



Pure News: Issue 10

Welcome to Pure News, a newsletter with the latest information on the City's efforts to provide a reliable, local drinking water supply and the role water purification plays.

It's Pure Water San Diego

The City of San Diego's long history with water purification is now paving the way for future water reliability. The City's efforts to bring purified water to San Diego will increase the use of the available recycled water and decrease our dependence on imported water.

The idea of turning wastewater into drinking water goes back to 1998 when an early purification project was launched. It was not until 2004 that a second wave of interest in water purification took hold. A water reuse study was conducted and later determined water

purification via reservoir augmentation was the preferred option for San Diego. This option, known as indirect potable reuse, would mean adding newly purified water to existing raw water supplies in a reservoir.

To determine the feasibility of a full-scale water purification project, a demonstration project was conducted from 2009 to 2013. The demonstration project would also determine a pathway to regulatory approval since no regulations for reservoir augmentation currently exist. Advanced water treatment technologies were examined at a pilot facility for one year. Following the year-long testing, it was determined that water purification is a viable option for San Diego. The results showed that the purified water met drinking water quality standards set forth by the California Department of Public Health. The complete findings and results of the demonstration project were documented in a report

and shortly thereafter adopted by the City Council. At this meeting, the City Council directed staff to undertake a number of new tasks.

These "next steps" include devising a plan for a full-scale water purification treatment plant, developing a schedule and financing plan, and continuing public outreach and education. The Council also requested that direct potable reuse (purified water sent directly to a drinking water treatment plant and not to an environmental buffer, such as a reservoir) be explored concurrently.

On July 31, 2013, a progress report was presented to the Council's Natural Resources and Culture Committee, laying out the components of the implementation strategy. These components further define the City's potable reuse options (both indirect and direct).

The City is engaged in a variety of tasks and will keep San Diegans informed about progress toward increasing local water supplies and making water purification a reality. Opportunities to learn more are available through tours and presentations. Visit purewatersd.org/tours.shtml to register for a tour or email purewatersd@sandiego.gov to request a presentation.



Educating San Diego Youth about Water Purification

Over the last several years, the City of San Diego has been fortunate to have the opportunity to educate young San Diegans about the need for reliable water and the role water purification can play in supplementing local supplies. Elementary through high school classes, home-schooled groups, and Boy Scout and Girl Scout troops have been among the thousands of guests to tour the AWP Facility. In July, the Elementary Institute of Science brought its newest round of students to tour the facility to learn more about the scientific processes of water purification.

Although tours continue to provide a great hands-on activity for those who are able to make it to the facility, the City has explored other opportunities to reach youth. In conjunction with Think Blue and San Diego Coastkeeper, the City is partnering with Project SWELL, a school-based science curriculum that teaches children about the importance of the San Diego region's waterways. Through this partnership,

the City is developing a unique curriculum that will explain the water purification process and the importance of having a reliable, local source of water. Teachers in hundreds of classrooms in San Diego will have the opportunity to help their students learn



more about a unique solution to local water issues. Enthusiasm from youth groups has also propelled lasting partnerships with Girl Scouts San Diego and the Boy Scouts San Diego-Imperial Council. The City is working closely with both groups to plan special activities for scouts. On November 16, the City hosted a half-day event featuring tours of the AWP Facility that fulfill some of the requirements for Boy Scouts to earn their Public Health and Soil & Water Conservation merit badges. A half-day workshop will also be organized for Girl Scouts in December as part of their "It's Your Planet – Love It" journey.

Even Superheroes Need Water

With the risk of water shortages resulting from earthquakes and droughts and the rising cost of imported water, San Diego's need for a local water supply source has become more urgent. As thousands of comic book fans, zombies, vampires and, of course, superheroes flocked to San Diego for Comic-Con in July, this major event served as a reminder that water is not just needed for San Diegans, but for those who visit as well.

In the spirit of Comic-Con, the City spread the word about the super science and technology of water purification through a colorful, eye-catching trolley poster. Trolley advertisements around the City highlighted not only the technology, but also how everyone – including superheroes – needs water to survive.



Understanding Potable Reuse

Water reuse offers communities around the globe a locally controlled and reliable solution to increasing their water supplies. The water needs and sources, public health regulations, costs, and the types of water infrastructure in place, such as distribution systems, man-made reservoirs, or natural groundwater basins, determine how reused water becomes part of the drinking water supply.

Communities in El Paso, Texas, and Orange County, California, for example, reuse water to replenish groundwater basins. Others, such as the Upper Occoquan Service Authority in Fairfax, Virginia, put it into surface water reservoirs. In the case of the City, potable reuse is the addition of purified water into a raw water supply. The City of San Diego is looking at implementing either indirect potable reuse (IPR) or direct potable reuse (DPR).

With IPR, the purified water is added to an environmental buffer, such as a groundwater basin or reservoir, before being treated again at a drinking water treatment plant. Direct potable reuse uses a similar treatment process as IPR, but because there is no environmental buffer, a DPR system would likely employ other advanced treatment processes and quality assurance measures that are yet to be determined. Like IPR, purified water from DPR would undergo additional treatment at a conventional drinking water treatment plant before distribution.



Alvarado Water Treatment Plant, one of San Diego's drinking water treatment facilities

The City has successfully obtained grant funding for research to help define regulatory criteria for direct potable reuse. The work includes conducting additional testing to determine the specific processes to be used in place of an environmental buffer for DPR.

Water Purification Process

Indirect Potable Reuse



multiple treatment barriers are the key to protecting public health

Direct Potable Reuse



Recognition for a Job Well Done

The City of San Diego is honored to receive recognition for its water purification efforts from three prominent industry organizations.

On September 18, the Planning and Conservation League honored the Water Purification Demonstration Project with the Dorothy Green Water Award for its groundbreaking work in water purification. The league promotes legislation and projects that protect and improve the California environment.



The San Diego Industrial Environmental Association awarded the City's Public Utilities Department on November 5 with an Environmental Excellence Award for its accomplishments in sustainability. The award recognizes the Public Utilities Department for its many sustainable efforts, including its work in determining the feasibility of water purification as a sustainable drinking water supply option for San Diego.

Additionally, the American Water Resources Association awarded Deputy Director Marsi A. Steirer on November 6 with the Mary H. Marsh Medal for Exemplary Contributions to the Protection and Wise Use of the Nation's Water Resources. The Mary H. Marsh Medal is awarded to an individual who has achieved a status of eminence in some aspect of public service related to water resources education and/or management. Steirer was honored for her more than 25 years of contributions to the protection and expansion of water resources in San Diego, particularly for her recent work in leading the water purification efforts as project director.



Carol Collier, AWRA president (left), with Marsi A. Steirer, Public Utilities Department deputy director, accepting the Mary H. Marsh Medal award

Receiving awards is always a great honor, and we recognize that there is more work to do. The Pure Water team continues to work towards implementing water purification in a safe, cost effective, and environmentally sound manner.

 @PureWaterSD



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