



# ALBERT ROBLES CENTER

*Water Recycling &  
Environmental Learning*



ALBERT ROBLES CENTER FOR WATER RECYCLING AND ENVIRONMENTAL LEARNING

## GROUNDWATER REPLENISHMENT

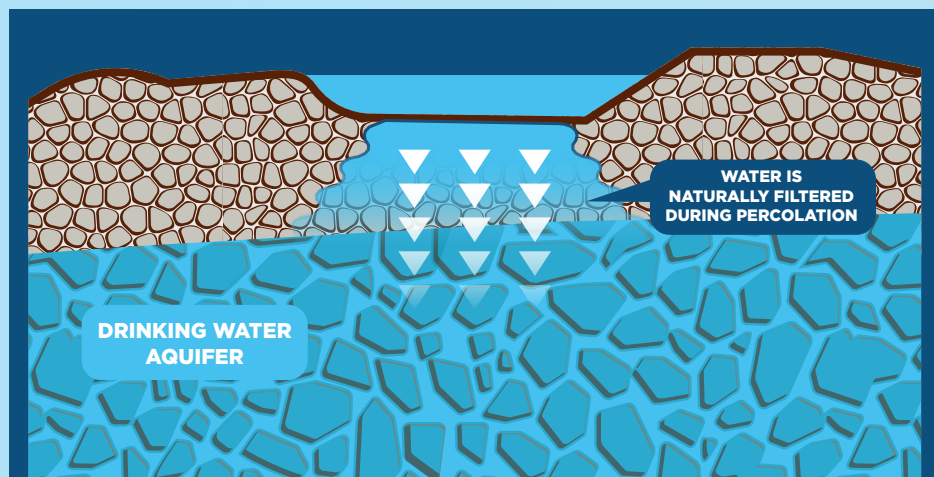
The Water Replenishment District (WRD) was established by a vote of the people in 1959 for the purpose of protecting and replenishing the groundwater resources of the Central and West Coast Groundwater Basins located in southern Los Angeles County.

WRD ensures the basins are healthy and stable in part by directing water to the Los Angeles County Department of Public Works San Gabriel and Rio Hondo Spreading Grounds. The spreading grounds are large ponds that allow water to soak into the underlying aquifers and replenish groundwater supplies.



Traditionally, WRD used imported water for supplemental spreading. However, after the implementation of the WRD Water Independence Now (WIN) Program, WRD now uses a sustainable and reliable supply of recycled water to supplement natural rainfall.

The keystone project for WIN is the Albert Robles Center (ARC), an advanced water treatment facility located in the City of Pico Rivera, CA. Water purified at ARC is delivered to the spreading grounds for groundwater replenishment.



Spreading grounds (or basins) are large ponds that allow water to percolate down into underlying aquifers.

## RECYCLING WHAT WE ALREADY HAVE

The Albert Robles Center purifies 14.8 million gallons of water per day. This adds up to 10,000 acre-feet, or about 3.25 billion gallons, per year.

The cycle begins with used water from homes and businesses going to the Los Angeles County Sanitation Districts' facility where it's cleaned three times. That water travels to ARC where it is cleaned 3 more times, before going to the spreading grounds. The cycle results in cities and utilities having a sustainable supply of groundwater to serve their customers.



The ARC water reuse program:

- > Provides locally sustainable and reliable supply for replenishment
- > Protects the quality and quantity of groundwater
- > Keeps cost of groundwater affordable for the long term
- > Reduces carbon footprint associated with imported water

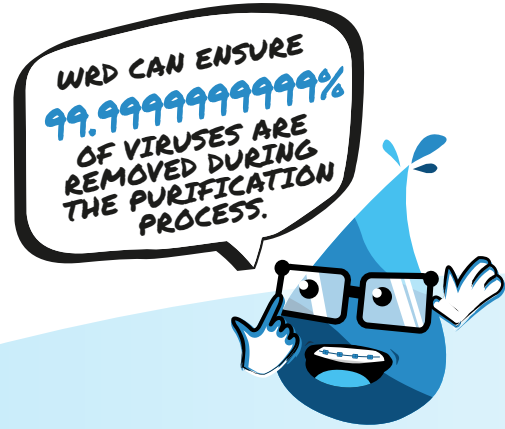
## PROJECT FUNDING

Support for the Albert Robles Center was provided by the State Water Resources Control Board, CA Department of Water Resources, US Bureau of Reclamation, Metropolitan Water District of Southern California, Southern California Edison, and the Rivers and Mountains Conservancy.

Funding for ARC includes a running total of \$54 million dollars in grants from multiple agencies and \$80 million in low interest loans through the Proposition 1 Water Bond.

# THE PURIFICATION PROCESS

The Advanced Water Treatment Facility at ARC purifies up to 14.8 million gallons per day (mgd) of advanced treated recycled water through a 3-step process including Ultrafiltration, Reverse Osmosis, and UV/AOP Disinfection.



## STAGE 1

### ULTRAFILTRATION

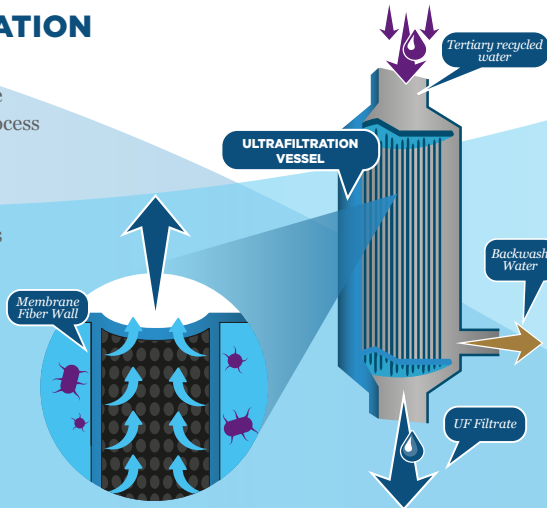
#### REMOVES:

- > Most Bacteria
- > Fine Particles
- > Sediments
- > Suspended Solids

- > Pre-treatment before Reverse Osmosis process

- > Extends the useful life of the Reverse Osmosis membranes

- > Pore size is 1/300 of a hair



## STAGE 2

### REVERSE OSMOSIS

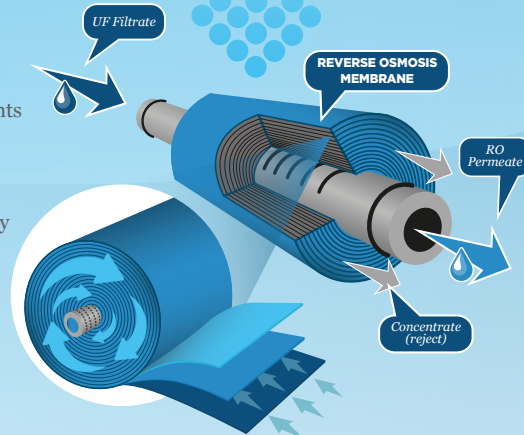
#### REMOVES:

- > Dissolved Solids
- > Organic Material
- > Most Viruses
- > Pesticides
- > Salt

- > Thin film membrane filters at molecular level

- > Over 99% of contaminants are removed at this stage

- > Best available technology for removing nearly all dissolved contaminants



## STAGE 3

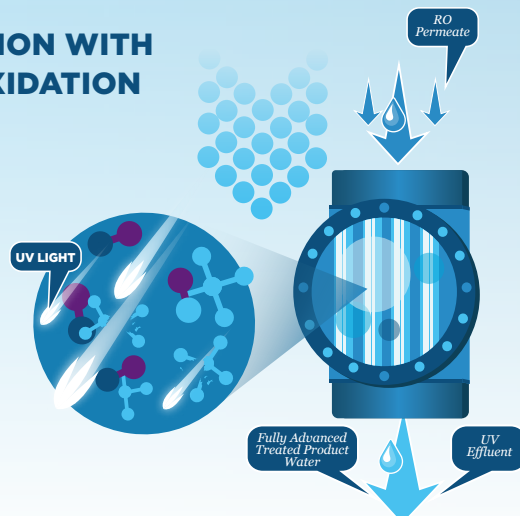
### UV DISINFECTION WITH ADVANCED OXIDATION

#### DISINFECTS:

- > Pharmaceuticals
- > Viruses
- > Carcinogens
- > Personal Care Products
- > Industrial Additives/Chemicals

- > Chlorine and UV light breaks chemical bonds

- > Final Disinfection



# THE ARC LEARNING CENTER

The ARC Learning Center invites visitors into a dynamic and engaging environment with over 30 digital and bilingual water exhibits. The exhibits build on people's prior knowledge of, and everyone's daily connection to, the water cycle with specific attention to groundwater and recycled water.

From entering an 'aquifer elevator' to 'making it rain' on a city, visitors are immersed into the world of water in a high-tech and interactive museum. At the end, visitors are invited to make a lasting pledge to water conservation and can drink the water from the treatment facility.

WATER CYCLE & CONSERVATION

GROUNDWATER & REPLENISHMENT

RECYCLED WATER



## ARC FIELD TRIP PROGRAM

Visit [WWW.WRD.ORG/TEACHER-LOUNGE](http://WWW.WRD.ORG/TEACHER-LOUNGE) for more information.

WRD is proud to offer free K-12th grade field trips for all schools throughout its vast service area. Field trips include an opportunity to visit a functioning advanced water treatment facility, the museum-grade learning center, as well as the demonstration gardens.

## LEED PLATINUM CERTIFICATION



The ARC facility was awarded Platinum Certification by the Leadership in Energy and Environmental Design (LEED) program. This is the highest rating offered to environmentally sustainable buildings and only 5.7 percent of LEED projects in the U.S. have achieved this distinguished designation. ARC achieved this honor through its innovative design to optimize the efficient use of water and energy while minimizing waste and increasing habitat.

## WATER WISE OUTSIDE

### ONSITE STORMWATER CAPTURE



Porous Concrete & Pervious Pavers  
▶ Allows for onsite stormwater infiltration.



Stormwater Storage & Infiltration System  
▶ Captures flow from large rain events.

### WATER SMART LANDSCAPING



▶ Water-efficient plants are watered with low-flow irrigation using recycled water.

## POWERING UP



▶ The 995 rooftop solar panels provide enough energy to power the Learning Center.



## LILLIAN KAWASAKI DEMONSTRATION GARDENS



During her tenure at WRD, Director Lillian Kawasaki initiated the Eco Gardener Program to promote water awareness and educate people about sustainability practices. She held the program close to her heart and the WRD Board of Directors honored her for her commitment and dedication to public service by naming the Eco Gardener Program, as well as the facility demonstration gardens after her.



## GARDEN FEATURES

The ARC facility is landscaped with California native and drought-tolerant plants and features a roof-top garden. There is a 1,200 square-foot butterfly garden that attracts many pollinators to the gardens. The site is irrigated with recycled water using sub-surface drip irrigation to maximize water efficiency.

The 250-foot-long San Gabriel River model allows visitors the chance to see how a rubber dam works inside the river channel and how water can be diverted into the Los Angeles County Spreading Grounds.

The site is also surrounded by five bioswales that act as ponding areas for stormwater when it collects onsite during a rain event.



## ABOUT WRD

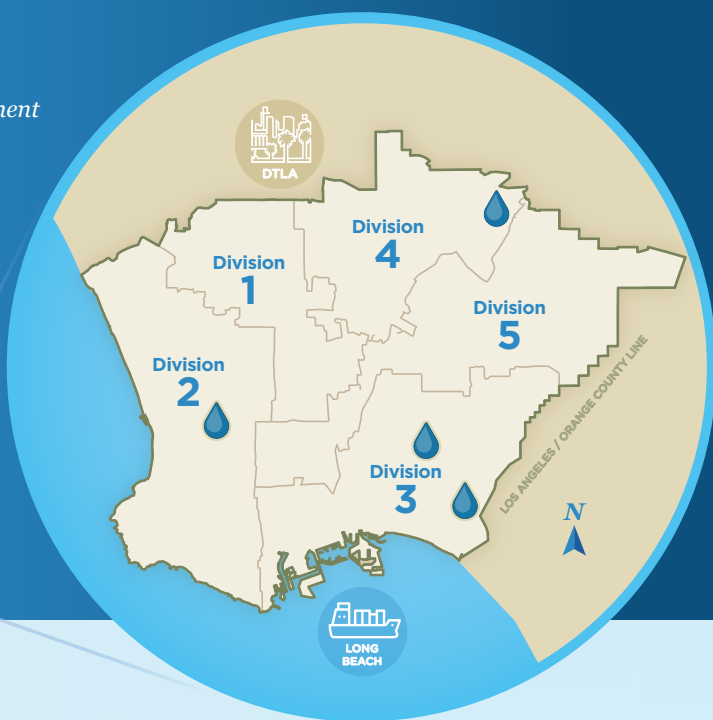
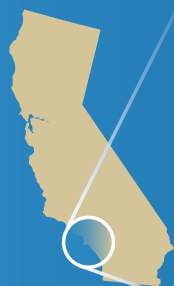
The Water Replenishment District (WRD) was established in 1959 to manage, protect, and replenish the Central and West Coast Groundwater Basins. WRD achieves its mission by:

- » Using effective and environmentally sound basin management practices and serving as the Administrative Body of the Watermaster for both basins
- » Monitoring and remediating the groundwater basins affected by natural and human-made contaminants
- » Owning and managing two advanced water treatment facilities and a groundwater desalter

*WRD manages and protects two of the most utilized urban groundwater basins in the nation. Groundwater from these basins provides nearly 50% of the total water supply for the four million residents in WRD's 43-city service area which covers 420 square miles in southern Los Angeles County. WRD ensures that a reliable and locally sustainable supply of high-quality groundwater is available through replenishment with recycled water and stormwater capture.*

The Water Replenishment District's service area in southern Los Angeles County

 = WRD Facility



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