

A NEW SOURCE OF WATER FOR SOUTHERN CALIFORNIA

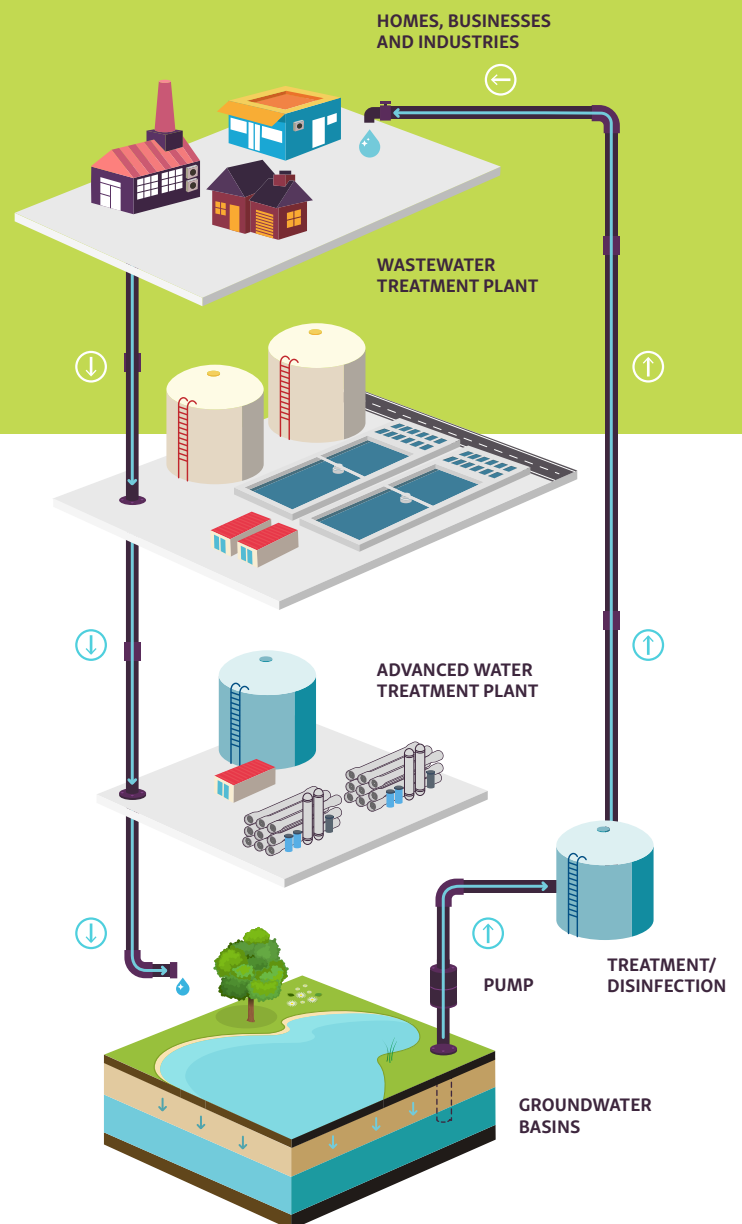
Water is too precious to use just once. So the Metropolitan Water District of Southern California is making a major investment in a potential water recycling project that will reuse water currently sent to the ocean. The Regional Recycled Water Program, a partnership with the Sanitation Districts of Los Angeles County, will purify wastewater to produce high quality water that can be used again. The program will start with a demonstration facility and could eventually become one of the largest advanced water treatment plants in the world.

How it works

The process begins with wastewater discharged from homes, businesses and industries. After the wastewater has been cleaned, it flows to an advanced water treatment plant where it is further purified. The water then replenishes groundwater basins, where it may be pumped up and used again. It could also be delivered to industrial facilities and potentially to Metropolitan's water treatment plants and delivery system.

Why it works

- Uses the region's largest untapped source of cleaned wastewater, currently sent to the ocean.
- Produces a drought-proof source of water, readily available rain or shine.
- Prepares the Southland in the event of a catastrophic earthquake by increasing local water supplies.
- Replenishes groundwater basins, which provide 30% of Southern California's water supply and have seen levels drop to historic lows in recent years.
- Considers and accommodates future regulations that could allow the water to flow to Metropolitan's water treatment plants and distribution system.
- Helps meet the needs of the region's growing economy and population at a cost comparable to other local water resources.
- Helps ensure regional water reliability through diversifying sources, in addition to conservation, local supply development and imported water.



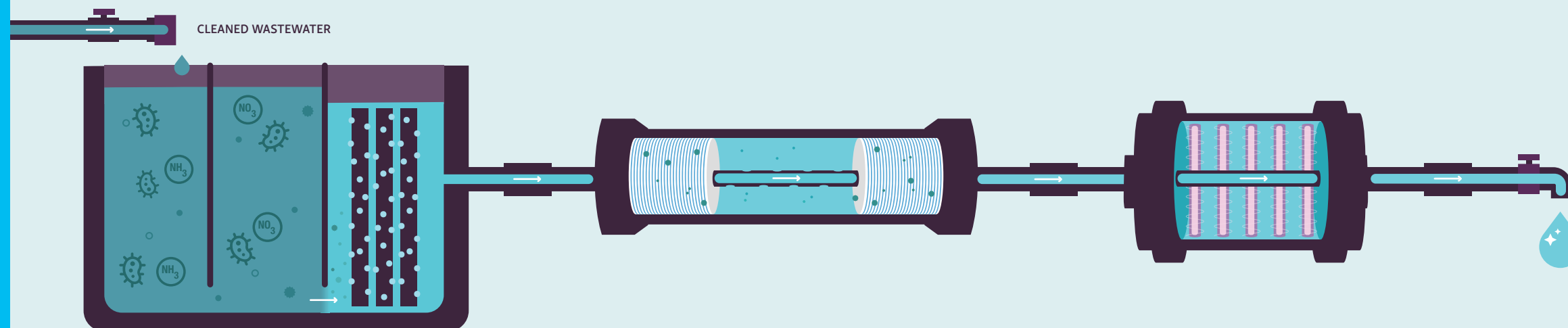
INTRODUCING THE REGIONAL RECYCLED WATER ADVANCED PURIFICATION CENTER

The new Regional Recycled Water Advanced Purification Center is a demonstration facility that takes cleaned wastewater from the Sanitation Districts' Joint Water Pollution Control Plant in Carson and applies a rigorous purification process to ensure the water is safe to reuse. The facility uses both tried and tested water treatment technologies employed across the world for decades and innovative processes to remove contaminants such as pharmaceuticals, pesticides, viruses, bacteria and potentially harmful chemicals down to the microscopic level, leaving only clean water.

THE PURIFICATION PROCESS

After wastewater is cleaned through multiple processes, it flows to the Regional Recycled Water Advanced Purification Center where it goes through a three-step purification process.

The end result is high quality, purified water that is safe to use again.



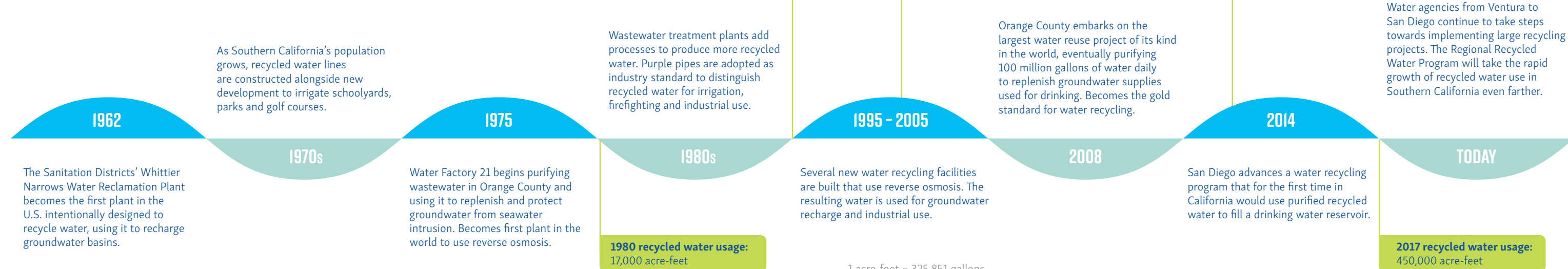
1 Membrane Bioreactors: Microorganisms remove ammonia and other nitrogen compounds, while membranes filter tiny particles, including microorganisms smaller than 1/100 of a grain of sand.

2 Reverse Osmosis: Pressurized membranes further remove microscopic materials, such as bacteria, pharmaceuticals and salts, eliminating more than 99% of all impurities.

3 Ultraviolet/Advanced Oxidation Process: Ultraviolet light and a powerful oxidant inactivate any remaining viruses and remove trace chemical compounds.

CONTINUING A RECYCLED WATER LEGACY

The past five decades have seen recycled water use in Southern California grow rapidly, for both irrigation and groundwater replenishment.



STARTING SMALL AND SCALING UP

The Advanced Purification Center is a demonstration facility that will generate information needed for the potential future construction of a full-scale advanced water treatment plant. It uses a unique application of membrane bioreactors designed to increase efficiency in the water recycling process. Scientists and engineers will test the process to ensure the resulting purified water meets the highest water quality standards. Once approved by regulators, the innovative process could be used in California and applied around the globe.

ADVANCED PURIFICATION CENTER:

A 500,000 gallon/day demonstration facility

Cost: \$17 million for construction

Timeline: Operation begins in spring 2019

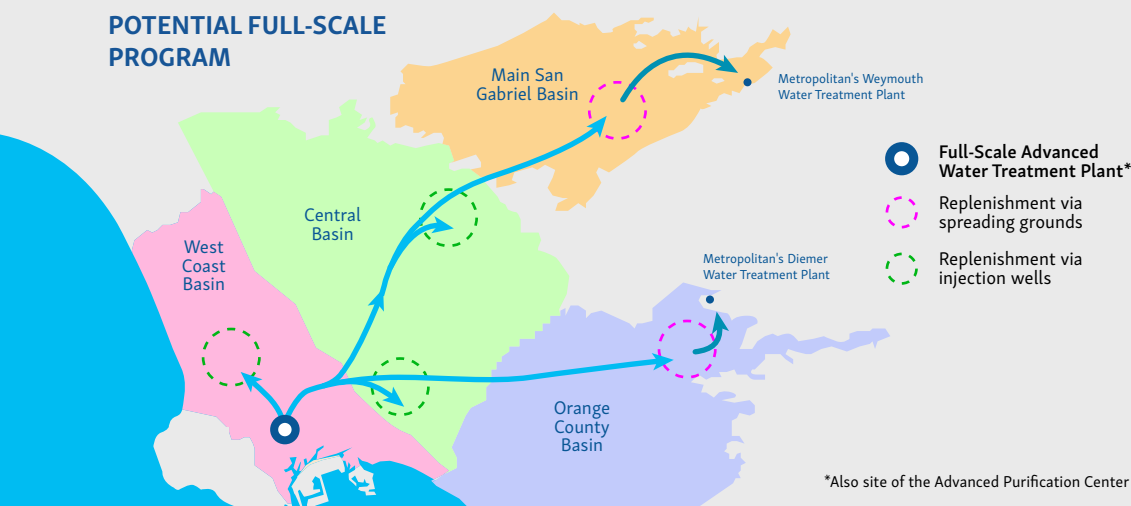
FULL-SCALE ADVANCED WATER TREATMENT PLANT:

A full-scale facility would produce up to 150 million gallons daily or 168,000 acre-feet annually, enough to serve more than 500,000 homes. Purified water could be delivered through over 60 miles of new pipelines to the region's groundwater basins, industrial facilities and potentially two of Metropolitan's water treatment plants.

Cost: \$3.4 billion to build, \$129 million annually to operate, resulting in a water cost of \$1,826/acre-foot

Timeline: Once approved, 16 years to design and build if constructed as a two-phase project

POTENTIAL FULL-SCALE PROGRAM



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

SANITATION DISTRICTS OF LOS ANGELES COUNTY



THE PARTNERS

The Metropolitan Water District of Southern California is a state-established cooperative of 26 cities and water agencies serving nearly 19 million people in six counties. The district imports water from the Colorado River and Northern California to supplement local supplies, and helps its members to develop increased water conservation, recycling, storage and other resource-management programs.

The Sanitation Districts of Los Angeles County is a regional public agency consisting of 24 independent special districts serving over 5.6 million people in 78 cities and the unincorporated territory within Los Angeles County. The Sanitation Districts protect public health and the environment through innovative and cost-effective wastewater and solid waste management and, in doing so, convert waste into resources such as recycled water, energy and recycled materials.

www.lacsd.org

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