Water Environment Association of Texas

WHAT IS WATER REUSE?

PROTECT WATER, PROTECT TEXAS.

All water is reused water. In fact, the water in your glass was once in the sap from a tree or the blood of a dinosaur. Water reuse takes water that humans have used in homes and industries and purifies it again to safely drink, cool our spaces, irrigate land, and manufacture goods. Because of the technology available at our fingertips today, we can produce reusable water for a wide range of uses reliably and safely.

Did you know your drinking water comes from the lakes and rivers you see and the water way beneath your feet in the ground, and that the water reuse purification process provides the safest water on the planet?

Water reuse is a safe and sustainable solution to help stretch our limited water supplies and protect drinking water for future generations. By reusing water within our communities, we can preserve natural ecosystems, improve the quality of the aquatic environment, and continue to provide clean water for Texans today and for generations to come.

REGULATORY CONSIDERATIONS

While the EPA manages programs that protect bodies of water and drinking water quality, water reuse is primarily regulated at the state and local level. In Texas, TCEQ administers water reuse permitting which relies on the Texas Administrative Code (TAC), Texas Water Code, and Health and Safety Code to ensure public safety during the design, construction, and operation of a water reuse facility. Local programs, such as Austin's Onsite Water Reuse Ordinance, may provide alternative or streamlined permitting for onsite water reuse systems.

EXAMPLES OF REUSE APPLICATIONS

FUTURE OF REUSE

Texas' 2022 State Water Plan includes an estimate that by 2070, about 15% of all new water supplies will be provided by reuse. To enable this progress, there are a variety of programs in place and in the process of being implemented, which encourage or require reuse. In addition to programs like these, there will be a need to create financing mechanisms that specifically address reuse, and to invest further in broader reuse infrastructure.

FAST FACTS

Fourteen of the state's sixteen Regional Water Planning Groups have cited water reuse as part of their strategy to meet growing demand.

In 2020, water reuse contributed to only 4% of Texas' existing water supply. The 2022 State Water Plan recommends increasing water reuse to about 15% of total supply by 2070, or 1,106,000 acre-feet of water per year.

Texas' population is expected to grow by 73%, and water demand is expected to grow by 18% over the next 50 years.

(Texas Water Development Board, 2022)

1. Texas Water Development Board. (2022). 2022 State Water Plan. https://www.twdb.texas.gov/waterplanning/swp/2022/index.asp

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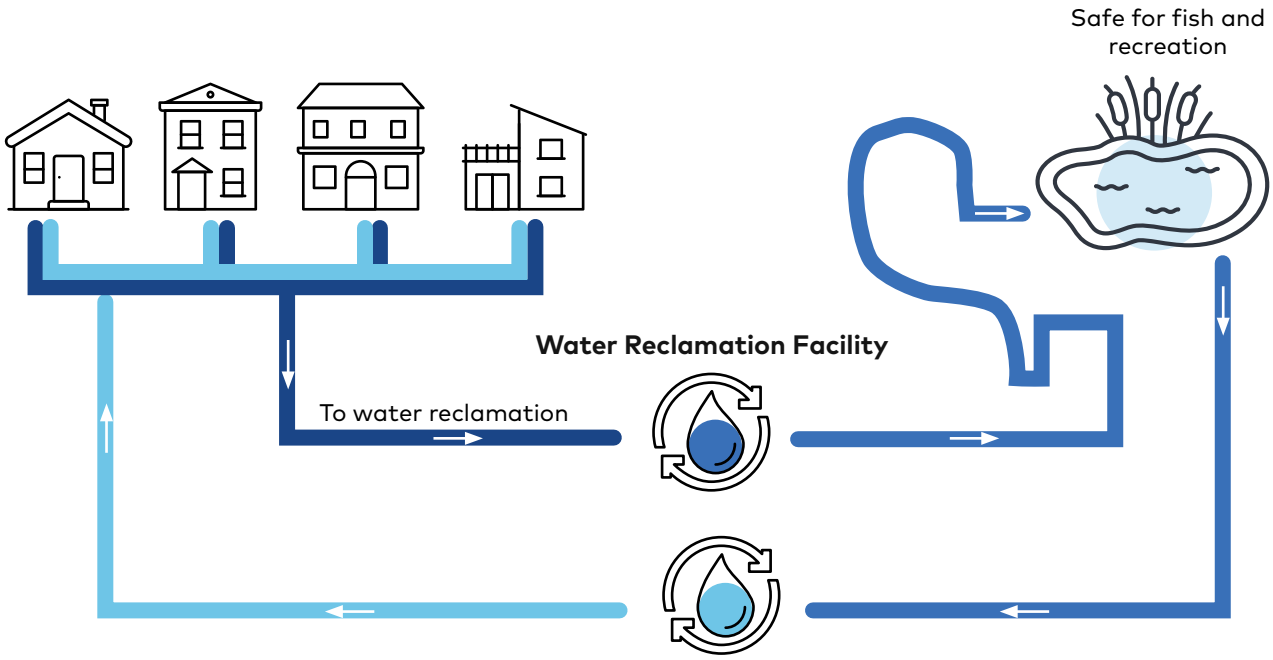
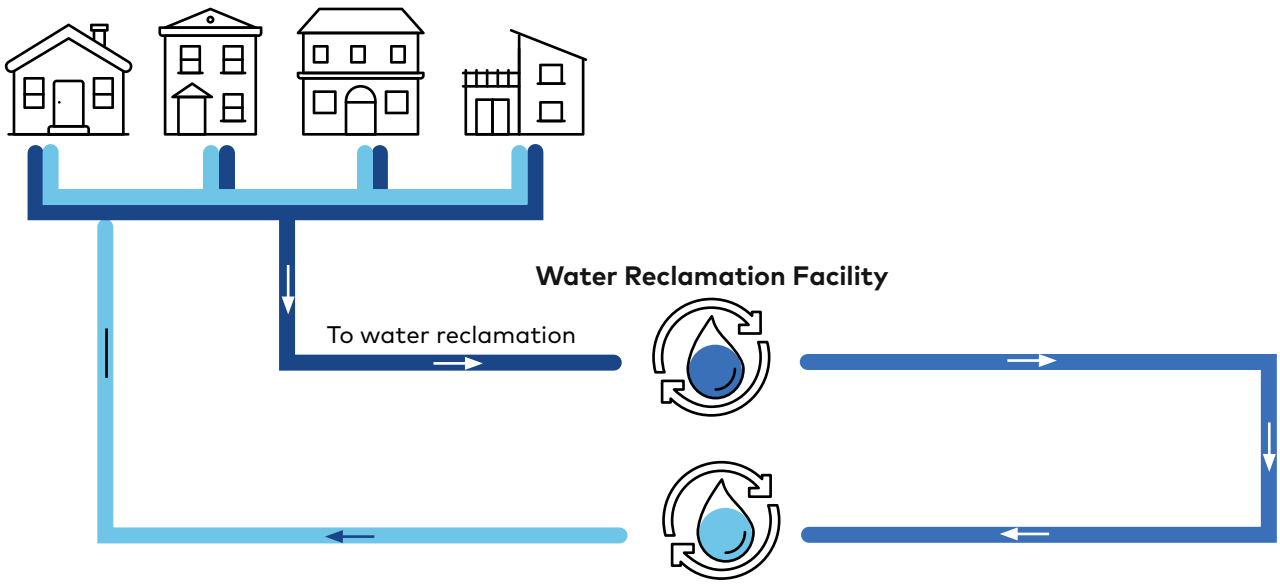
Treating Water for Indirect Reuse



DIRECT VS. INDIRECT REUSE

Treating Water for Direct Reuse



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TREATING WATER FOR NON-POTABLE REUSE

Treated wastewater can be used for various non-drinking purposes, including landscape irrigation, golf course irrigation, agriculture, cooling water for power plants, and other industrial uses. TCEQ sets two types of water quality standards for non-potable reuse under Title 30 TAC, Chapter 210, including Type I reclaimed water for uses where the public may be present during use and Type II reclaimed water for uses where the public would not come in contact with the water.

TREATING WATER FOR INDIRECT POTABLE REUSE

Indirect potable reuse puts reclaimed water through environmental buffers like lakes, streams, wetlands, etc, before withdrawal for further purification into drinking water.

Abilene Hamby WRF (IPR) adds up to 7 MGD to the city's water supply, releasing reclaimed water into Lake Fort Phantom Hill.

TREATING WATER FOR DIRECT POTABLE REUSE

The direct potable reuse process sends water directly from a water reclamation facility to advanced water treatment facilities, where it is purified further to make it safe for drinking. Advanced treatment technologies such as membrane filtration and ultraviolet disinfection make this a safe and reliable water supply source.

Colorado River Municipal Water District Raw Water Production Facility produces 1.5 MGD of reclaimed water which is then mixed with local raw water sources and sent to five regional water treatment plants.

TREATING WATER FOR ON-SITE REUSE

The on-site reuse process treats wastewater on the same site where it was created, avoiding the need for all water to travel to and from centralized treatment plants. While onsite reuse can purify water to drinkable standards, most regulations require that it be used for non-potable purposes only. Sites with onsite reuse typically use the reclaimed water for toilet flushing, irrigation, cooling towers, process water, dust control and clothes washing. Onsite reuse is a growing area of interest in Texas and elsewhere, as it relieves pressure on aging and overburdened infrastructure as cities continue to grow.

Austin Water's OSCAR & CLARA (Onsite Blackwater Reuse) is a 40,000 GPD system that treats water from the building's toilets, sinks, and drinking fountains, as well as captured rainwater and HVAC condensate. This wastewater is then recycled and reused onsite for toilet flushing and landscape irrigation.

ABILENE HAMBY WRF (IPR)

COLORADO RIVER MUNICIPAL WATER DISTRICT RAW WATER PRODUCTION FACILITY

AUSTIN WATER'S OSCAR & CLARA (ON-SITE BLACKWATER REUSE)

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