Ways to Reuse Water

The only safe water is water that is properly treated for the use intended. Using the term reclaimed water or reused water can be confusing as the quality can vary depending on the use. Treatment and monitoring always need to be appropriate to the application intended. In Santa Cruz County, water reuse may be used for landscape irrigation and for crops suitable for consumption, industrial/commercial purposes, groundwater replenishment, and potentially to augment potable water supplies if the program demonstrates protection of public health. The quality of water for the intended use differs. It is important to realize that not all water reuse is the same because not all treatment is the same.

Irrigation/Landscape Uses

Recycled water is ideally suited for the irrigation of plants in both the landscape and agricultural sectors. In the landscape sector, recycled water is used for the irrigation of parks, school yards, golf courses, cemeteries, commercial/industrial landscaping and road landscaping. For the agricultural sector, recycled water can be used for the irrigation of all food crops, provided it is treated to the tertiary level and disinfected. This standard is has been met by all recycled water produced in South Santa Cruz County and Northern Monterey County.

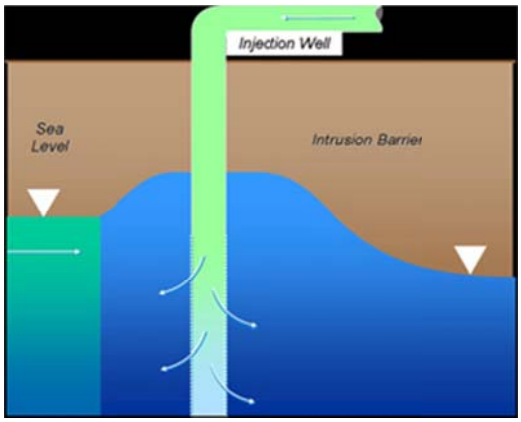
Industrial/Commercial Uses

Recycled water can be used for a variety of industrial and commercial purposes. The most common uses of recycled water in the business sector in our neighboring county, Santa Clara, are for cooling towers, process water, boiler feed, mixing concrete, evaporative condensers, among others. Many industries, including paper manufacturers, the high-tech sector, data server farms, power plants, and construction companies (for dust suppression) use recycled water because it makes good business sense. In other neighboring counties, recycled water is used at food processing facilities, oil refineries, commercial car washes, textile mills, commercial laundries, chemical plants and metal finishers. Recycled water can also be used for flushing toilets in commercial facilities.

Recharge of Groundwater

Replenishment: Some communities such as Irvine, Orange County, and Scottsdale have a history of using this water for drinking water purposes with groundwater replenishment programs. Wastewater that receives complete advanced treatment has the potential to actually improve existing groundwater quality. In fact, Orange County Water District has the world's

largest water purification system for potable reuse. Its state-of-the-art-facility can produce 70 million gallons of high-quality water every day. This is enough water for nearly 600,000 people. The project has been so successful that the system is being expanded to produce 100 MGD of purified water.



Seawater Intrusion Barrier: The threat of salt water from the ocean contaminating coastal groundwater basins has been a concern for decades. Pumping more water out of groundwater basins increases the possibility of salt water seeping into the basin.

The Orange County Water District (OCWD) built Water Factory 21 (WF-21) in the mid-1970s to treat wastewater to inject into 23 wells along the coast, creating a seawater intrusion barrier. As demands to pump more water out of the basin increased, the barrier required more purified water than WF-21 could produce. With the completion of the Groundwater Replenishment System (GWRS), OCWD now produces enough water to form a highly protective barrier that safeguards Orange County's fresh water supply. About half of the water produced by GWRS *(35 million gallons; 132,000 cubic meters)* is injected into the seawater intrusion barrier every day. The other half is infiltrated through spreading basins 13 miles inland to blend with groundwater.

Groundwater is an important component of the water supply portfolio for Santa Cruz. The Water Department serves customers high quality groundwater pumped from the Purisima Formation in the Live Oak area. Groundwater levels near the coastal Beltz wells during drought conditions are not sufficiently protective of seawater intrusion and could be improved with the injection of highly purified water to blend with groundwater near the coast. A replenishment program would function like health insurance, it would allow the Water Department to continue to manage pumping for the health of the groundwater basin in a variety of future climate conditions, given that the sea level is predicted to rise over time.

Drinking Water (Potable Water)

Though not currently planned, Santa Cruz Water Department may consider utilizing highly purified water produced in a local advanced water purification facility to augment drinking water supplies. This highly purified water, expected to meet all the stringent drinking water standards, could be pumped up to Loch Lomond or blended with water in the San Lorenzo River or put into the raw water pipeline. The blended water would then be treated again at the Graham Hill Water Treatment Plant. Some communities in the world use this technique today to safely augment potable water supplies (Village of Cloudcroft, New Mexico, Big Springs, Texas, Windhoek, Namibia, Singapore). Implementation of potable reuse in areas having limited surface and groundwater sources can result in a sustainable and reliable system for supplying high-quality water to urban communities.