FAQ

Water Reuse Program

Water Purification Demonstration Project

The City of San Diego • Public Utilities Department

Water Purification | Demonstration Project

North City Water Reclamation Plant

The City of San Diego's water resource strategy includes planning, conservation, recycled water, groundwater, water reuse, and watershed and resource protection to help meet future water needs.

Does San Diego need more water?
Water is essential to our quality of life. The City of San Diego imports approximately 85 to 90 percent of its water supply from Northern California and the Colorado River. For the past few years, California has been affected by a historic dry period and a drought on the Colorado River. In addition, legal and regulatory decisions to protect endangered species in the Sacramento – San Joaquin Delta have resulted in restrictions on the amount of water that can be imported from Northern California. Population projections predict the City will need more water in the future than is used today. Since San Diego is at the end of the imported water pipeline, and receives an average of 10 inches of rain each year, we need to develop local water supplies to secure a reliable supply of water for present and future City of San Diego water customers.

Why can't we just conserve enough water to meet future needs?
Using water wisely through conservation practices should always be the first step in preserving the City's precious water supplies. The average water demand (which includes local surface water, imported water, conservation and recycled water) for the City of San Diego for the last six fiscal years has been approximately 260,000 acre-feet per year. The City's conservation programs have helped reduce its dependence on imported water by saving more than 34,000 acre-feet of drinking water a year. That's enough water to meet the needs of 68,000 average families of four for one year. Nonetheless, by 2030 the City will need an additional 43,000 acre-feet of water per year to meet the needs of current and future public utilities customers. So while conservation is important, efforts to save water need to be combined with other sustainable strategies if we are to have enough water for all of our needs.

Doesn't the City already recycle water?
Yes. The City of San Diego operates two water recycling facilities capable of treating 45 million gallons per day of wastewater to secondary and tertiary treatment levels. Recycled water treated to a secondary level is safe for distribution into the environment, while recycled water treated to a tertiary level undergoes further treatment so the water is safe for use in irrigation and industrial purposes.

The recycled water produced by these plants is primarily used for irrigation and industrial purposes. A separate distribution system of "purple pipes" is required to keep the recycled water separate from drinking water pipelines. Constructing additional purple pipe distribution systems is costly. Also, using recycled water for irrigation is seasonal – it is not used in rainy periods or when it is cooler. This means less than half of all wastewater available for recycling is beneficially reused. The remainder of recycled water is treated to a secondary level and discharged into the ocean. Because of the cost and the limited use of existing recycled water, the City is examining other ways to use more recycled water, including reservoir augmentation.

Does the City plan to use more recycled water?
Yes, the City has a recycled water master plan and is always looking for ways to reuse existing water supplies. In 2005 the City conducted a comprehensive, balanced, impartial and science-based Water Reuse Study of all recycled water opportunities. The study included a public

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participation component and concluded that Indirect Potable Reuse through Reservoir Augmentation was the preferred method of implementing the expanded use of recycled water in San Diego.

The Water Reuse Study was the first phase of the City's plan to expand the use of recycled water. The second phase is now underway to examine the feasibility of reservoir augmentation through a demonstration project.

What is Reservoir Augmentation?
Reservoir augmentation is a multi-step process that is being examined by the Water Purification Demonstration Project. It includes using advanced water purification processes on recycled water which can be blended with existing "raw" water supplies. The Demonstration project will not send purified recycled water to a local reservoir. The concept of Reservoir Augmentation is to add purified recycled water to a local reservoir which can be treated to drinking water standards and distributed to the public.

What is the Water Purification Demonstration Project?
The Demonstration Project is the second phase of the City's plan to expand the use of recycled water. It will evaluate the use of advanced water purification technology and the feasibility of producing water that can be sent to blend with existing water in a local reservoir. The Demonstration Project includes a study of San Vicente Reservoir, research to determine a pipeline alignment, a public outreach education program and the construction and operation of a pilot scale advanced water purification facility.

Is this project toilet-to-tap?
Although "toilet-to-tap" has been used to describe this project in the past, it is not an accurate description. The notion that wastewater can be sent directly to drinking water taps is inaccurate. "Toilet-to-tap" is misleading because it ignores key treatment steps and strict testing requirements that are involved in the recycling process. In California, all forms of water are highly regulated and monitored to ensure safety. Since there is no new water on Earth, all water goes through a natural cycle and is essentially recycled water before it is treated and tested before being sent to drinking water taps. This project is strictly a demonstration and at no point during the demonstration phase will recycled water be distributed to drinking water taps.

What is the latest in water purification technology?
Advanced water purification is a state-of-the-art process that purifies treated wastewater to a level similar to distilled water quality. This process includes membrane filtration, reverse osmosis, and advanced oxidation through the use of ultra violet light and peroxide. The resulting purified water is of higher quality than existing raw water sources and can be used as a locally controlled source to augment reservoir supplies.

Is reservoir augmentation safe?
Yes. There are many public health protection steps that must be taken before highly purified recycled water can be used for reservoir augmentation. A state-of-the-art process of water purification produces water that is similar to distilled water quality. After this water is put in the reservoir, it blends with existing supplies of untreated or raw water. All water that is distributed to public drinking water taps must meet strict state and federal drinking water standards. Water stored in open reservoirs (lakes) is processed through a drinking water treatment plant. After this final treatment, the water meets drinking water standards before it can be distributed to homes and businesses. The water treatment and distribution system is also monitored regularly to ensure safety.

Will recycled water be added to our drinking water now?
No. The Demonstration Project will test the key functions of reservoir augmentation on a small scale and no recycled water will be sent to the reservoir or distributed to customers during the demonstration phase. The City will operate a pilot scale facility for at least one year to analyze water quality and monitoring methods. At the same time, an independent advisory panel of experts will provide oversight of project research to determine if the treatment system meets all water quality, safety and regulatory requirements necessary to determine the viability of a full-scale project.

What are the benefits of reservoir augmentation?
Reservoir augmentation can provide a locally controlled, drought-proof supply of high-quality water. If implemented, a full-scale project will increase the utilization of recycled water and save energy by reducing San Diego's dependence on imported water. Reservoir augmentation could also improve the water quality in the San Vicente Reservoir and have a positive impact on the environment by producing less discharge into the ocean.

Would you like to know more?
City staff is reaching out to as many San Diegans as possible. If you would like City staff to present information about the Demonstration Project to your organization, please call (619) 533-7572 or email purewatersd@sandiego.gov.

Visit the project website at www.purewatersd.org for more information.