

Recycled and Purified Water Program



PURE WATER SILICON VALLEY

Valley Water aims to meet 10% of Santa Clara County's water demand through non-potable and potable reuse. This initiative enhances resilience to drought and climate change, while also reducing risks of land subsidence and saltwater intrusion. Valley Water has set a target of 24,000 acre-feet per year (AFY) of potable reuse by 2035 and 32,000 AFY by 2050, resulting in plans for a 24 millions gallon per day (MGD) facility by 2035.

Since 2014, Valley Water has successfully operated the Silicon Valley Advanced Water Purification Center (SVAWPC), tested future potable reuse technologies and conducted tours to increase public awareness. In 2023, Valley Water received a planning grant from the U.S. Bureau of Reclamation to conduct a feasibility study to evaluate new purification facilities and conveyance infrastructure in Silicon Valley.

With California's recent adoption of Direct Potable Reuse (DPR) regulations in 2024, Valley Water advanced its Purified Water Program to a large-scale DPR project.

Building on the success of the SVAWPC, Valley Water, in collaboration with the cities of San José and Santa Clara, is actively developing Pure Water Silicon Valley project to produce up to 24,000 AFY of highly purified water.

This facility is proposed to process treated wastewater effluent from the San José/Santa Clara Regional Wastewater Facility (RWF) using advanced processes that include ozone, biological activated carbon (BAC), microfiltration (MF), reverse osmosis (RO), ultraviolet advanced oxidation processes (UV-AOP), and chlorination, in compliance with recently established DPR regulations.

Pure Water Silicon Valley project is proposed to be implemented through two phases:



Silicon Valley Advanced Water Purification Center UV disinfection system.



Reverse Osmosis (RO) pressure vessels.

DPR Demonstration Facility

This phase is proposed to involve the design and construction of a DPR demonstration facility (~200 gallons per minute) for testing, operator training, and regulatory data collection that will help us expedite the full-scale and reduce risks and costs. A learning center will also be developed to enhance public engagement and outreach.

Full-scale DPR Facility

This proposed phase involves the design, construction, and permitting of a full-scale DPR facility capable of producing up to 24,000 AFY of high-quality water that meets stringent regulatory requirements along with necessary infrastructure for distributing the water to retailers. As part of this phase, a CEQA review will be conducted to evaluate the potential environmental impacts and support the permitting process.

DPR projects must comply with stringent treatment, monitoring, and reporting requirements, involving a higher level of operator certification necessary to meet regulatory and safety standards.

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HIGHLIGHTS

Location

- Will be located in San José adjacent to the SVAWPC.

Target Date for Completion

- DPR demonstration facility: estimated 2030.
- Full-scale facility: estimated 2035.

Population Served

- Nearly 2 million residents of Santa Clara County, including both homes and businesses.

Benefits

- Produce up to 24,000 AFY of purified water.
- Reduce dependence on imported water.
- Enhance drought resilience.
- Reduce land subsidence and saltwater intrusion.



Area in north San José surrounding the San José-Santa Clara Regional Wastewater Facility and the Silicon Valley Advanced Water Purification Center.
Source: San José/Santa Clara Water Pollution Control Plant Master Plan, November 2013.

