

Benicia Water Reuse Project Fact Sheet

The current drought has raised everyone's awareness of the need to conserve water and to find new water resources. While we are all hopeful that the predicted El Nino will help alleviate our water woes, the fact remains that we live in an arid state with a history of prolonged periods of drought. This drought is our wake-up call. Now is the time to prepare for our future water needs, especially in times of water shortages.

Why this Project is Needed

During drought years, the City of Benicia's water supply cannot reliably meet the demands of its customers over the long run. In a normal non-drought year the City's average annual water demand is 10,000 acre-feet (AF), which is supplied primarily (75% to 85%) by the State Water Project (SWP), supplemented (15% to 25%) by the Federal Solano Project from Lake Berryessa.

Approximately half the demand is from residential customers (indoor and outdoor uses), municipal uses, and local businesses; the remaining half is from the Valero Refinery (Refinery). The City supplies the Refinery with untreated raw water for various industrial processes, including cooling tower make-up water.

Due to statewide water shortages, in early 2014, the City's SWP allocation was reduced to 5%, resulting in a SWP water supply of only 860 AF compared to a normal year SWP supply of 7,500 to 8,500 AF. When the SWP water delivery falls below 35% of its contractual allocation, the City needs to impose water conservation measures and draw on reserves of banked water.

If low allocations occur for a sustained period of years, the City could be unable to supply the resident's minimum water needs and the Refinery's industrial water needs.

In 2014, to meet the water needs of its customers, the City purchased water from Vacaville at a cost of \$900,000, which had to be passed along to ratepayers in the form of a drought surcharge.

Benefits of the Proposed Water Reuse Project

The Water Reuse Project would allow the City to produce about 2,000 acre feet per year (AFY) of recycled water at the Benicia Wastewater Treatment Plant. By sending all or most of that water to the City's largest water user, the Refinery, we accomplish a number of objectives:

- Increases annual potable water supply available to residents and businesses by 2,000 acre feet, which represents 20 to 25 percent of the City's overall water needs. During periods when SWP supply is not limited, this water can be banked in Lake Berryessa for use during times of shortages, thus reducing the need to purchase imported water at premium rates.
- A streamlined, single-user project presents a huge cost saving to the City and its ratepayers by eliminating the need to identify other potential users and install costly pipelines to serve those customers.
- Because a lower level of treatment meets Valero's needs, this recycled water project is less expensive than one studied in 2008, which called for highly treated recycled water using reverse osmosis. In 2008, the need for higher recycled water quality was driven by using recycled water in Valero's boiler feed water system. The current study targets recycled water use in the Refinery's cooling tower system only, which does not require higher water quality requirements.



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Benefits continued...

Other project benefits include:

- The tertiary treated water produced at the treatment plant will assist the City in future nutrient limitations for continued discharge to the San Francisco Bay.
- The project implements the goals and policies of the City's General Plan and Strategic Plan in relation to achieving sustainability, ensuring an adequate water supply and promoting water conservation.

Project Status and Next Steps

At this time, a feasibility study is being conducted by the engineering firm Brown and Caldwell. The study will determine the technical and economic feasibility as well as fulfill permitting requirements of the proposed project. The City expects to complete the necessary steps and produce a final report by December 2016, which will part of an application for state funding for the project.

The timing is critical to meet application deadlines for State Water Resources Control Board (SWRCB) Proposition 1 grant funds, which the City is pursuing to help fund the treatment plant improvements and conveyance system.

The feasibility study and CEQA process will consist of the following steps:

- Sampling and analysis to meet water quality objectives or targets
- A review of pipeline alignment options and recommendations
- A review of and recommendations of wastewater treatment options
- Development of funding plan and letter of commitment from Valero Refining Company
- Preparation of a final report along with CEQA documentation for submittal as part of grant application

Estimated overall project timeline:

Item	CompletionDate
Feasibility study	Spring 2016
Environmental documentation	Fall 2016
Complete PROP 1/CWSRF Application	Spring 2017
Complete Detail Design	Winter2018
Bid date	Spring 2018
Begin Construction	Spring 2018

Note: Each step subject to review and consent by the City Council.

Benicia Water Reuse Project Contact Information

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