



# Water Recycling

A locally developed, drought-resilient supply



## DIVERSIFICATION Enhancing Water Supply Reliability

Recycling water for non-potable purposes has been a key component of the San Diego region's water supply diversification strategy for more than 20 years. The region's water agencies are committed to becoming more self-reliant by developing local water resources and reducing dependence on imported water.

### Regional Reuse Benefits

Recycled water, also referred to as reclaimed water, is wastewater that has been extensively treated so that it can be used again for non-potable purposes such as landscape irrigation, decorative fountains and industrial needs. The benefits of recycled water include:

- Reducing dependence on imported water
- Decreasing vulnerability to drought and other shortages
- Reducing ocean discharge of wastewater

### The Treatment Process

Recycled water facilities simulate the filtration, decomposition and disinfection processes found in nature. Some agencies also provide an additional treatment step to further reduce mineral and salinity levels in their recycled water supplies. Below are the treatment steps associated with producing recycled water.

**Primary Treatment** – Recycling water starts when wastewater goes through mechanical screening to remove grit and sand. The wastewater then enters large holding tanks, where dirt and heavy materials settle to the bottom and are removed. Lighter materials, such as oils and grease, rise to the surface for removal.

**Secondary Treatment** – After primary treatment, recycled water goes through biological processes to get rid of dissolved organic matter and tiny waste particles too light to settle out. Bacterial cultures already present in wastewater feed on the particles and dissolved organic materials. As bacteria grow and multiply, they convert nutrients into cell material called "biomass." As biomass grows heavier, it settles out and removes many of the original organics.

**Tertiary Treatment** – The next step is tertiary treatment, which involves filtering water through sand or anthracite, then chlorinating it to kill any remaining bacteria or viruses. In some cases, the water is then dechlorinated to protect aquatic life in waterways

### AF = acre-foot

One acre-foot is approximately 325,900 gallons, enough to supply 2.5 single-family households of four for a year.



Recycled water irrigates park landscape and fills the seven lakes of the Santee Lakes project.

## Recycled Water

that receive recycled water.

At the tertiary level of treatment, recycled water is clear and odorless – clean enough for non-potable purposes. It can irrigate crops, parks, freeway embankments, median strips and golf courses. It also can be used for toilet flushing, along with some commercial and industrial processes. Tertiary treated water is delivered to users through separate plumbing systems that are identified by their distinctive purple color and signs illustrating that the water is not safe for drinking. All

recycled water facilities and all sites that use recycled water are regulated to meet regional water quality and state public health standards.

In 2020, regional recycled water use is projected to be more than 40,000 acre-feet. Every gallon of recycled water is one less gallon of potable water that's used for irrigation or industrial purposes.

To learn more about recycled water, go to [sdcwa.org/recycled-water](https://sdcwa.org/recycled-water). ■



*Distinctive purple pipes identify recycled water systems.*



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