

Recycled Water

California's unique geography and Mediterranean climate have allowed the State to become one of the most productive agricultural regions in the world. The Sierra Nevada Mountain range that lines the eastern edge of the State capture and store winter precipitation that can be used for summer irrigation in the Central Valley, San Benito County and elsewhere in our state. This water, combined with the Mediterranean climate permits the growing of a great number of crops. California produces over 250 different crops and leads the nation in production of 75 commodities. California is the sole producer of 12 different commodities including almonds, artichokes, dates, figs, raisins, kiwifruit, olives, persimmons, pistachios, prunes and walnuts.

Most of this production would not be possible without irrigation. In an average year California agriculture irrigates 9.6 million acres using roughly 34 million acre-feet of water of the 43 million acre-feet diverted from surface waters or pumped from groundwater.

California's population growth and greater awareness of environmental water requirements has increased the pressure on California agriculture to use water more efficiently and to make more water available for urban and environmental uses. Decreasing agricultural water use is difficult for several reasons. First, California agricultural water use when considered on a broad regional scale, for the most part, is very efficient. Individual fields and farms in some regions may have low efficiencies, but water that is not used on one farm or field is often used on a nearby farm or field. Secondly, for most crops, production and yield is directly related to crop water use. A decrease in applied water will often directly decrease yield. The key is management strategies that improve water use efficiency without decreasing yield.

There are technologies and management strategies available that conserve water while maintaining yield and production standards. These technologies and management strategies like improved irrigation scheduling and crop specific irrigation management often not only conserve water, but also save energy and decrease grower's costs.

The best way to be efficient with water is to use it more than once. According to the California Department of Water Resources, over 525,000 acre-feet of wastewater is recycled each year. About half of that (48%) is used for agricultural irrigation. Another 20% is used for landscape irrigation, and about 12% is used for groundwater recharge.

In future years, experts predict California will recycle even more wastewater. The State has set a target of achieving close to 1 million acre-feet of recycled wastewater in coming decades. That level of recycling will go a long way toward meeting the needs of the 17 million additional residents California will have by 2030.

Recycled water is a generic term for water reclamation and reuse, where the resulting water is referred to as recycled water. But you might also find a number of other terms used in the water industry to describe recycled water or the process to make it. These include:

- Water reclamation
- Recycled water
- Water reuse
- Reclaimed water
- Grey water

Locally, wastewater is being treated to be used for agricultural irrigation and groundwater recharge. The water is treated to “tertiary level,” which means it’s clean enough to drink, but that’s prohibited under state law. It’s then conveyed through purple pipes, the industry standard for non-potable water.

The Hollister Urban Area Water Project makes this possible (www.hollisterwaterproject.com). Imported surface water will be treated at two treatment plants. The Lessalt Water Treatment Plant is operational while the West Hills Water Treatment Plant is scheduled to be completed by this summer. Taken together, the plants will increase the quality of drinking water throughout the Hollister area. It will allow the City of Hollister and Sunnyslope to decrease their pumping of lower quality groundwater, allow water recycling for local crops and assist the City of Hollister and Sunnyslope County Water District in meeting State Water Quality Board wastewater discharge requirements.

The California Water Recycling Criteria (encoded in Title 22 of the California Code of Administration) allow 43 specified uses of recycled water—including irrigation of all types of food crops. These criteria include different water quality requirements for irrigation of each type of crop; those eaten raw, those receiving processing before consumption, and those not involving any human contact before industrial processing. These regulations are among the most stringent in the world and have been used as a model for many other countries’ guidelines and water reuse regulations. In California, growers using recycled water meeting the Title 22 criteria have shown over the last 50 years that this practice is safe and economical. Recycled water is also sustainable, conserves energy and provides a significant portion of the nutrients needed by the crops—nitrogen, phosphorus and micronutrients.

The City of Hollister’s wastewater reclamation plant is currently receiving 2.3 million gallons per day (mgpd) of wastewater. The plant was built for the future growth of our community with a capacity of receiving over 4 mgpd. Eighty percent of this water can be recycled. It is estimated that 1,400 acre feet of water (456,000,000 gallons) will be delivered to agricultural customers during the growing season. The rest will be allowed to percolate back into our groundwater basin to help recharge our local aquifers. Processing wastewater into recycled water is like getting two gallons of water for every one gallon of imported water!

Urban wastewater, after treatment, is a good substitute for groundwater or imported surface water for irrigation and other on-farm uses. The state — so vigilantly watching Californians’ water use — has set no limits on the use of recycled water resources.

Efficient use of our water is key to a growing population and climate uncertainty. Using water more than once isn’t only efficient, it’s productive!