

Irvine Ranch Water District. An Overview.

IRWD. WELL GROUNDED IN WATER RELIABILITY.



February 2017

The Irvine Ranch Water District provides high-quality drinking water, reliable sewage collection and treatment, ground-breaking recycled water programs, and environmentally-sound urban runoff treatment to approximately 390,000 residents in Central Orange County, California.

IRWD encompasses approximately 181 square miles extending from the Pacific Coast to the foothills and serves the City of Irvine and portions of Costa Mesa, Lake Forest, Newport Beach, Orange, Tustin and unincorporated areas of Orange County.

Established in 1961 as an independent special district organized under the California Water District Code, IRWD is governed by a five-member, publicly elected Board of Directors responsible for the District's policies and decision making. Day-to-day operations are supervised by the General Manager and District staff.

Water Supply Portfolio

IRWD has a diverse water supply which ensures reliable supplies during times of drought, regulatory constraints and emergencies, and helps to keep rates low. The IRWD water supply comes from local groundwater, recycled water, imported water, and local surface water.

Groundwater

Approximately 54 percent of the IRWD water supply comes from local groundwater wells in the Orange County Groundwater Basin. IRWD began developing local water supplies in 1979 to reduce dependence on costly imported water and now produces drinking water from 27 groundwater wells throughout the service area.

Imported Water

Imported water from the Metropolitan Water District of Southern California makes up approximately 15 percent of the District's supply. Drinking water imported to IRWD comes from the

Sacramento-San Joaquin Delta in Northern California through the State Water Project and from the Colorado River through the Colorado River Aqueduct.

Recycled Water

IRWD meets roughly 28 percent of the service area's water demands with recycled water. Every gallon of recycled water used results in a gallon of drinking water that can be saved for potable users. Using recycled water extends drinking water supplies and reduces reliance on costly imported water, helping to improve water supply reliability.



The RightScape Demonstration Garden in front of IRWD's Sand Canyon building displays attractive and easy-to-identify drought-tolerant plants.

IRWD's customers use recycled water for:

- Landscape irrigation in parks, golf courses, parkways, medians, school yards, freeway landscaping, homeowner's association common areas and large residential lots
- Irrigating agricultural sites
- Industrial applications such as cooling towers, composting and a concrete batch plant
- Toilet and urinal flushing in more than 60 dual-plumbed buildings, including commercial sites and some schools.

On average we deliver about 23 million gallons of recycled water per day to more than 5,500 customers through more than 525 miles of pipelines. The dual-distribution system, which keeps recycled water completely separate from drinking water, uses easily recognized purple pipe to identify recycled water infrastructure. IRWD pioneered the use of purple piping which has become the international symbol for recycled water.

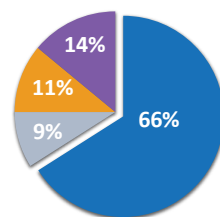
Water Banking

Water banking - storing water in wet years for use during dry years and emergencies - is an important tool for augmenting imported water supplies and ensuring reliability.

By capturing water when it is available and storing it in groundwater basins to supplement supplies in dry years, the IRWD water banking program safeguards customers from imported water supply shortages. The banking program is designed to provide enough water to meet approximately 15 percent of IRWD customers' needs during critically dry years.

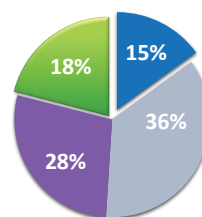
IRWD Water Supply Portfolio. Then and Now.

1990



- Imported Water
- Clear Groundwater
- Local Surface Water
- Recycled Water

2017



- Imported Water
- Clear Groundwater
- Recycled Water
- Treated Groundwater

Water Resource Stewardship.

Water Quality

IRWD is committed to providing customers with safe, high-quality and reliable drinking water. The District's Water Quality staff continuously monitors water supplies, conducting more than 250,000 laboratory tests each year from water taken from more than 100 sample points throughout the service area. IRWD's state-of-the-art Water Quality Laboratory is one of the best equipped facilities in Southern California.



Irvine Ranch
WATER DISTRICT

IRWD Facts and Figures

- Size of District: 181 square miles (115,531 acres)
- Population served: 390,000
- Employees: 370

Customer Connections (June 2015)

Drinking Water

- Residential: 92,121
- Commercial: 4,972
- Industrial: 837
- Public Authority: 282
- Construction & Temporary: 206
- Fire Protection: 4,658
- Landscape Irrigation: 1,803
- Agricultural: 12

Recycled Water

- Commercial: 54
- Industrial: 2
- Construction: 9
- Landscape Irrigation: 5,175
- Agricultural: 32

Total Connections: 110,163

Amount of Water Delivered

(FY 2016 CAFR)

- Treated (potable): 49,491 AF*
- Untreated (non-potable): 2,100 AF
- Recycled: 26,386 AF

*AF=Acre Feet. One acre-foot of water equals 326,000 gallons and covers one acre of land, one foot deep.

The IRWD Annual Water Quality Report provides customers with water analysis test results and an explanation of how to interpret the information. Contact the District at (949) 453-5300 to request a copy, email info@irwd.com or visit www.irwd.com/water-report.

Water Use Efficiency

Using water efficiently helps extend water supplies in wet and dry years alike. IRWD offers cutting-edge conservation and water use efficiency programs so customers have the tools needed to use water wisely. IRWD also employs a unique budget-based billing structure that rewards customers for conserving water.

RightScope, IRWD's outdoor conservation outreach campaign, is a resource for promoting water efficiency. Saving water not only preserves our precious resources, but also helps our customers save money.

Budget-Based Water Rate Structure

IRWD uses a budget-based conservation rate structure which offers property-specific water budgets and tiered pricing to provide customers with economic incentives for efficient water use.

Customized and equitable water budgets are established for each customer account based on a variety of factors including: type of home or business, irrigated landscape area, daily weather data and number of residents in a home. Customers who use water within their budget purchase water in the lower tiers and enjoy very low water bills. Customers who use water in excess of their budget receive a strong pricing signal indicating inefficient or wasteful use.

IRWD's monthly water rates have two components: a commodity rate set to recapture the variable cost of imported water and local groundwater, and a service charge set to recover the fixed costs of maintaining the water distribution system. This allows IRWD to provide exceptional service while also encouraging efficient water use and providing for rate stability. The monthly water charges for a typical residential customer are among the lowest in Orange County.



IRWD's state-of-the-art Water Quality Lab conducts more than 250,000 laboratory tests each year from water collected at more than 100 sample points throughout the District's service area.



Pumps and pipes for the membrane bioreactor at the expanded Michelson Water Recycling Plant.

Financial Operations

IRWD has built a secure financial standing through careful fiscal stewardship. The District uses a long-range planning approach that is similar to a family who regularly puts money aside over time to pay for the eventual cost of their children's college education.

By anticipating future needs, it's not necessary to dramatically increase customer rates to pay for the new infrastructure (pipes, pumps, reservoirs, etc.) required by the inevitable repair and replacement of these types of facilities as they begin to age.

To ensure equity among customers, IRWD separates the costs of building water and sewer infrastructure from the cost of daily operations and maintenance. Capital infrastructure is financed directly or through general obligation bonds, the costs for which are paid through a combination of property taxes and developer connection fees. Daily operation and maintenance costs



Irvine Residential Rate
(effective July 1, 2016)

Tier	Rate (per ccf*)	Percent of Budget
Low Volume	\$1.21	0 - 40%
Base Rate	\$1.65	41 - 100%
Inefficient	\$4.01	101 - 130%
Wasteful	\$12.01	131+%

*ccf = 100 cubic feet, or approximately 748 gallons

Budget-Based Rate Structure

are funded primarily by customers' monthly water and sewer bills.

IRWD rates and charges are reviewed and set annually by the IRWD Board of Directors.

IRWD Facilities

Offices

- IRWD Sand Canyon Administrative Offices
- IRWD Operations Center

Recycled Water Plants & Storage

- Michelson Water Recycling Plant
- Los Alisos Water Recycling Plant
- Syphon Reservoir Recycled Water Storage Project - will increase storage capacity from current 500 acre-feet to 5,000 acre-feet
- Sixteen total recycled water reservoirs, including Rattlesnake, Sand Canyon, San Joaquin, and Syphon, with a combined 1640 MG* storage capacity

Potable Water Facilities

- The Irvine Desalter Project - treats drinking water in the Irvine subbasin
- Deep Aquifer Treatment System - removes color from local groundwater
- Wells 21 & 22 Rehabilitation, Pipelines and Water Treatment Plant - recovers and treats local impaired groundwater for potable use
- Thirty-six drinking water reservoirs with a combined 150 MG storage capacity
- Dyer Road Well Field - local groundwater

Non-Potable Water Sources

- El Toro Groundwater Remediation Program - provides 1.6 billion gallons of water for irrigation annually
- Irvine Lake - untreated water reservoir

Natural Treatment System (NTS)

- Twenty-seven NTS sites are complete, with 20 more planned
- IRWD San Joaquin Marsh and Campus including the Duck Club, Audubon House, Learning Center, Visitor's Center, Sea & Sage House and Caretaker's Residence

*MG = Million Gallons



Commitment to Sustainable Resources

IRWD is committed to protecting our environment through effective water and resource management. The District has adopted a variety of innovative resource management programs including water use efficiency, recycled water, energy sustainability, urban runoff reduction and treatment, and public education.

San Joaquin Marsh

The IRWD San Joaquin Marsh encompasses more than 300 acres of coastal freshwater wetlands. In addition to providing a valuable open space oasis and wildlife habitat for the community, the working wetlands help naturally clean urban runoff from San Diego Creek, removing up to 70 percent of the nutrients carried in the water, and helping to protect the environmentally sensitive Upper Newport Bay.

The Marsh is open to the public, seven days a week, year-round. Visitors can walk along 12 miles of trails and watch the more than 200 migratory bird species that visit the marsh. The Marsh Campus houses the IRWD Learning Center, the IRWD Visitor's Center, the Duck Club, the Audubon House, the Sea and Sage House and a Caretaker's Residence. The Visitor's Center offers guests a self-guided tour about the history of IRWD as well as the District's water use efficiency, urban runoff and sustainability efforts. Through partnerships with the local Sea and Sage Chapter of the National Audubon Society and the Discovery Science center, a variety of tours and educational programs are offered year-round.

Urban Runoff and Natural Treatment Programs

Modeled after the San Joaquin Marsh, the IRWD Natural Treatment System is a series of smaller, man-made wetlands located throughout the IRWD service area. These wetlands naturally remove contaminants from urban runoff in a cost-effective and environmentally sound manner. Both the Natural Treatment System and the San Joaquin Marsh help IRWD protect the environment through the treatment of dry-weather runoff.

The Natural Treatment System is a true regional collaboration. IRWD partnered with service area cities, the County of Orange, and local developers to build this innovative, cost-effective, environmental project that is now looked to as a model for responsible urban runoff management throughout the state.

Energy Sustainability

The IRWD recycled water and conservation programs have significant energy efficient benefits. Water imported to Southern California requires large amounts of power to move across the state. By reducing imported water use, IRWD has cut greenhouse gas emissions by approximately 20,000 tons annually.

IRWD also boasts a growing solar energy program designed to further reduce the District's carbon footprint. Nearly 700 solar panels on the roof of the IRWD Sand Canyon administrative offices provide more than 20 percent of the total energy needed for the building.

Eight hundred solar panels installed on the roof of the IRWD Zone 3 drinking water reservoir produce more than half of the energy needed to run the facility. Solar energy also helps power the mixers at the IRWD Los Alisos Water Recycling Plant. The District continues to study the feasibility of installing solar energy systems at other IRWD sites.

Customer Resources

IRWD offers a wide array of resources to customers. More information about these resources and much more can be found at www.irwd.com.

Accessing Your Account

Pay Bills Online

Customers can use eBill to conveniently receive and pay bills online or have their bill automatically deducted from their checking account.

Customer Variance

Customers with larger than average families, large landscaped areas, special medical needs, or other property specific needs such as horses or pools may qualify for an allocation variance. Additionally, one-time courtesy adjustments are available in other special circumstances. Variance request forms can be found on www.irwd.com or picked up at our offices.

Water Use Efficiency

Home Water Survey Program:

Customers who are experiencing problems with high water use can request a water use survey. A trained conservation specialist will visit your home, check for leaks, and make recommendations for water savings.

Landscape Workshops

IRWD customers are invited to learn about creating a water-efficient landscape from experts at IRWD landscape workshops, held continuously throughout the year. Register at rightscapenow.com/events.

Outreach and Education

Resident Tours

Anyone who lives or works in the IRWD service area can learn more about the District by attending a Resident Tour hosted by an IRWD Board Member and staff. Tours are held annually and publicized on our website.

Community Programs

IRWD provides a variety of community programs including Landscape and Conservation Workshops, online webinars and videos on many topics, and Resident Tours. Visit the District's website, rightscapenow.com, for more information.

Water Awareness Education

Student water education programs are available to students and teachers from kindergarten through college in any public, private, or home school within the IRWD service area. We are proud to partner with Discovery Science Center to provide high-quality education programming that meets California Science Content standards and reinforces the need to engage in water use efficiency as a life-long behavior.

Speakers Bureau

IRWD experts are available to community organizations, associations and institutions in our service area through the IRWD Speakers' Bureau. Call (949) 453-5500 or email info@irwd.com to schedule a presentation.

IRWD Contact Info:

Phone: (949) 453-5300



E-mail: info@irwd.com

Websites: www.irwd.com and www.RightScapeNow.com

Address: Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618



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Visit IRWD's YouTube
Channel: [IrvineRanchWD](https://www.youtube.com/IrvineRanchWD)

The Sand Canyon Administrative Office, located at 15600 Sand Canyon Ave., Irvine, CA 92618, is open Monday through Friday, 8:00 a.m. to 5:00 p.m.

The IRWD Operations Center, located at 3512 Michelson Drive, Irvine, CA 92612, is open Monday through Thursday from 7:30 a.m. to 4 p.m. and on alternate Fridays from 8 a.m. to 3 p.m.