



# 2 YEAR STRATEGIC PLAN



APRIL 2022

# WATER REPLENISHMENT DISTRICT SERVICE AREA

The Water Replenishment District (WRD) is a groundwater management agency responsible for replenishing and protecting the groundwater resources for 4 million residents. WRD's service area covers a 420-square mile region of southern Los Angeles County, including 43 cities and a portion of the City of Los Angeles.



## MISSION STATEMENT

To provide, protect, and preserve safe and sustainable groundwater.



## VISION STATEMENT

WRD has developed a vision statement to supplement the Mission Statement as a guiding principle for future strategic planning efforts:

*Utilizing groundwater aquifers to create a locally sustainable water supply for the Los Angeles Basin region.*

## Message from the BOARD OF DIRECTORS

The Water Replenishment District (WRD) has been committed to providing, protecting, and preserving the region’s groundwater supply since the District’s formation in 1959. Since then, WRD has been able to maintain these goals through a strategic planning process for both long-term and near-term efforts. Given the recent effects of our rapidly changing climate, long-term droughts and rising temperatures are our new normal. WRD’s efforts to create a locally sustainable and resilient supply for groundwater replenishment have ensured that our region can rely on locally sourced water and reduce the strain on drought-sensitive imported water supplies.

WRD is a leader in sustainable water management, having achieved independence from imported water for groundwater recharge in 2019 with the opening of the Albert Robles Center for Water Recycling and Environmental Learning in Pico Rivera and the completion of the Water Independence Now (WIN) Program.

ARC produces 14.8 million gallons per day of advanced treated water that is used to recharge two of the most utilized groundwater basins in the nation. Paired with other District initiatives to maximize stormwater capture, utilize empty storage space in our local aquifers, and remediate contaminated groundwater throughout our service area, WRD is poised to further reduce the need for imported water for the entire southern Los Angeles County region.

This 2-year Strategic Plan is a blueprint to ensure that the District’s new goal to further offset the region’s use of imported water is achieved in a timely and sustainable manner.

The future of our region’s groundwater supply has been secured through the District’s foresight to develop and implement planning efforts to increase regional sustainability. We are proud to develop these strategies and goals to continue WRD’s mission.

## BOARD OF DIRECTORS



**Joy Langford**  
Division 1



**Robert Katherman**  
Division 2



**John D. S. Allen**  
Division 3



**Sergio Calderon**  
Division 4



**Vera Robles DeWitt**  
Division 5

**Stephan Tucker**  
General Manager

# STRATEGIC CORE VALUES

The strategic planning process identified key Strategic Core Values for WRD based on input from management and staff. These core values help guide the district as it fulfills its mission of providing, protecting, and preserving sustainable groundwater for the district's 4 million residents.



The Strategic Core Values are outlined and described below:

## **SUSTAINABLE GROUNDWATER SUPPLY:**

Building and maintaining a sustainable groundwater supply is WRD's core mission. The district is committed to utilizing the most advanced technology to ensure that we continue to be at the forefront of groundwater management.

## **ACCOUNTABILITY AND TRANSPARENCY:**

WRD will continue working with our Technical Advisory and Budget Advisory Committees to ensure that we are accountable and transparent to our pumping community and residents within our service area. We are committed to openness and accountability in all of our actions.

**INTEGRITY:** Conducting operations with integrity ensures that the district maintains its moral and ethical obligations to our pumpers and residents in the service area.

**COLLABORATION:** Collaboration is key for the success of WRD's upcoming projects. WRD commits to continuing collaborative relationships with our pumping community, regulators, local legislators and partner agencies to further the district's goals.

**TRUST:** WRD's strives to build a culture of trust and honesty with all its stakeholders.

**EQUITY:** WRD commits to ensuring that community resources are used equitably throughout the service area. Resources within the WRD service area will be managed to ensure access to safe and clean drinking water for all stakeholders and residents.

# STRATEGIC PLANNING: PURPOSE & PROCESS

WRD has developed a strategic plan to guide the District in near-term and long-term planning efforts. These efforts begin at the highest level, looking 20 years into the future and setting visionary goals for increased regional sustainability. Building upon the successful WIN program, this effort has been envisioned as WIN 4 ALL: The 2040 Plan for Regional Water Independence.

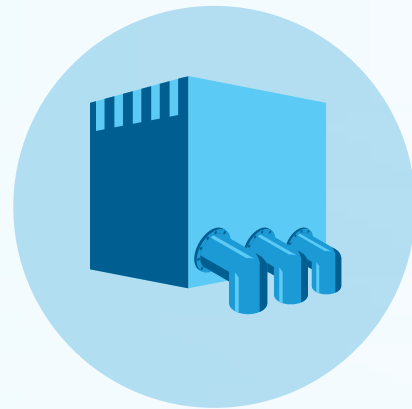
To provide near-term focus for accomplishing the WIN 4 ALL goals, WRD has produced this 2-Year Strategic Plan, which incorporates planning efforts from the regularly updated 5-Year Capital Improvement Projects Program document and enlists a 2-Year work plan for immediate District strategy moving into the following year.

## STRATEGIC GOALS



### EXPAND REPLENISHMENT OPPORTUNITIES

WRD will identify and secure new replenishment sources and locations to ensure reliable recharge water for adjudicated pumping allocations and also to utilize available storage space for increased local water supply.



### EXPAND EXTRACTION CAPACITY

WRD will expand groundwater extraction capacity through remediation, identification of new extraction sites and through incentives for groundwater pumps.



### MAXIMIZE INNOVATION AND ENVIRONMENTAL RESILIENCY

WRD will strive for continued increased efficiency in all treatment and recharge operations and will plan adaptability into new and existing projects.



### PROMOTE ORGANIZATIONAL EXCELLENCE

WRD will optimize internal operations, continue outreach and engagement with the public, regulators, and elected officials, and will maintain strong financial standing through accurate budgeting and obtainment of funding sources.

# REVIEW OF TOP ACCOMPLISHMENTS

## HYDROGEOLOGY DEPARTMENT



- Completed the installation of an additional extraction well, remedial design, and started the procurement process for treatment system installation to clean up perchlorate impacted groundwater in the Los Angeles Forebay. Eighty percent (80%) of the project costs are funded through a grant received through Proposition 1 for a total of \$10 million.
- Proposition 1 grant agreement received to destroy five inactive water supply wells to protect the drinking water aquifers of the Central Basin. The state of California is providing 80% of the total costs for an amount of \$844,000.
- PFAS treatment technology pilot testing completed for two water supply wells located in the Montebello Forebay.
- Reported the results of a two-year perfluorinated compound groundwater monitoring study in our annual Regional Groundwater Monitoring Report in March 2021.
- Groundwater modeling support for multiple planning projects being considered where the results will help inform stakeholders on how best to balance planned increased production with additional replenishment via inland injection wells and/or existing seawater barriers located within the Central Basin and West Coast Basin.
- Received a grant from the U.S. Geological Survey to join the National Groundwater Monitoring Network. Grant funded activities included financial assistance to upload data, repair several deteriorating well vaults, conduct slug testing in key monitoring well screens to determine aquifer parameters, and install a deep, nested groundwater monitoring well in the City of Montebello.

## ENGINEERING DEPARTMENT



- Completed Construction of Albert Robles Center for Water Recycling and Environmental Learning resulting in over 10,000 AFY of advanced treated recycled water to the Montebello Forebay.
- Transitioned operations at the Leo J. Vander Lans Advanced Water Treatment Facility to PERC Water Corporation.
- Performed O&M and Capital projects to allow LVL AWTF to reliably deliver 5 million gallons of water per day to the Alamitos Barrier Project.
- Completed Feedwater quality investigation and Pilot testing to better understand performance issues at the Goldsworthy Desalter.
- Managed ten Safe Drinking Water Disadvantaged Community Program projects at various stages of funding pursuits and project deliveries.

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## HUMAN RESOURCES DEPARTMENT

- Developed procedures to ensure compliance with local and state public health officials and implementation of COVID-19 Workforce Transition Plan. Maintained seamless operations throughout the COVID-19 pandemic.
- Implementation of new performance management evaluation form and process for staff.
- Increased communications with staff using regular staff meetings and the WRD Intranet Portal.
- Coordinated with the Los Angeles County Registrar's office for two Board election seats in 2020 General Election.
- Streamlined the Agenda Management process, including access to agendas on a web browser.
- Expanded District's internship program across technical departments.
- Completion of two comprehensive classification and compensation studies.

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## FINANCE DEPARTMENT

- Maintained AA+ rating from Fitch Ratings on the District's 2018 Replenishment Assessment Revenue Bonds reflecting the District's strong financial profile with strong revenue defensibility and low operating risks.
- Received Distinguished Budget Presentation Award from the Government Finance Officers Association for the Fiscal Year 2021 budget.
- Received Certificate of Achievement for Excellence in Financial Reporting for the Fiscal Year 2020, the highest form of recognition in governmental accounting and financial reporting.

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## DATA AND TECHNOLOGY SERVICES DEPARTMENT



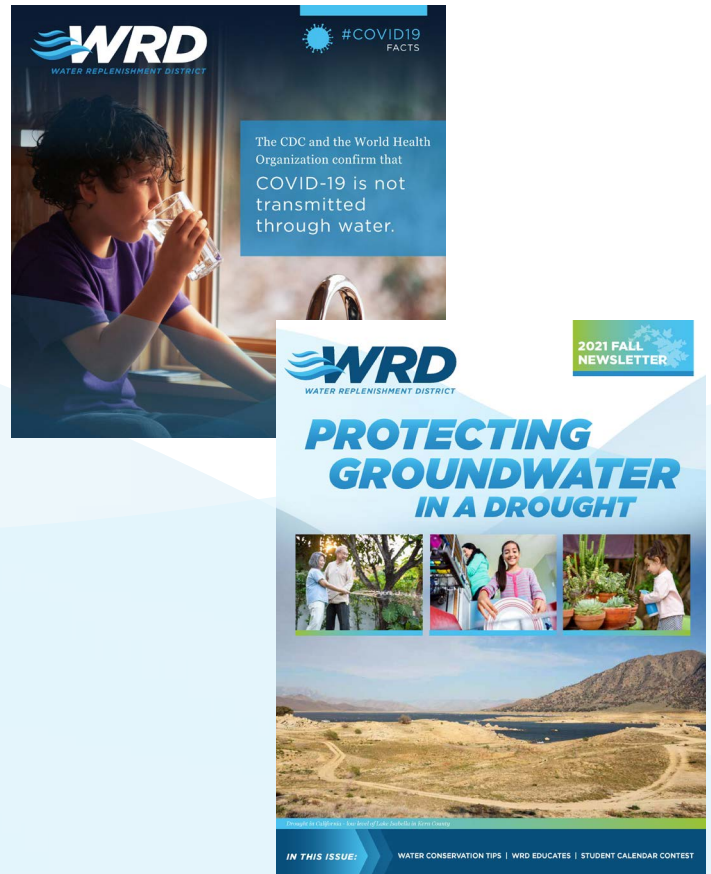
- Implementation of a Computerized Maintenance Management System (CMMS) at Leo J. Vander Lans and the Albert Robles Center.
- Enhancements on network security and our Virtual Private Network (VPN) enabling our workforce to securely work from home while accessing internal resources.
- Launch of the Pumper Portal to collect groundwater production data from pumpers.
- Launch of WRD Hydrographs to the public to make access to water level data and graphs readily available.
- Launch of an updated Water Rights Calculator (version 2) adding several new dimensions.
- Launch of the WRD Agendas web app, enhancing our ability to quickly distribute public meeting information.

## WATER RESOURCES DEPARTMENT



- Renegotiated and executed a new water purchase agreement with Long Beach Water Department for the recycled water supply to Leo J. Vander Lans Facility.
- Executed a Memorandum of Understanding with the Los Angeles County Department of Public Works to initiate the development of a Joint Power Authority (JPA) for cooperative operations of replenishment and resiliency facilities.
- Applied for and received a Title XVI authorization and \$4.9M for the Regional Brackish Water Reclamation Program.
- Developed and implemented a PFAS Remediation Program to provide over \$34 million of funding for the pumping community for remediation of PFAS.

## EXTERNAL AFFAIRS DEPARTMENT



- Developed a comprehensive virtual field trip program for Kindergarten through 12th-grade students at the Albert Robles Center for Water Recycling and Environmental Learning.
- Executed a successful COVID-19 outreach program informing the public that the virus has no effects on their water which had over 2.5 million views.
- Developed four newsletters mailed to half a million residents throughout the service area.
- Created new Eco-Gardener Classes and hosted 30 in-person and virtual classes.
- Advocated for increased funding for PFAS remediation at the State and Federal levels.



# WRD STRATEGIC PRIORITIES FOR 2022-2023

WRD leadership identified key Strategic Priorities which describe the resources put into place to achieve our mission and accomplish our strategic goals.

The Strategic Priorities are outlined and described below:



**HUMAN RESOURCES:** One of WRD's greatest assets is its people. WRD will ensure the recruitment and retention of a talented, highly qualified and diverse workforce to drive productivity and innovation within WRD. WRD's human resources include Executive Management, leadership and support staff, and interns.



**CAPITAL PROGRAM DEVELOPMENT:** Ensuring WRD's services continue to bring significant value to the region is our priority. This includes efficiently managing and maintaining WRD's infrastructure and investing in system improvements to continue the fulfillment of our mission. Capital Program Developments include water treatment facilities, wellhead treatment programs, replenishment monitoring infrastructure, groundwater monitoring well equipment, and engineering and hydrogeology expertise.



**FINANCIAL STABILITY:** WRD will maintain strong financial standing through accurate budgeting and pursuing appropriate low-cost funding sources. Financial stability will be maintained by planning wisely for our financial future, enhancing our revenue stability, ensuring reasonable costs, and continuous improvement of financial transparency. WRD's financial resources include funds obtained through the Replenishment Assessment, revenues from water sales, and outside funding from revenue bonds and public or private grant and loan programs.



**GROUNDWATER TECHNICAL EXPERTISE:** WRD was established as the groundwater management agency responsible for maintaining the quality and quantity of groundwater in the region. To continue our mission, WRD relies on technical resources including an extensive asset management system, databases of groundwater monitoring and usage data, hydrogeological data, and spatial data, and historical WRD technical, operations, and budgeting reports.



**LONG TERM WATER RESOURCE PLANNING:** Given the impacts of climate change and issues that affect access to water resources, WRD must continue planning for long-term water shortages and accessibility. Planning resources include inter-departmental technical expertise, historical data and predictive modeling, and well-established relationships with local, state, and federal stakeholders.



**STAKEHOLDER AND COMMUNITY ENGAGEMENT:** WRD has built a reputation of being a reliable and innovative public agency and has been able to build support for large-scale projects through its stakeholder and community engagement. The district will continue this path utilizing external affairs operations including inter-agency coordination, legislative and governmental efforts, community education programs and grants advocacy.

# WRD'S VISION FOR THE FUTURE: WIN 4 ALL



WRD successfully completed the Water Independence (WIN) Now Program including the Albert Robles Center Advanced Water Treatment Facility which realized a long-term goal of eliminating imported water use for groundwater replenishment. The district is continually adapting this program to deal with the new normal of water shortages caused by climate change, increased conservation, and drought. The district is focused on new efforts to develop local supplies of water and regional sustainability.

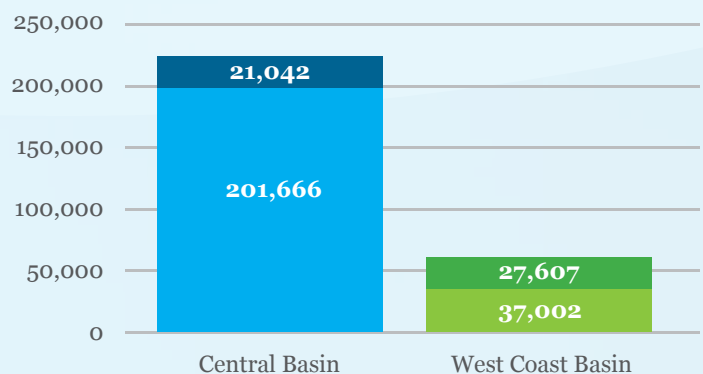
WRD's new effort- WIN 4 ALL aims to further offset the region's imported water use by working with regional partners such as the Los Angeles County Sanitation Districts, Metropolitan Water District, Los Angeles Department of Water and Power, Los Angeles Bureau of Sanitation, West Basin Municipal Water District, and Central Basin Municipal Water District to secure locally sustainable groundwater supplies for the greater Los Angeles Basin. Key components of WIN 4 ALL include expanded recycled water sources and increased stormwater capture. Combined, these goals prioritize local supply and maximize the use of available groundwater storage capacity in our groundwater aquifers.

As droughts intensify in our state, it is important that we invest in water infrastructure projects that will ease the strain on our state's water supply and offset the demand for drought-sensitive surface water.

WRD's Regional Brackish Water Reclamation Program (RBWRP) is a major groundwater desalination project that will treat up to 20 million gallons of water a day. This multi-faceted program includes the installation of groundwater monitoring wells, extraction wells, implementation of advanced desalination technologies, and injection wells to replenish the West Coast Basin. The new source of drinking water may be used in the cities of Torrance, Manhattan Beach, Lomita, cities served by the Golden State Water Company, California Water Service, and the Los Angeles Department of Water and Power.

The real key to a sustainable drought-proof future lies under our feet. Groundwater aquifers are immense natural reserves, currently with empty storage space that can hold nearly a year's water supply for WRD's service area of four million people, located in southern Los Angeles County. The RBWRP will produce water that may be used to replenish groundwater basins and offset the demand for drought-sensitive and unsustainable imported surface water. Water used for the RBWRP will be derived from local sources and help to build a more drought resilient future.

## 4-YEAR AVERAGE PUMPING RIGHTS USED & LOST



# REGIONAL BRACKISH WATER RECLAMATION PROGRAM

## A COLLABORATIVE EFFORT TO REMEDIATE A BRACKISH GROUNDWATER PLUME IN THE WEST COAST BASIN



WRD was established in 1959 by a vote of the people after groundwater was contaminated due to unregulated over pumping of the basins. During the 1940s and 1950s, modernization proved to be a boon for business, but it had unintended consequences for groundwater management.

The construction of homes and high rises on undeveloped land changed the landscape of Los Angeles County. Streams and riverbeds that previously served as conduits to carry rainfall into basins were paved over. The resulting runoff made its way to the ocean rather than into groundwater basins. Consequently, changes in groundwater pressure enabled seawater to migrate into the basins, an ecological process called seawater intrusion. This made some groundwater water too salty to drink which is called brackish water. After seawater barrier injection wells were installed to create an artificial pressure barrier that prevents seawater intrusion, the brackish plume became trapped.

The brackish plume is approximately 600,000-acre feet and is trapped under the South Bay in Los Angeles County. The plume extends to the Gage, Silverado, Lynwood, and Lower San Pedro aquifers. To help visualize the scale of this, one acre foot is equivalent to one football field covered in water. This means the plume is large enough to cover 600,000 football fields in one foot of salty water.

If treated, the brackish plume can be used as a supply of drinking water. When removed from the aquifer, it also leaves space available to store drinking water for future use. With 95% of the Western United States experiencing drought and decreasing availability of water from the Colorado River and Bay Delta, every drop of treated water can help ease the strain on California's water supplies.

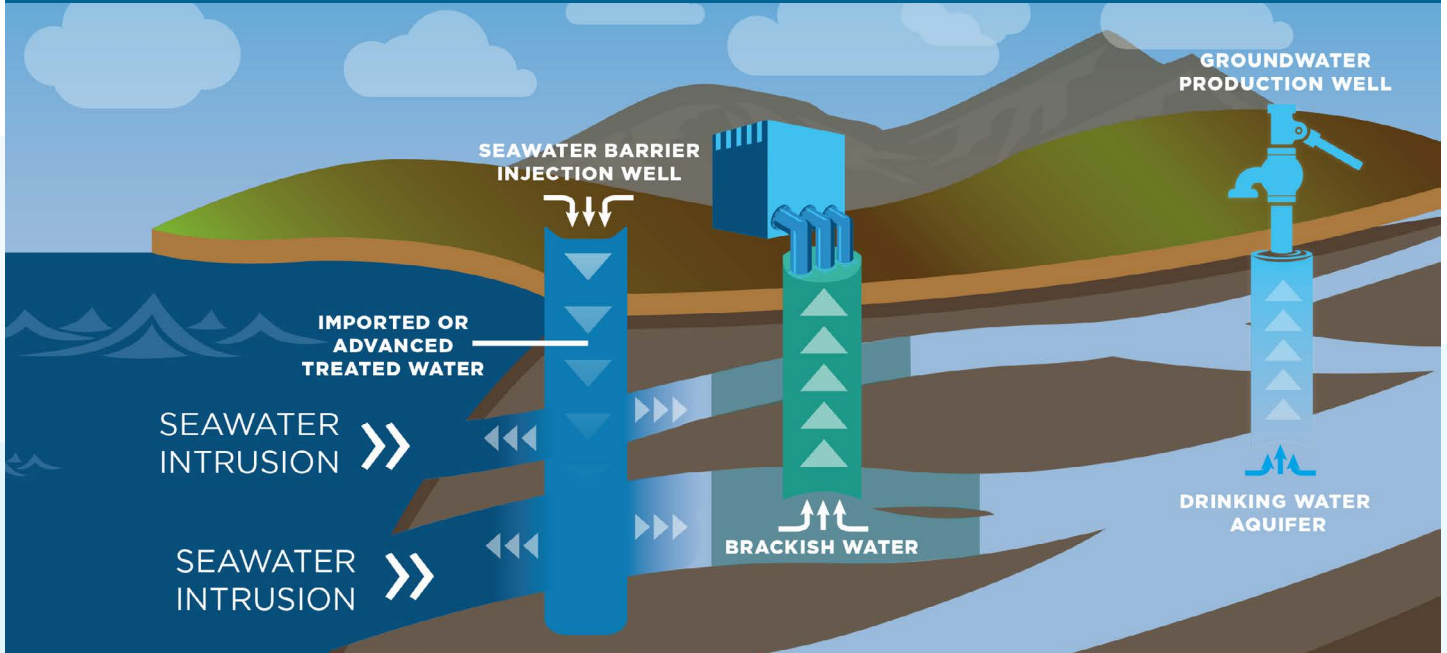
### PROPOSED SOLUTION: WRD'S REGIONAL BRACKISH WATER RECLAMATION PROGRAM

The objective of WRD's Regional Brackish Water Reclamation Program (RBWRP) is to treat brackish water, and store drinking water in available empty aquifers for future use. Specifically, the program will treat up to 55-acre feet (20 million gallons) of water a day. The program will include the installation of:

- Groundwater monitoring wells to better define the brackish plume geometry and track long-term trends
- Groundwater extraction wells to remove brackish water from the aquifers
- Microfiltration and reverse osmosis technologies to treat brackish water
- Injection wells to store recycled water, to replenish the basin and balance the increased pumping associated with the RBWRP

## PROGRAM OVERVIEW

*The RBWRP would build on the success of a groundwater desalter the district is currently operating in the City of Torrance. Commissioned in 2001 and expanded in 2018, the Goldsworthy Desalter treats 5 million gallons of brackish groundwater per day. This is enough to meet the water needs of 25 percent of people in the City of Torrance.*



- Enables pumpers to utilize unused pumping rights
- Provides a new, locally sustainable potable water supply
- Program replenishment provides a beneficial use of available recycled water sources
- Remediation enables the use of available groundwater storage space

## FEASIBILITY STUDY COMPLETED BY WRD & 7 STAKEHOLDER AGENCIES



Service Layer Credits: Sources: Esri, DeLorme, USGS, NPS  
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap  
contributors, and the GIS user community

ROSECRA

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El Segundo

Los Angeles  
Air Force  
Base

Hawthorne

Manhattan Beach

Lawndale

Hermosa Beach

Redondo Beach

Torrance

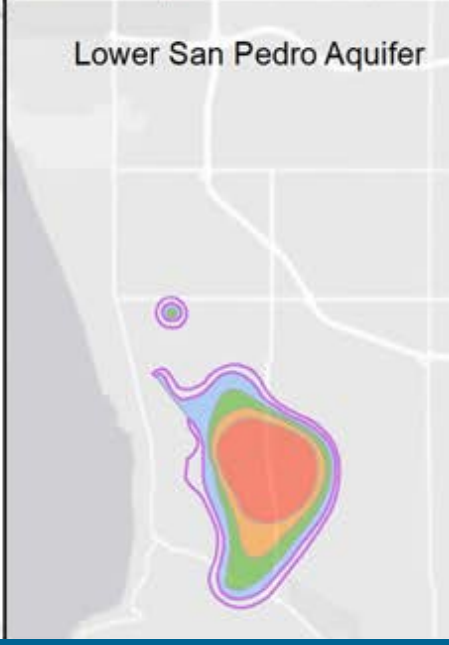
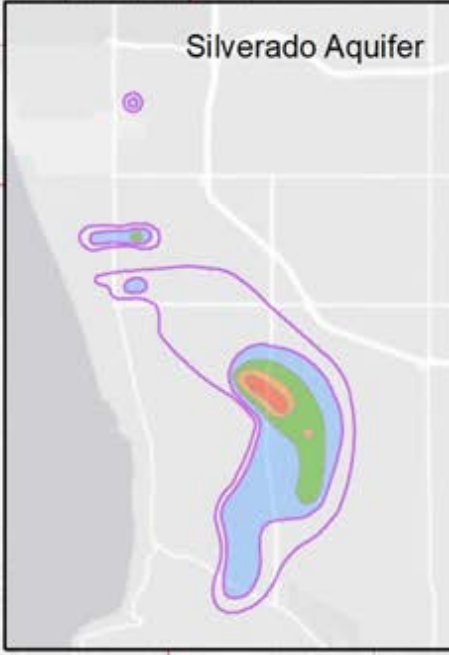
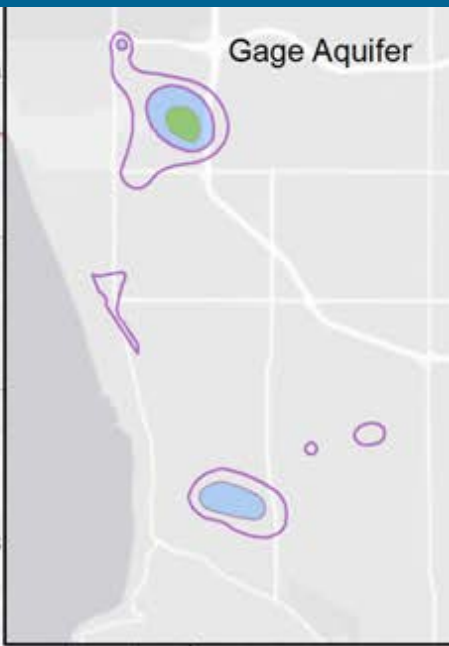
Palos Verdes Estates

91

213

107


1





**Legend**


 West Coast Basin Barrier


**Chloride Concentration**

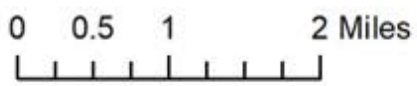
 Plume Boundary > 250 ppm

 500 - 1,000 ppm

 1,000 - 3,000 ppm

 3,000 - 5,000 ppm

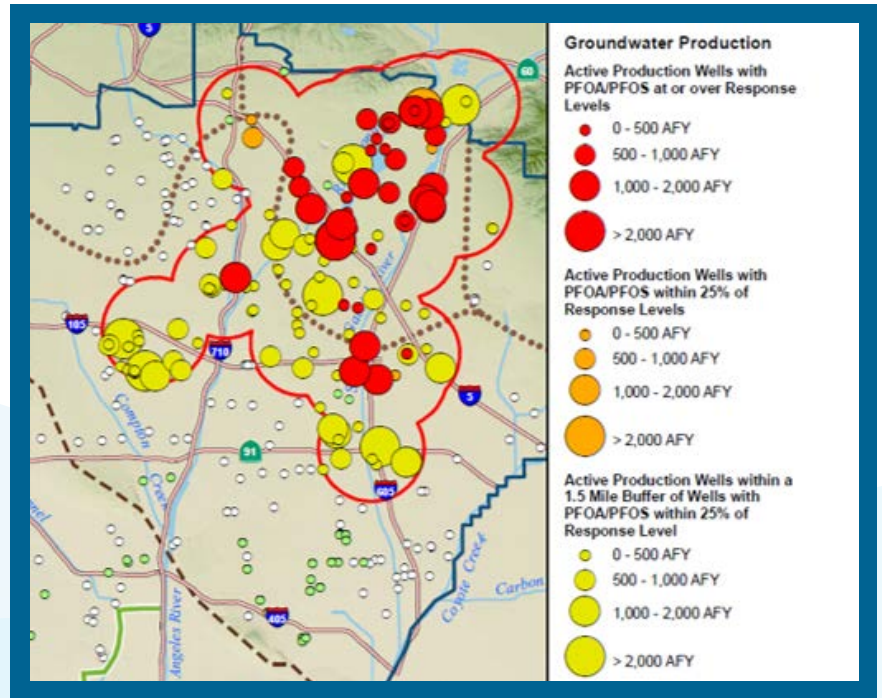
 > 5,000 ppm



# PFAS REMEDIATION PROGRAM

WRD is at the forefront of assisting with remediation of per- and polyfluoroalkyl substances (PFAS) affected groundwater sources. PFAS are bioaccumulatory; these substances can build up in the human body and environment. The Environmental Protection Agency (EPA) states exposure to unsafe levels of certain PFAS substances may result in adverse health effects.

On February 6, 2021, the California Department of Drinking Water announced the response level (RL) for two of the most commonly used PFAS: 10 parts per trillion for PFOA and 40 parts per trillion for PFOS based on a running four-quarter average.



There are over 34 wells with PFAS levels above the RL in WRD’s service area, and there are 13 different water purveyors that operate these PFAS-affected wells. Water purveyors with PFAS-affected wells above the RL must notify the public about the well or move the well out of use.

Some water purveyors have turned off their wells due to PFAS levels above the RL. These purveyors would be unable to bring the well back online without the PFAS Remediation Program. The threat of well closure is especially critical in low-income communities, where lost production can significantly increase the cost of tap water.



WRD’s approach to water remediation is to act quickly and treat wells affected by contaminants before it spreads. The objective of WRD’s PFAS Remediation Program is to treat PFAS-affected wells. The Program is a regional water treatment program that offers financial and technical support to water purveyors seeking to treat PFAS-affected wells.

PFAS are present in many everyday products including shampoo, stain resistant products, cookware, and other consumer items. Though we are exposed to small amounts of PFAS through day-to-day products higher concentrations of PFAS in groundwater can be associated with industrial-scale sources.

The PFAS Remediation Program provides the institutional support water purveyors need to treat PFAS-affected wells and maintain an uninterrupted supply of water. Support is currently offered to water purveyors with wells that exhibit PFAS levels above the response level.

The PFAS Remediation Program offers clear benefits to the community. The program:

- Supports water purveyors in extracting and treating groundwater contaminated by PFAS
- Helps ensure an uninterrupted supply of groundwater
- Protects groundwater basins from further harm that could arise from contaminant migration
- Preserves groundwater for four million people and reduces community exposure to PFAS

WRD's proven strategy to ensure uninterrupted access to high-quality groundwater is to remediate wells affected by contaminants before it spreads. The benefit of the PFAS Remediation Program is removal of contaminants from the water and reducing public exposure to PFAS. It also ensures an uninterrupted supply of high-quality groundwater at affordable rates.

The greatest benefit of the PFAS Remediation Program is that prevents the spread of PFAS throughout WRD's service area. Some immediate benefits of the program include:



#1

**PREVENTS POTENTIAL SPIKE IN REPLENISHMENT ASSESSMENT (RA):** Water purveyors must pay a “replenishment assessment” (RA) to access groundwater. If all water purveyors affected by PFAS stopped pumping immediately, financial projections show that the RA could increase by 15%. The PFAS Remediation Program helps to maintain stable RA fees for water purveyors.

#2

**LONG-TERM COST SAVINGS:** Groundwater extraction, plus the annual cost of PFAS treatment operations and maintenance, is approximately 50% less than the local cost of imported water.

#3

**BRINGING WELLS ONLINE:** Some water purveyors had to shut down wells due to PFAS contamination. These purveyors would be unable to bring the well back online without support from WRD's PFAS Remediation Program.

#4

**CONTINUED ACCESS TO GROUNDWATER:** Some water purveyors do not have the required piping to access imported water. The only viable option these purveyors have is to ensure their customers have continued access to water is to remediate PFAS-affected wells. This option is only made possible through WRD's PFAS Remediation program.

# PROJECTS & PROGRAMS

## REGIONAL BRACKISH WATER RECLAMATION PROGRAM

Within the West Coast Basin, a significant plume (approximately 600,000 acre-feet) of brackish groundwater containing high Total Dissolved Solids (TDS) has been trapped due to seawater intrusion and the implementation of the West Coast Seawater Intrusion Barrier. WRD began the Regional Brackish Water Reclamation Program to evaluate the feasibility of remediating a portion of the high TDS plume, working with six additional stakeholders who pump and wholesale potable water within the basin. The Feasibility Study was completed in 2021. The study evaluated various siting options, treatment technologies, project economics, and conveyance of treated water to stakeholders in the West Coast Basin. WRD is currently in the process of hiring a consultant to help better define the plume geometry and will be conducting a pilot test to evaluate various blends of site-specific water that will be used to feed a new treatment facility and the existing Robert W. Goldsworthy Desalter.

## WELL CONSTRUCTION & REHABILITATION LOAN PROGRAM

The Well Construction and Rehabilitation Loan Program is designed to allow pumpers to utilize their unused pumping rights through a loan program for new well construction or existing well rehab. The program stipulates that pumpers must increase their 5-year extraction average by 10% to receive funding. WRD released the first program application in the summer of 2018 and received four (4) applications totaling over \$10 million in requests. Two projects have since been selected for funding; Vernon and Signal Hill. The City of Vernon has completed their project and they are repaying the loan. The City of Signal Hill is scheduled to complete its project in 2022.

## CONTAMINATED SITES INVESTIGATIONS & PERCHLORATE REMEDIATION PROJECT



Many potential groundwater contamination sources exist within the District boundaries due to a large and diverse industrial and commercial presence. WRD established its Groundwater Contamination Prevention Program to minimize or eliminate threats to drinking water aquifers. One project within this program is the Perchlorate Remediation Project in the City of Vernon. WRD received ~\$10M in grant funds from the State Water Resources Control Board and is currently building a perchlorate treatment system with operations anticipated to commence in 2022.

## LOS ANGELES BASIN JOINT MASTER PLAN

WRD and the Los Angeles Department of Water and Power (LADWP) are working collaboratively to investigate potential future opportunities for sustainable replenishment and extraction and replenishment of groundwater from the West Coast and Central groundwater basins, utilizing new local water sources. LADWP has access to flows from the Hyperion Water Reclamation Plant as a potential source of replenishment water (supply equaling ~200 million gallons per day) and shares WRD's goal of increased local sustainability through the utilization of all available recycled water in the Los Angeles Basin and water resiliency. The two agencies are currently working together to complete a Joint Los Angeles Basin Replenishment and Extraction Master Plan that will develop possible project alternatives that would utilize local water supplies and provide replenishment and drinking water resiliency for the region.



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## SAFE DRINKING WATER PROGRAM & DISADVANTAGED COMMUNITIES OUTREACH ASSISTANCE PROGRAM



WRD's Safe Drinking Water Program (SDWP) promotes the cleanup of groundwater resources through the installation of wellhead treatment facilities at existing production wells, working in collaboration with well owners. The facilities remove contaminants from the underground supply and deliver the extracted water for potable purposes. A total of 16 facilities have been completed and are online and one facility has successfully completed removal of the contamination and no longer needs to treat. The Safe Drinking Water Program also includes the Disadvantaged Communities (DAC) Outreach Assistance Program, which will aid water systems in Disadvantaged areas with applying for State funding. There are currently 11 participants in the DAC Outreach Assistance Program. There are several projects in various stages of implementation and new candidates for participation are under evaluation. Currently, there are three projects under construction and one project in operation.

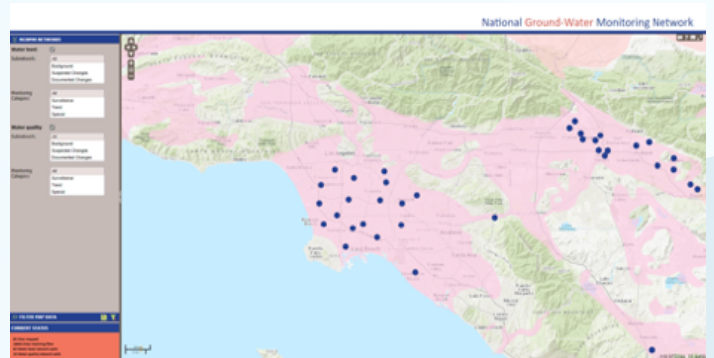
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## REGIONAL GROUNDWATER MONITORING PROGRAM

The Regional Groundwater Monitoring Program utilizes a network of over 345 WRD and USGS-installed monitoring wells at 62 locations throughout the District, supplemented by data from groundwater production wells operated by the water purveyors. The information generated by this program is stored in the District's GIS and provides the basis to better understand the dynamic groundwater system in the Central Basin and West Coast Basin. WRD hydrogeologists and engineers, provide the in-house capability to collect, analyze and report on new and historical groundwater data.

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## NATIONAL GROUNDWATER MONITORING NETWORK



WRD received a grant to join a national groundwater monitoring program developed and maintained by the United States Geological Survey (USGS). The overall goal of the program is to develop a nationwide, long-term groundwater monitoring framework that could provide information necessary for the planning, management, and development of groundwater resources to meet current and future water needs, and ecosystem requirements with a primary focus on the nation's principal aquifers as defined by the USGS. Grant-funded activities include data submittals, well vault repairs, slug testing in key monitoring well screens to determine aquifer parameters, and installation of deep, nested groundwater monitoring wells in the City of Montebello.

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## WELL DESTRUCTION PROGRAM

WRD received a well destruction grant from the State Water Resource Control Board. The goal of the well destruction program is to destroy five inactive water supply wells and prevent contaminants from potentially impacting the drinking water aquifers in the Central Basin. The work is anticipated to be completed by 2023.

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## ENERGY MANAGEMENT PLAN

WRD has taken the initiative to develop a strategic approach to identifying and minimizing the District's Greenhouse Gas (GHG) footprint. This effort will involve identifying all WRD's existing electrical demands and potential optimization efforts.

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## ASSET MANAGEMENT PROGRAM

WRD has initiated the development of an Asset Management (AM) Program to ensure that District assets are managed and maintained properly and provide optimal usage over their lifetime. The AM Plan outlines a priority list of recommended actions and projects that fall within the categories of planning, core service delivery, or performance management. One major accomplishment thus far is the implementation of a Computerized Maintenance Management System (CMMS) that will help WRD predict and mitigate impacts to treatment costs by improving inventory management, scheduling predictive maintenance that lowers overall O&M costs, and increasing equipment lifetime through proactive management. CMMS implementation has already been completed at the Leo J. Vander Lans AWTF. Condition Assessments of the facilities will also be performed to populate the CMMS system and develop lifecycle costs for Rehabilitation and Replacement (R&R) of assets and equipment.

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## OUTREACH & EDUCATION PROGRAMS



Groundwater provides nearly half of the drinking water supply to the 4 million residents within the WRD service area. Unfortunately, due to the “unseen” nature of the resource, many of these residents do not know about the occurrence of groundwater, the source of other drinking water supplies, or the need for local conservation. WRD's outreach and education programs are multi-faceted and focus on groundwater resource education for all knowledge levels including elected officials, industry professionals, regulators, teachers and students. The program involves regular presentations and tours by District staff and has won several awards from various water industry associations.

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## ALBERT ROBLES CENTER ADVANCED WATER TREATMENT FACILITY



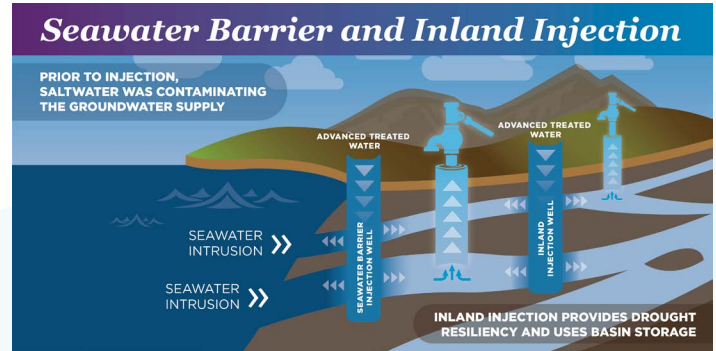
The Albert Robles Center (ARC) has eliminated the district's need to import water for replenishment by providing 10,000 acre-ft per year of advanced treated water used for replenishment at the Montebello Forebay Spreading Grounds. In its first full year of operations, the ARC treatment facility exceeded its production goal of producing 10,000 acre-feet (AF) of water. In 2021, the treatment plant is again poised to achieve 10,000 (AF) and has focused on optimization efforts to improve efficiencies and reduce the cost of producing advanced treated recycled water.

## LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY SUPPLEMENTAL SOURCE WATER PROJECT



WRD has an agreement with the Long Beach Water Department (LBWD) for 6,500 AFY (at an average of 5.8 mgd) of tertiary effluent from the Long Beach Water Reclamation Plant. The facility has a total capacity of 8.0 mgd. WRD has a currently unused allocation of 10,000 acre-feet per year at the Los Coyotes Water Reclamation Plant (LCWRP). Connecting the Leo J. Vander Lans AWTF to the LCWRP through either a direct connection or interconnection will allow WRD to utilize the unused allocation as an alternative source of water for the AWTF, providing operational flexibility to the District. WRD has initiated planning studies to determine the preferred alternative for this connection.

## LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY INJECTION WELLS



WRD is currently developing an inland injection well onsite at the LVL AWTF to maximize the injection of recycled water when the Alamitos Barrier Project exceeds its demand. The onsite injection well will allow for injection up to 2.0 mgd into the Central Basin when LVLAWTF product flow cannot be delivered to the ABP. With expanded operational efficiency at Leo J. Vander Lans following the supplemental source water project, WRD will also consider additional inland injection wells offsite of LVL AWTF to maximize replenishment or groundwater storage opportunities in the Central Basin.

## LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY SCADA UPGRADES

The LVL AWTF was originally constructed in 2003 at three (3) mgd capacity and was expanded in 2012 to eight (8) MGD. The original Supervisory Control and Data Acquisition (SCADA) system has become obsolete and increasingly causes negative impacts on the efficiency and performance of the facility. WRD intends to embark on an update of the SCADA system at LVL AWTF to improve the efficiency and reliability of the facility. The intent of the SCADA upgrade project is to address several key issues related to the existing system and its functionality, replacing obsolete hardware and improving communications and programming between the old and newer treatment systems.



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