

Pure News

Winter 2010

Water Reuse Program

Water Purification Demonstration Project

The City of San Diego • Public Utilities Department

Welcome to Pure News!

Welcome to Pure News, a newsletter to keep you informed about the latest happenings with the City of San Diego's Water Purification Demonstration Project. Please invite your friends and colleagues to sign up to receive this newsletter and other project-related updates at www.purewatersd.org.

Do you know where your water comes from?

San Diego is renowned for its sunny skies and ideal climate. What many may not know is that because of the region's semi-arid climate, the City of San Diego has limited local water sources and relies on importing approximately 85 to 90 percent of its water supply each year.

In the past, importing water from the Colorado River and Northern California has been a low-cost, dependable option, but these water sources have become less reliable and more expensive in recent years. Environmental stresses, including the ongoing drought in the Colorado River basin and reduced snow pack and runoff in Northern California, have decreased the available water supply. In addition, court-ordered pumping restrictions to protect threatened fish species have severely reduced the amount of water that can be delivered by the California State Water Project. This has a significant effect on San Diego, which sits at the end of the various pipeline systems that deliver the imported water. These conditions have intensified the need to identify new, locally controlled water sources.

To address this critical water supply situation, the City is actively pursuing ways to diversify San Diego's water supply options. One of these options



Sacramento-San Joaquin Delta

is water conservation. The City declared a Level 2 Drought Alert in effect as of June 2009, which enforces many mandatory water restrictions and water conservation practices. Water customers in the City of San Diego have done a great job from July 2009 to June 2010, reducing water use by 11.6 percent compared to July 2008 to June 2009. Although conserving water is an important aspect of the City's water supply initiative, conservation alone is not enough. Therefore, the City is implementing a three-phase Water Reuse Program to explore local solutions for San Diego's future water supply reliability.



Colorado River

Water Purification | Demonstration Project



Did you know...

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 water 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.

As the City continues to diversify San Diego's water supply portfolio and increase the amount of water available to us in the future, efforts are focused on providing information about the water supply to residents of San Diego. To learn more about the City's current water supply situation, drought conditions, conservation practices and water reuse options, please visit www.sandiego.gov/water.

A look at new, local options for water

Today, the majority of San Diego's water supply comes from imported sources that are becoming more expensive and less reliable. In 2004, the City launched a three-phased Water Reuse Program (Program) to address the water supply crisis by exploring local solutions for future water supply reliability.

Phase one of the Program was the City's 2005 Water Reuse Study (Study). The Study provided a comprehensive evaluation of all viable options to maximize the use of recycled water produced by the City's two water reclamation plants. In addition, the Study analyzed and researched the health effects of various water reuse options. The Study concluded that reservoir augmentation at the City's San Vicente Reservoir is the preferred option for maximizing the use of the City's recycled water supply. Reservoir augmentation is a multi-step process that includes sending the advanced purified water to a reservoir to blend with existing water



San Vicente Reservoir

supplies and then treating the blended water again to be distributed as drinking water. A broad-based group of City residents participated in an American Assembly process to review the Study findings. The American Assembly reached the same conclusion that reservoir augmentation was the most viable use of highly treated recycled water for San Diego and that it could provide a local, reliable supply of water crucial to the City's future.

Did you know...

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.

Based on the final draft report that summarized the Study results, the San Diego City Council commissioned the second phase of the Program: the Water Purification Demonstration Project (Demonstration Project). The purpose of this phase is to further explore the option of reservoir augmentation by demonstrating the project on a small scale. The Demonstration Project, which is currently underway, is examining the use of advanced water purification technology to purify highly treated recycled wastewater that could potentially be added to the "raw" water (water prior to being treated) in a local reservoir. During this testing phase, purified water will not be added to the drinking water supply.

An Advanced Water Purification Facility (AWPF) is being built in Sorrento Mesa, a community in the northern region of the City, and will operate for about one year to produce approximately 1 million gallons of purified water per day. A study of the San Vicente Reservoir is also being conducted to test the key functions of reservoir augmentation and an independent advisory panel of experts is providing oversight on project research. The research will determine if the purification system satisfies all water quality, safety and regulatory requirements of the California Department of Public Health, and what will happen if the purified water is added to the reservoir. The Demonstration Project is scheduled to conclude at the end of 2012.

If the Demonstration Project meets regulatory requirements and provides evidence that a full-scale project would be viable, the mayor and city council will decide whether to implement a full-scale reservoir augmentation project. This would potentially be the third and final phase of the Water Reuse Program. In this potential phase, the advanced treated water would be added to the San Vicente Reservoir. The blended water from the reservoir would go to the Alvarado Water Treatment Plant where it would be treated for potable use. This water would become part of the drinking water supply for the City of San Diego.

Visit www.purewatersd.org to learn more about the Demonstration Project.

Demonstrating Advanced Water Purification Technology

A key component of the Demonstration Project is the Advanced Water Purification Facility (AWPF). Construction on the AWPF will begin in early 2011. Following testing, the AWPF is expected to be operational in spring 2011. The facility will be located at the North City Water Reclamation Plant and will be the centerpiece of the Water Purification Demonstration Project.

The AWPF is very different from a wastewater treatment facility. First, the water entering the AWPF has already been "reclaimed" through a series of treatment processes. At the North City Water Reclamation Plant, sewage is screened multiple times before being chemically treated to a safe level for discharging into the environment. After these treatment steps the wastewater is considered recycled water and is safe enough to be used for all irrigation and industrial purposes.



North City Water Reclamation Plant

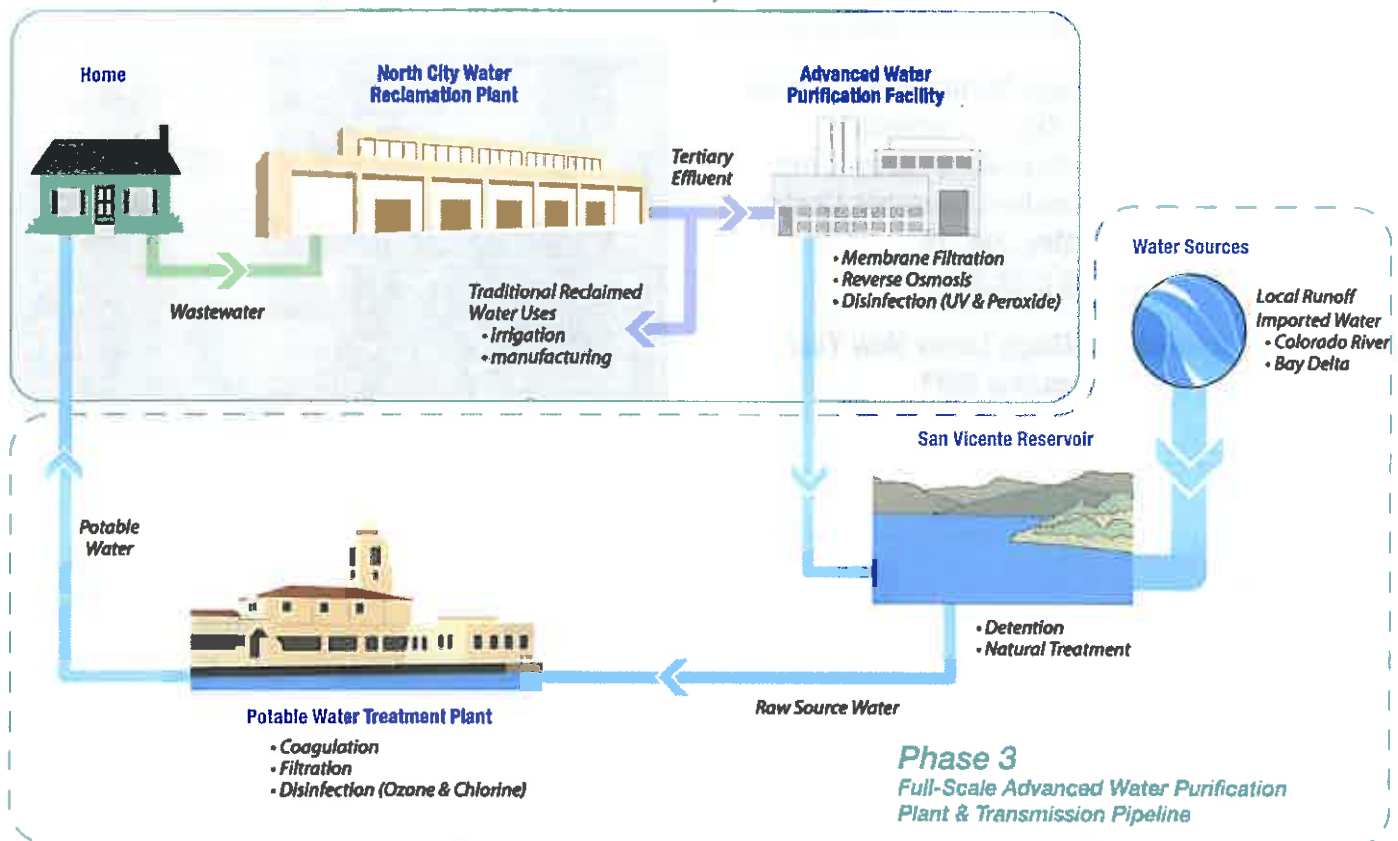
At the AWPF, the City will start with recycled water and, using advanced water purification technology, will purify it to a level equivalent to distilled water. Advanced water purification technology includes membrane filtration, reverse osmosis, and disinfection by ultraviolet light and hydrogen peroxide. The resulting purified water is of higher quality than any of the City's existing raw water supplies.

The AWPF will produce approximately 1 million gallons of purified water per day for about a year. During the demonstration phase, the water produced at the facility will be used for irrigation, the same way the existing recycled water is used. It will not be added to the existing drinking water supply during the demonstration phase.

Free tours of the AWPF will be offered to the public when construction is complete. Details will be posted on www.purewatersd.org as the facility completion date nears.

City of San Diego's Demonstration Project Water Purification Demonstration Process

Phase 2 Demonstration-Scale Project



Community Involvement

A major component of the Water Purification Demonstration Project is an extensive public education and outreach program that is being implemented throughout the City of San Diego. This program includes public presentations, the distribution of information at community events and on the project website, and tours of the AWPf once it is completed in the spring of 2011.

Since its launch in July, the Demonstration Project speakers bureau has been actively seeking opportunities to make presentations to civic, business and community groups as a way to engage the public and gather feedback on project information. Information about the project is presented by a member of the City's Demonstration Project team and includes information about San Diego's need for a



local and reliable water supply, the purpose of the Demonstration Project, a description of the advanced water purification process, and the potential use of advanced purified water for reservoir augmentation in the future. Presentations are followed by an opportunity to ask questions or focus on an area of interest to a particular group.

To schedule a presentation for your organization or business, please contact the speakers bureau at (619) 533-6638 or email purewatersd@sandiego.gov. A calendar of upcoming presentations that are open to the public is available on the project website, which also includes more detailed project information and a list of past presentations.

Upcoming Events

Learn more about the Demonstration Project at one of the following community events. Project team members will be present to answer questions about the project and to share the latest project news.

13th Annual San Diego Multicultural Festival
Martin Luther King Jr. Promenade
(Downtown San Diego along Harbor Drive
across the street from the Convention Center)
Saturday, Jan. 15
www.ccdc.com

**6th Annual San Diego Lunar New Year
Tet Festival 2011**
Balboa Park
Saturday, Jan. 29
www.sdtet.com

Stay tuned for tours of the
Advanced Water Purification Facility
beginning in Spring 2011



North City Water Reclamation Plant



PureWaterSD.org

Visit our project website to sign up for email versions of Pure News and to keep informed about this important project.



City of San Diego Public Utilities Department • Long-Range Planning & Water Resources Division
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E-Update

Water Purification | Demonstration Project

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.



THE CITY OF SAN DIEGO



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The City of San Diego's Water Purification Demonstration Project is underway to examine the use of advanced water purification technology on high quality recycled wastewater. The Demonstration Project will determine the feasibility of a full-scale reservoir augmentation project, which would diversify San Diego's water supply, reduce its dependence on imported water and provide a safe source of drinking water for residents.

The San Diego Public Utilities Department invites you to visit the Water Purification Demonstration Project website at www.purewatersd.org to learn more. The project's public education and outreach program is offering informative presentations to all groups upon request and free tours of the Advanced Water Purification Facility following its completion in 2011. For more information, please call (619) 533-7572 or email purewatersd@sandiego.gov.

We hope that you will become informed and get involved in this important project for San Diego's future!



Recycled Water

WPDP

In the News

[New Source of Drinking Water Hinges on Pilot Project](#)
(PDF)

San Diego Union Tribune, October 11, 2010

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