

HONOLULU BOARD OF WATER SUPPLY

WATER RECYCLING PROGRAM



U S I N G W A T E R W I S E L Y



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The Honouliuli Water Recycling Facility produces 12 million gallons per day of recycled water for irrigation and industrial uses.



Our Limited Water Supply

Oahu's green and lush landscapes belie the fact that our island's current water supplies are limited. Most of the water we now use in our homes and businesses comes from underground aquifers. The process of rain seeping through volcanic rock and soil creates an ultra-pure water source for our community. This source, however, is limited. Other sources, such as water from lakes and streams, while only making up a small percentage of our current water supply, are also finite. As island water use continues to increase, and existing supplies

become more scarce, new water sources must be developed.

Water recycling is one part of the solution. Continuing conservation also plays a role. Improved technology may make seawater desalination, which in the past has been very expensive, a realistic future water supply option. The Honolulu Board of Water Supply is actively working on these and other initiatives to make sure we have enough water for today and for future generations. 💧



Native Hawaiians - Early Water Recyclers

In old Hawaii, conservation and efficient use of our natural resources were the underlying principles of land stewardship. The Hawaiians carefully directed water to needy areas. As the water moved seaward, this system fed the many plantings along the way. A natural filtering system cleansed the water along the path and collected nutrients that fed the plants. Large fishponds received the nutrient-rich water from the uplands, providing the perfect environment for fish.

Native Hawaiians understood water — which gave life to all living things — had to be wisely managed. Those same principles of resource management as practiced by native Hawaiians are at the core of the Board of Water Supply's water recycling program today.

What Is Recycled Water?

Used primarily by large water users such as golf courses and refineries, recycled water is wastewater that has been treated to a level suitable for industrial processing, irrigation and other non-drinking uses. Recycled water is available year round, even in times of drought. It is good for the environment, and it costs less than other new water sources. 💧



Commonly Asked Questions

Is recycled water safe to touch?

Yes. Recycled water is safe to touch, but it is not intended for drinking. In some parts of the United States, it's even used in recreational lakes.

Where else is recycled water used?

Recycled water has been used for more than 40 years on the mainland. Texas, California, Arizona and other dry states depend on recycled water as an important part of their water supplies. Recycled water is also used in Hawaii on the islands of Hawaii, Kauai, Lanai, Maui and Molokai, in addition to Oahu.

Will this affect my water rates?

The Board of Water Supply's investment in the Honouliuli Water Recycling Facility allows the Board of Water Supply to keep water rates affordable for all of its customers, by reducing the need to drill costly new water wells. Equally important, recycled water is a drought-proof and renewable supply of water, and is a safe and smart way to extend the life of our water supply. 💧

It is good for the environment,
and it costs less than
other new water sources.





The Honouliuli Water Recycling Facility



The Honolulu Board of Water Supply's Honouliuli Water Recycling Facility is the largest in Hawaii. This fully automated treatment facility can produce 12 million gallons per day of recycled water. The plant is being paid for through the sale of recycled water to businesses, golf courses and other large water users. There are two grades of recycled water produced at the Honouliuli Water Recycling Facility; one is used for industry and the other for irrigation. The plant is continuously monitored, and all recycled water must meet stringent Department of Health requirements before it can be delivered to customers. 💧

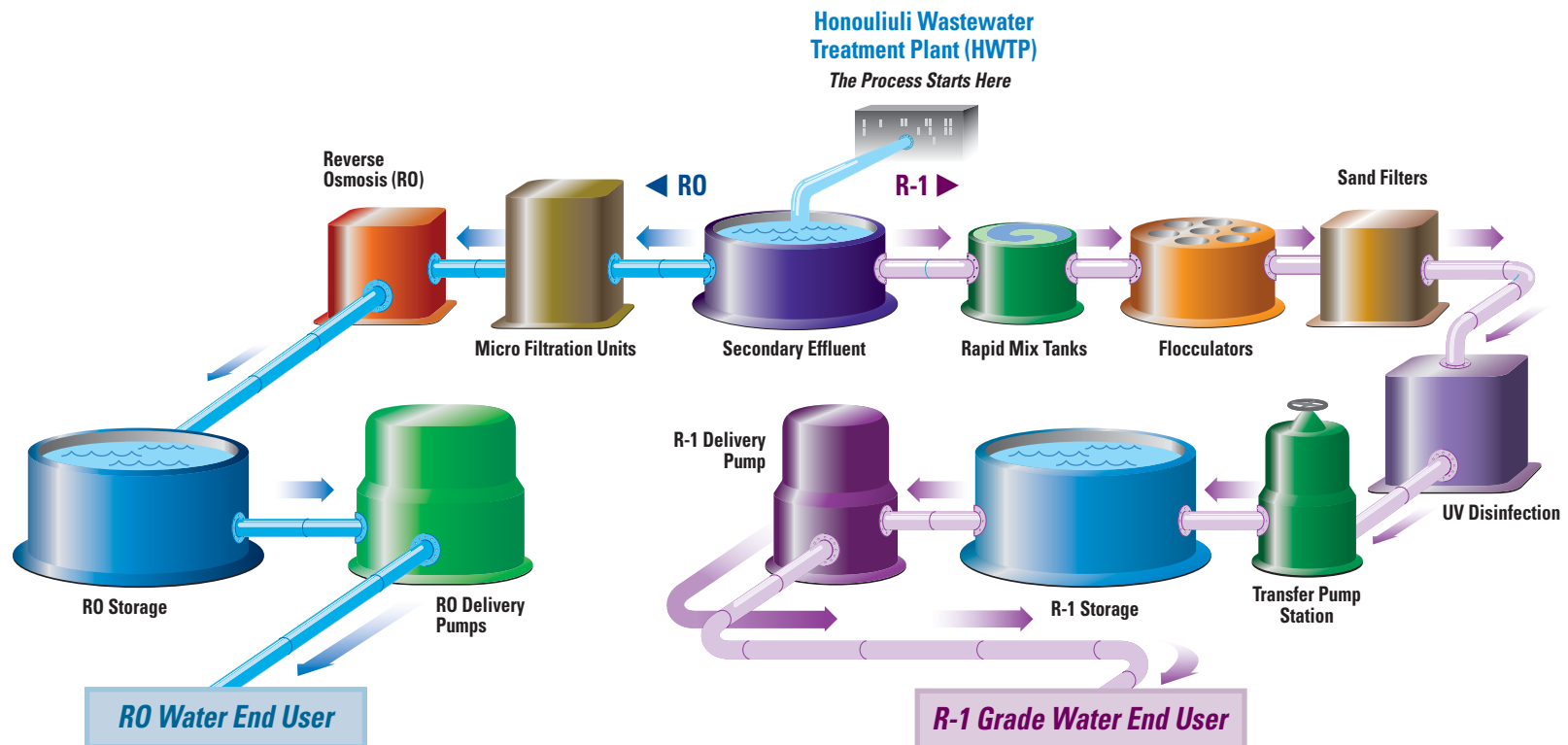
This fully automated treatment facility can produce 12 million gallons per day of recycled water.



The Water Recycling Process

The Board of Water Supply uses state-of-the-art technology to speed up the purification process using a system of filters and a highly effective disinfection process. Once all health and safety standards have been met, the recycled water is delivered to local irrigation and industrial customers.

The water is processed into two grades of recycled water: R-1, which is used for irrigating crops and landscaping, and Reverse Osmosis water (RO), which is used for industrial purposes at refineries and power plants. 💧





Who Uses Recycled Water?

Purple Pipes

Recycled water is delivered to users through a system of pipes separate from the drinking water distribution system. All pipes and fixtures using recycled water are easily identifiable by their purple color.



Recycled water is available for irrigation purposes and industrial uses.

It is safe for human contact, but it is not intended for drinking. It is not available to individual residents.

On Oahu, recycled water is used at:

R-1 Water

Barbers Point Golf Course
City of Kapolei
Coral Creek Golf Course
Ewa Beach Golf Club
Ewa Marina
Ewa Villages Golf Course
Hawaii Prince Golf Club
Hoakalei Golf Course
Honouliuli Wastewater Treatment Plant
Kapolei Golf Course
State Department of Transportation
West Loch Golf Course

RO (Reverse Osmosis) Water

AES Hawaii Inc.
Chevron Hawaii Refinery
Kalaeloa Partners
Tesoro Hawaii Corporation
The Gas Company
Hawaiian Electric Co. Kahe Power Plant

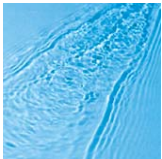


Thanks to the Board of Water Supply's
program, many of Oahu's businesses can use
recycled water — instead of drinking water.

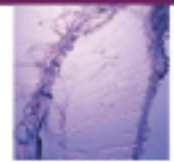
Where Is Recycled Water Available?



Glossary of Terms



- **Effluent** The outflow or discharge of wastewater from a treatment facility.
- **Honouliuli Water Recycling Facility** A 12 million-gallon per day water recycling facility owned by the Honolulu Board of Water Supply. The facility is situated adjacent to the Honouliuli Wastewater Treatment Plant. Recycled water from the facility is used for irrigation, agriculture and industry.
- **Honouliuli Wastewater Treatment Plant** A City and County facility that treats wastewater to a secondary level. Some of the treated wastewater from this facility will undergo additional treatment at the adjacent Honouliuli Water Recycling Facility.
- **MGD** Abbreviation for million-gallons-per-day.
- **Microfiltration** Separation of liquid from suspended and some dissolved materials.
- **Potable Water** Water that is suitable for drinking and meets applicable state and federal drinking water quality standards.
- **Primary Treatment** The first process in wastewater treatment which removes settled or floating solids.
- **R-1 Process** The treatment process by which effluent passes through rapid mix tanks, flocculators, filters, UV disinfection and a transfer pump station for eventual use in landscaping, and on nonfood crops and greenbelts.
- **R-1 Water** Nonpotable water that has been treated to meet Hawaii's Department of Health standards for the highest recycled water level and deemed safe for human contact.
- **RO (Reverse Osmosis)** The process of treating recycled water by forcing water through an ultra-fine membrane, which allows only water to pass through. RO water has been processed with the reverse osmosis system.
- **Recycled Water** Treated wastewater that has undergone additional purification processes so that it can be used for irrigation, landscaping, industrial processing and other non-drinking uses. (Also called reclaimed or reused water.)
- **Secondary Treatment** Second stage of wastewater treatment where bacteria are used to remove organic matter in the wastewater through "biological cleansing."
- **Tertiary Treatment** Third stage of wastewater treatment including filtration and disinfection, which effectively removes up to 99% of impurities and suspended solids.
- **UV Disinfection** The process of disinfecting water by subjecting it to intense ultraviolet (UV) light.
- **Wastewater** Water that has been used for household, commercial or industrial purposes.

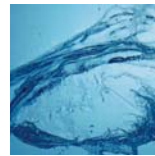
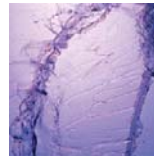
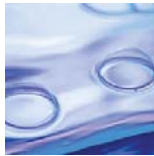


Conservation Counts

While the Board of Water Supply is working to secure additional water sources, conservation remains the most effective and economical way to ensure we have the water we need. For information about the Board of Water Supply's Water Conservation Program, call (808) 748-5041.

Want More Information About Recycled Water?

Board of Water supply representatives are available to answer your questions. Call (808) 748-5083. For general information about the Water Recycling Program and other water issues, visit www.boardofwatersupply.com.



HONOLULU BOARD OF WATER SUPPLY

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About the Board of Water Supply

The Board of Water Supply is the largest municipal water utility in the State of Hawaii and a semi-autonomous agency of the City and County of Honolulu. Its mission is to improve the quality of life in our community by providing world-class water services. With a labor force of more than 580 employees, the department services almost 900,000 people on Oahu and is one of the largest water utilities in the United States.