of extraction wells, discharge facility and pipeline, as well as design and installation of new monitoring wells at Naval Base Ventura County - Point Mugu.

The combination of an extraction barrier and delivery of advanced treated water will reduce the annual groundwater pumping by 12,000 to 15,000 acre-feet. The potable supply will be provided to Naval Base Ventura County to meet an annual potable demand of approximately 2,000 acre-feet to support the U.S. Navy meeting their mission critical sustainability goal. The total cost of the EBB Water Project is estimated at **\$420 million**, and the project is expected to come online by 2031.

Close collaboration with the U.S. Navy on the advancement of the EBB Water Project has led to the execution of a memorandum of understanding between the U.S. Navy and UWCD that formalizes the roles and responsibilities of the two parties related to the project.



PHASE 1 FUNDING

State and local funding has been secured to support feasibility studies, design and construction and monitoring costs. UWCD is actively pursuing federal grants and financial support to minimize capital costs. To date, a combined total of \$10M in grants have been obligated to support the Phase 1 Project. This funding will allow extraction of up to 3,500 acre-feet per year of brackish water to test and document the efficacy of the extraction barrier prior to commencement of the Phase 2 Project. Phase 2 includes expansion of the extraction wellfield, a water treatment plant, distribution pipelines and a brine discharge line to the existing SMP.

Find state funding details below.

State Water Resources Control Board - Groundwater Grant Program

- \$122,563 - Prop 1 Round 2 Planning Grant, Feasibility Study
- \$8.45 million - Prop 1 Round 3 Implementation Grant, Phase 1 Project

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

- \$1.32 million - DWR Sustainable Groundwater Management Round 1, Monitoring Well Design and Construction



BENEFITS

Phase I:

- Controls seawater intrusion through 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



Courtesy of California Department of Water Resources

Phase II:

- Enhances resilience of local water supplies (e.g. unaffected by droughts, providing new local 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 sustainability goals



Courtesy of California Department of Water Resources



SPEAKING OPPORTUNITIES

UCWD welcomes opportunities to connect with the community and discuss water supply, groundwater resources and current threats to our system. If you'd like to book a presentation from one of our staff, please contact:

Murray McEachron Email: murraym@unitedwater.org

Principal Hydrologist Phone: (805) 695-3716

BOARD UPDATES

New Director Representing



Division 5 Joins UWCD Board of Directors

UWCD welcomes Steve Huber to the Board of Directors. Appointed in March 2024, Director

Huber represents a portion of the City of Oxnard. Director Huber served 33 years of honorable service in the U.S. Navy, Commanding the USS FIFE (DD 991) and later the Naval Surface Warfare Center, Port Hueneme Division, where he led a pivotal shift in water management.



Transitioning from the military, Director Huber established a business consulting firm, specializing in Lean 6 Sigma and Continuous Improvement methodologies. He has served on the Oxnard City Planning Commission (as chair twice) and chaired the Downtown Oxnard Improvement Association. He has been an active volunteer and leader in various local organizations, including St. John's Hospital, the Military Officers Association, and the Oxnard Ambassadors. His journey has been defined by a commitment to service, both in uniform and civilian life, striving to make meaningful contributions to his community.

Director Huber has a Bachelor of Science in Oceanography (Physics) from the U.S. Naval Academy, a Master of Arts in International Studies from Old Dominion University, completed National Security and Strategy Studies at Naval War College, and a National Security Studies Fellowship from the Maxwell School of Citizenship and Public Affairs at Syracuse University



GLOSSARY

Brackish Water – Water occurring in a natural environment that has more salinity than freshwater, but not as much as seawater. It commonly results from mixing seawater and freshwater, such as in the case of seawater intrusion.

Desalination – The process by which the dissolved mineral salts in water are removed. UWCD's EBB Water Treatment project would desalinate extracted groundwater for direct use or recharge.

Extraction Barrier – UWCD's EBB Water Treatment project will develop a barrier to seawater using extraction wells

Potable Supply – Also known as drinking water, potable water is safe to consume. The U.S. Navy will use treated water from the EBB Water Treatment project as a potable supply

Seawater Intrusion - When groundwater pumping exceeds recharge, water levels in the groundwater basin can fall below sea level and draw seawater into the aquifers. Water quality is impacted, no longer conforming to drinking water or agricultural quality standards.

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