GROUNDWATER RELIABILITY PLUS

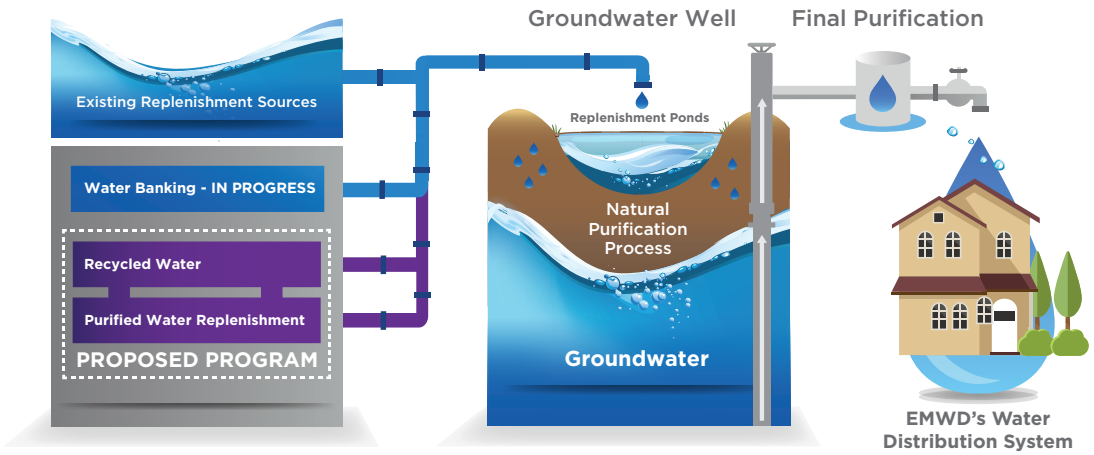
Securing Our Water Future

PURIFIED WATER REPLENISHMENT

A Future Local Drinking Water Supply

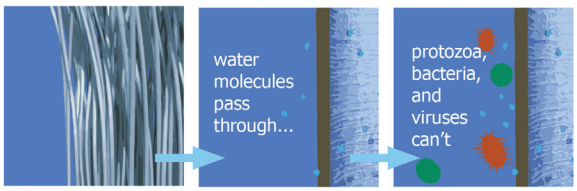
Purified Water Replenishment is the next phase of Eastern Municipal Water District's (EMWD) Groundwater Reliability Plus initiative, which has improved the quality and quantity of the water in our local groundwater basins.

PURIFIED WATER REPLENISHMENT will blend advanced treated recycled water (purified water) with tertiary treated recycled water, which is currently used to irrigate food crops and landscaping throughout EMWD's service area. This water would then be pumped to replenishment basins in San Jacinto where it will naturally seep into the ground and blend with existing groundwater. After traveling through the soil for a minimum of six months, the water would be pumped out of the ground through EMWD's network of groundwater wells and go through one final cleaning step.



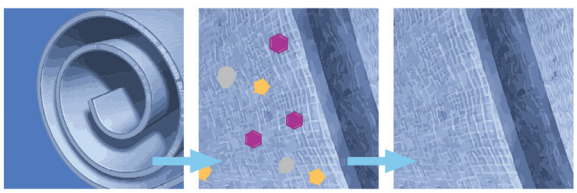
EMWD continuously tests to ensure the water we provide to our customers meets or surpasses all state and federal drinking water standards before it is sent to homes and businesses in our service area for drinking and other uses.

Step 1: Microfiltration



Recycled water is pumped through tubes filled with tiny membranes made up of hollow fibers and perforated with holes 1/300th the width of a human hair. Solids and bacteria are caught in the fibers and removed.

Step 2: Reverse Osmosis



High-pressure pumps force water through a semi-permeable membrane that transmits water but stops dissolved salts and other minerals.

HOW DOES THE WATER PURIFICATION PROCESS WORK?

It starts with ***tertiary treated recycled water*** – this is used water that has been cleaned three times, so it is safe for agricultural - including food crops - and landscape irrigation, as well as industrial purposes in some places. For the Purified Water Replenishment program, recycled water will be purified using a multi-stage process of microfiltration and reverse osmosis. The purified water will then be blended with additional recycled water prior to being pumped to a replenishment pond, where it will be further purified through the natural physical and biological filtration processes that occurs in soil.

WHO ELSE IS DOING THIS?

The process of purifying recycled water and blending it with other water supplies, either in underground aquifers or surface water reservoirs, before it is cleaned and sent to customers as drinking water is also known as ***potable reuse***. Many cities and water agencies throughout California and other states are planning, constructing or operating potable reuse projects.

Of the 30 planned or operating projects in California, Orange County Water District's Groundwater Replenishment System (GWRS) is the largest potable reuse project of its type in the world. Currently producing 100 million gallons of purified water each day, GWRS began in January 2008 as a 70 million gallon per day (mgd) plant and is currently in its third and final expansion to ultimately produce and put 130 mgd of purified water into groundwater basins in Orange County. The nearest similar project is the Inland Empire Utilities Agency's that recharges its underground aquifer with 21,000 acre feet of tertiary treated recycled water each year. The City of San Diego will be the first to supplement a surface water reservoir with its Pure Water Program.

There is no new water on earth. We have the same amount of fresh water today as we have ever had. As part of the municipal water cycle, all water is used and cleaned over and over again. Purified water is the product of a science-based process that uses advanced technology to provide a safe and sustainable local water supply, even during periods of extended drought.

Want to learn more about Groundwater Reliability Plus and EMWD's programs like Water Banking and Purified Water Replenishment?

Visit our website at EMWD.org/gwr-plus to arrange a presentation or tour one of EMWD's facilities.