



# Water Reuse

Water reuse is the practice of using treated wastewater for a beneficial purpose. The Texas Administrative Code (TAC) defines reclaimed water as “domestic or municipal wastewater that has been treated to a quality suitable for a beneficial use” (30 TAC §210.3).

## Water Reuse Terminology

There are two major categories of water reuse: direct reuse and indirect reuse. Both categories can be used for potable (drinkable) purposes.

*Direct reuse* refers to reclaimed water that is piped directly from a wastewater treatment facility to a distribution system for beneficial use. Examples of direct reuse for non-potable uses include piping treated wastewater to an industrial center for manufacturing, to a golf course for irrigation, or a power plant for cooling.

*Indirect reuse* refers to the discharge of reclaimed water back to an environmental buffer, such as a lake, river, or aquifer, and retrieving it to be utilized again. Indirect reuse projects that involve a watercourse require a bed and banks permit from the state, which authorizes the permit holder to convey and subsequently divert water.

*Direct potable reuse* refers to advanced treated reclaimed water that is piped directly into the distribution system or blended with the raw water supply of the water treatment plant.

*Indirect potable reuse* refers to treated reclaimed water that is discharged into a water body, such as groundwater or surface water, and is subsequently treated for potable consumption to augment drinking water supplies.

## Regulations

A water reuse project that involves discharge to waters of the United States must comply with federal and state requirements pursuant to the Clean Water Act and the Safe Drinking Water Act, which ensures the quality of drinking water. In Texas, the following regulations establish quality, design, and operational requirements for reclaimed water:

- 30 TAC Chapter 210
- 30 TAC Chapter 321, Subchapter P
- Texas Water Code §5.102, §5.103, §26.011, §26.0271, §26.121
- Health and Safety Code §341.0391

Reclaimed water used for non-potable purposes is further categorized into Type I and Type II (30 TAC §210.32). Type I use includes applications in which the public may come into contact with the reclaimed water, while Type II applications do not contact members of the public.

The Texas Commission on Environmental Quality recently published the [Direct Potable Reuse for Public Water Systems](#) guidance to explain how direct potable reuse is regulated in Texas and what is required for public water systems to receive approval for reuse projects.

## Facilities in Texas

In the past decade, several major potable reuse projects have been implemented in Texas. Indirect potable reuse projects include augmenting the City of Abilene’s Lake Fort Phantom Hill and the City of Wichita Falls’ Lake Arrowhead, constructing the Tarrant Regional Water District and North Texas Municipal Water District wetlands, and recharging the Hueco-Mesilla Bolsons Aquifer with El Paso Water’s Fred Hervey Reclamation Plant.

In May 2013, the Colorado River Municipal Water District began operating the first direct potable reuse facility in the nation. The District reclaims the wastewater effluent from the City of Big Spring, then provides advanced treatment to produce 2.5 million gallons per day of water that is blended with surface water.

In July 2014, the City of Wichita Falls began operating an emergency direct potable reuse facility that operated for one year before being decommissioned in 2015. The City conveyed wastewater effluent through a 12-mile, above-ground pipeline, then treated it in an existing treatment plant to produce 5 million gallons of water per day. The water was stored in a holding lagoon and then blended with surface water.

In 2016, El Paso Water conducted pilot-scale testing for an advanced water purification facility. Once completed, the 10-million-gallon-per-day facility will be the first to allow advanced treated water to flow directly into the water distribution system. The facility entered its final design stage in September of 2023 and is slated to begin operations in 2026 or 2027.

## Reuse Projects

The Texas Water Development Board (TWDB) has also published a three-part report documenting the history, current technological state, and the future research needs of water reuse in Texas.

## Reuse in the State Water Plan

In the 2022 State Water Plan, recommended water reuse management strategies will produce 1,106,000 acre-feet per year by 2070, which accounts for 14.4 percent of all new water supplies. If these recommended strategies are implemented, direct potable reuse will produce 62,000 acre-feet per year by 2070, which is about 0.8 percent of all new water supplies; indirect reuse will produce 739,000 acre-feet per year, which is 9.6 percent; and direct reuse will produce 305,000 acre-feet per year, which is 4 percent.

The TWDB also published the first Direct Potable Reuse Resource Document in Texas to help communities assess direct potable reuse. The TWDB funded a project that monitors the water quality and treatment efficiency at the Raw Water Production Facility in Big Spring, Texas. The study developed a resource document that provides monitoring guidelines for direct potable reuse facilities.

## More Information and Contact

[www.twdb.texas.gov/innovativewater/reuse](http://www.twdb.texas.gov/innovativewater/reuse)

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