

## Water Reuse Study

Recycled water is an important component of planning for an adequate and reliable future water supply for San Diego. In January 2004, the San Diego City Council directed the Water Department to research and evaluate all options to increase recycled water use in the City.



### A Widely Used Resource

Recycled water has been used in San Diego County for decades. Today, 17 local agencies have water recycling projects. In southern California, recycled water has been used for nearly 30 years in Irvine and used extensively in the Los Angeles area. In Orange County, recycled water with advanced treatment is added to a drinking water aquifer to create a seawater intrusion barrier and to augment their drinking water supply.

### Public Involvement

The Water Reuse Study has used a variety of ways to inform City residents about the Study. A key component was creating a 67-member stakeholder group, the City of San Diego Assembly on Water Reuse.

The group held two workshops and produced statements of opinion on Study options and the evaluation criteria used for analyzing each option. The group also reviewed the Interim Report that outlined the possible strategies developed for increasing the use of recycled water.

Public involvement activities have also included a speakers bureau, stakeholder interviews, Study website, telephone survey, electronic news briefs, a telephone hotline and informal opinion surveys.

### Study Mission Statement

To pursue opportunities to increase local water supply and reliability, and optimize local water assets, through a comprehensive study of recycled water.

### Study Objective

To conduct an impartial, balanced, comprehensive and science-based study of all recycled water opportunities so that the City can meet current and future water supply and reuse needs.

### Stay Informed and Give Your Opinion

The Study website contains information on the various community activities, media releases, monthly news briefs and materials related to the City of San Diego Assembly on Water Reuse. An informal public opinion survey on the website allows readers to give feedback on water reuse options and recycled water use.



### Water Reuse Study

City of San Diego Water Department  
600 B Street, Suite 700, MS907  
San Diego, CA 92101-4506  
Public Information Line: (619) 533-4631  
Speakers Bureau Requests: (619) 533-6638  
E-mail: [waterreusestudy@sandiego.gov](mailto:waterreusestudy@sandiego.gov)  
[www.sandiego.gov/water/waterreusestudy](http://www.sandiego.gov/water/waterreusestudy)

Printed on Recycled Paper

rev.12/05

## City of San Diego Water Department



### Water Reuse Study: Local Solutions to Our Long-Term Water Needs

[www.sandiego.gov/  
water/waterreusestudy](http://www.sandiego.gov/water/waterreusestudy)



# Water Reuse Study

## Local Solutions to Our Long-Term Water Needs

### A Need for More Local Water Sources

Water is essential to our growing economy, our quality of life and our future. Increasing our use of recycled water helps diversify our local water resources and ensures a reliable water supply.

The City of San Diego imports 80 to 90 percent of its water supply from northern California and the Colorado River. The City's other water sources are from stored local runoff and water recycling. Even with aggressive conservation efforts, the City could need 25 percent more water in 2030.

The availability of imported water supplies can be reduced during water shortages and drought. However, recycled water is available because it is produced locally and not subject to restrictions that may be imposed on imported water during times of low supply.

### Economic and Environmental Benefits

As the costs of imported water continue to rise, producing a local supply of recycled water is an economic advantage. Additionally, recycled water is priced less than drinking water.

Demonstrating a reliable water supply is vital to local economic development. Businesses and industry look at water reliability when making business decisions such as relocating or expanding facilities. Additionally, when wastewater is recycled and reused locally, less is treated and disposed of in the ocean.



### The City's Recycled Water Program

The City of San Diego operates two state-of-the-art water reclamation facilities. The larger is the North City Water Reclamation Plant, which opened in 1997, and can treat up to 30 million gallons of wastewater per day to produce recycled water. The South Bay Water Reclamation Plant, which opened in 2002, can treat up to 15 million gallons of wastewater per day to produce recycled water.

Both plants produce tertiary level recycled water, which is safe for irrigation and industrial use. The plants are capable of increasing production, but need high year-round demands to maximize production. When recycled water is used primarily for outdoor irrigation, seasonal demands fluctuate as usage is higher in the warmer months, resulting in under-utilized supplies in the cooler months.

### Water Reuse Options in the Study

The City Council directed the Water Reuse Study to analyze the feasibility of several options to increase the use of recycled water in the City. These options have been reviewed and researched and will be presented to the City Council for policy direction.

- Continue expanding the system for irrigation and industrial customers
- Create storage reservoirs
- Add to streams or create wetlands
- Recharge, improve or protect groundwater basins
- Add to aquifers used for drinking water supplies after additional advanced water treatment
- Add to reservoirs storing untreated drinking water supplies after additional advanced water treatment
- Graywater use

### Strategies Identified in the Study

The Study's research team developed six possible strategies to increase production and maximize recycled water use. The strategies involve expanding non-potable (non-drinking) uses, wetlands enhancement, and reservoir augmentation - a form of indirect potable (drinking) reuse.

Reservoir augmentation requires advanced water treatment (AWT) to the tertiary level recycled water. This highly treated recycled water is then blended with untreated water sources stored in a local reservoir. After a detention time of 6-12 months, the water is then treated at a drinking water filtration plant to meet all state and federal drinking water guidelines.

Maximizing recycled water use will decrease imported water by about 37 million gallons per day, or 12 percent of the City's future water demand.

### Research on Advanced Water Treatment

Research studies at the North City Water Reclamation Plant are analyzing and testing the water quality aspects of an AWT process on tertiary level recycled water produced at the plant. The three steps are:

- micro/ultra filtration
- reverse osmosis filtration
- advanced oxidation with ultraviolet light and hydrogen peroxide

The final product water is similar in quality to distilled water. The two filtration steps are also used in the seawater desalination processes to make drinking water. The AWT steps are necessary before recycled water can be used to supplement drinking water supplies in underground aquifers or open reservoirs.

### Independent Review and Input

An Independent Advisory Panel of leaders in the areas of medicine, science, education and economics was assembled by the National Water Research Institute. The panel reviewed aspects of the Study options and strategies including health, scientific, technological and economic components and provided formal feedback.