



WATER SERVICES  
ASSOCIATION OF AUSTRALIA

# All options on the table

What is purified recycled water for drinking?



# What is purified recycled water for drinking?

It typically involves taking water that's been recycled from wastewater, sending it through advanced treatment processes, to further filter and purify it so that it's safe to drink and meets the required health and safety standards.

In the US it's sometimes called 'potable reuse'.

It can have different treatment processes and configurations:

- Used to recharge rivers or aquifers
- Put directly into the distribution system

**Some places globally use stormwater too.**

**All produce drinking water.**

Usually mixed with other source drinking water (≈5-40%)

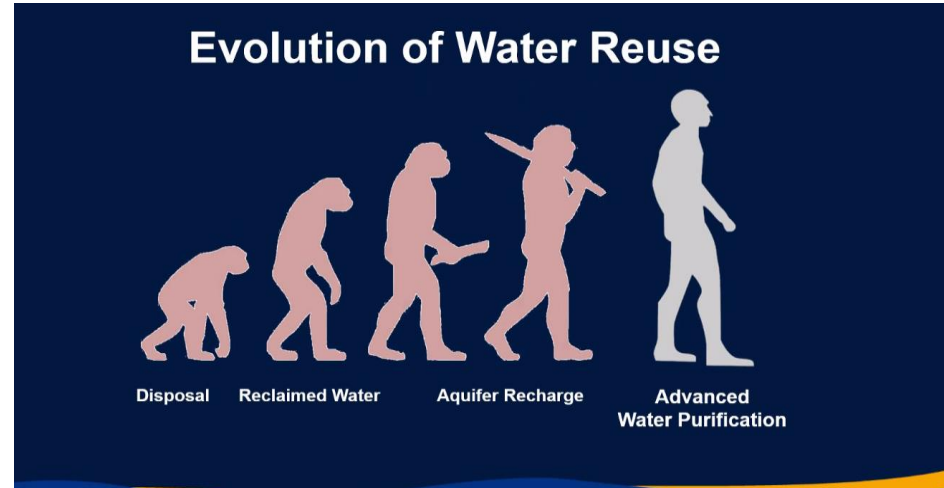


Purified recycled water from Hampton Roads (Virginia), Singapore, Orange County (California)

# Why do places consider purified recycled water?

## Drivers/benefits:

- Resilience to climate change – rainfall independent
- Drought readiness
- Strategic objectives eg reducing reliance on imported water
- It can be lower cost than some options (because you don't need a separate distribution system needed, as you do for recycled water for irrigation)
- Better energy, yield performance than some options (less salt than seawater)
- Population growth - manages nutrient disposal
- Manage saltwater ingress to aquifers



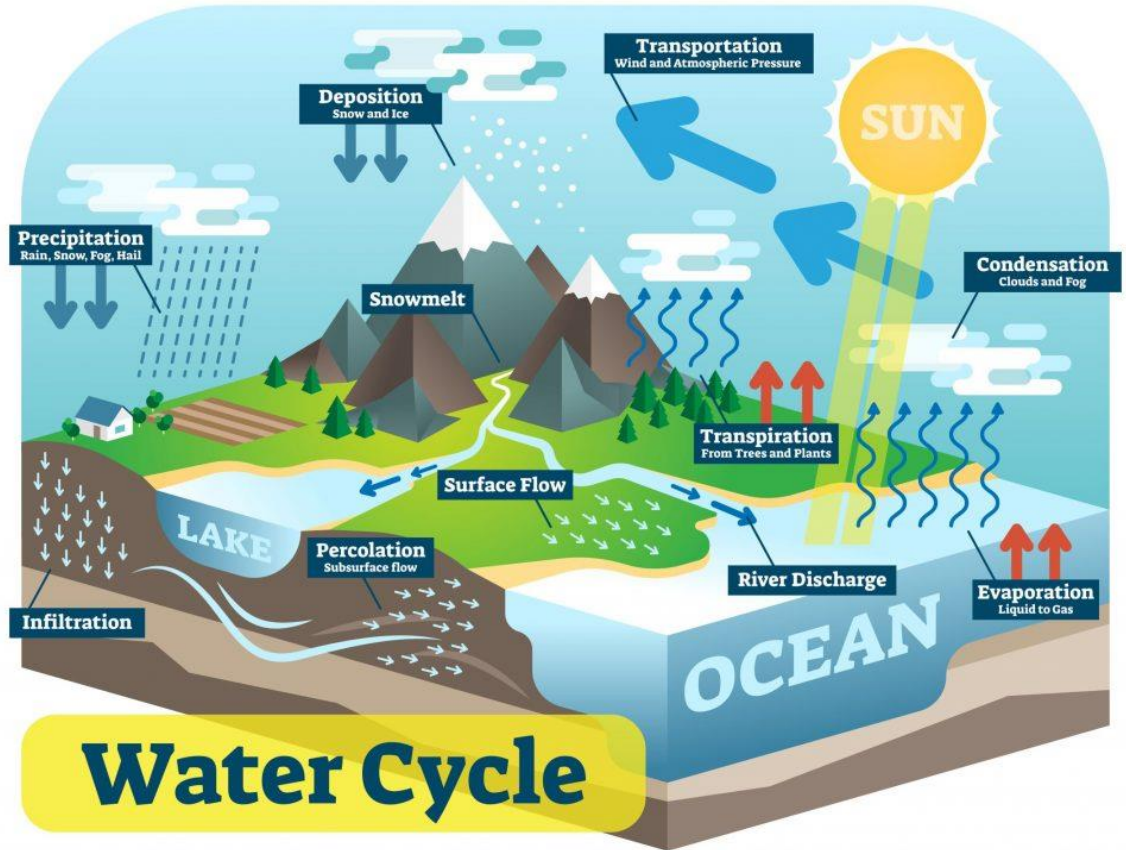
# All water is recycled....

In nature, all water is recycled in an endless cycle. There is no new water on earth – we all drink the same water as the dinosaurs.

In the natural water cycle, water falls from the sky, flows across land and into rivers.

It eventually reaches the ocean, then it evaporates, forms clouds..... And when it rains, the whole cycle starts all over again.

With man-made recycling, technology just speeds up what nature intended.

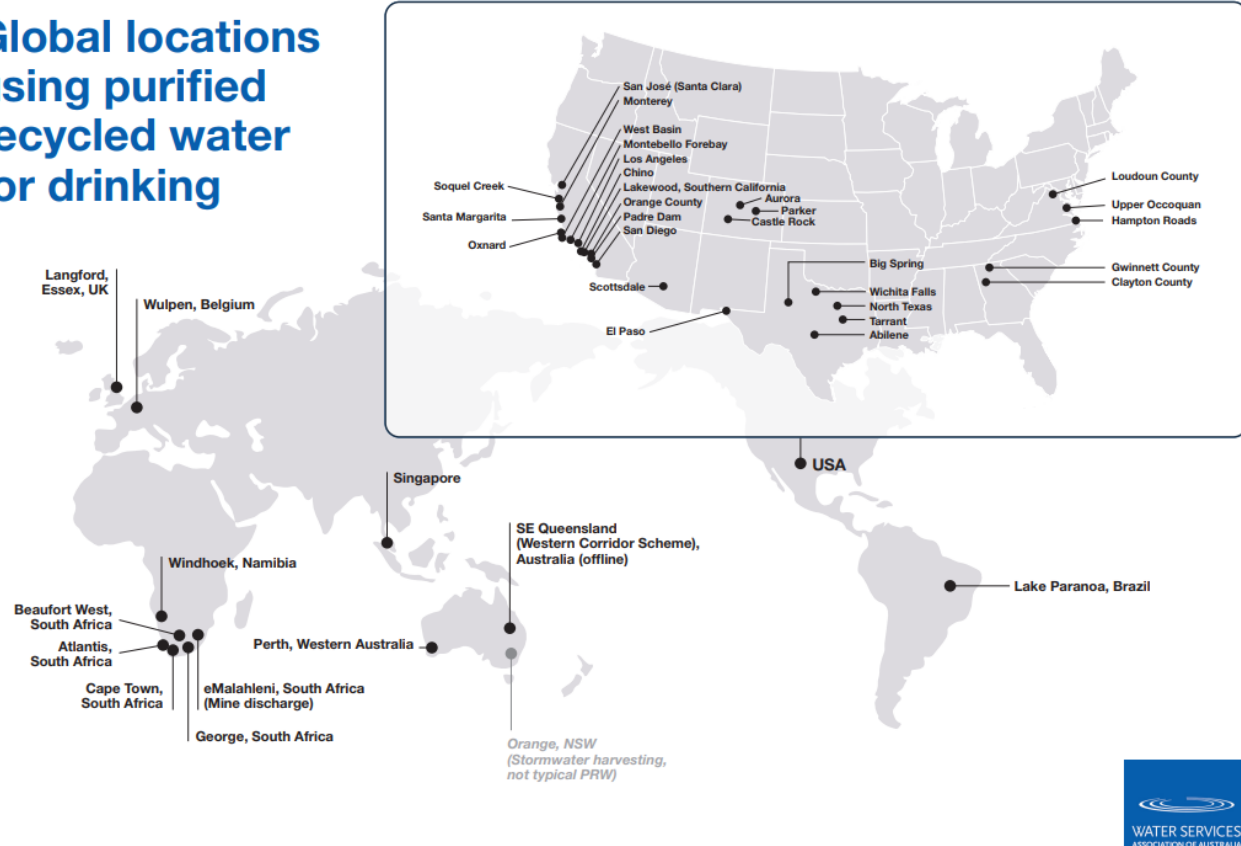


# Is it common around the world?

Today, 35 cities have adopted purified recycled water as part of their drinking water supply.

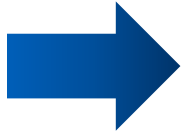
(Actually, all water is recycled; and informal, or unacknowledged reuse is even more common – see the slides about unacknowledged reuse.)

## Global locations using purified recycled water for drinking



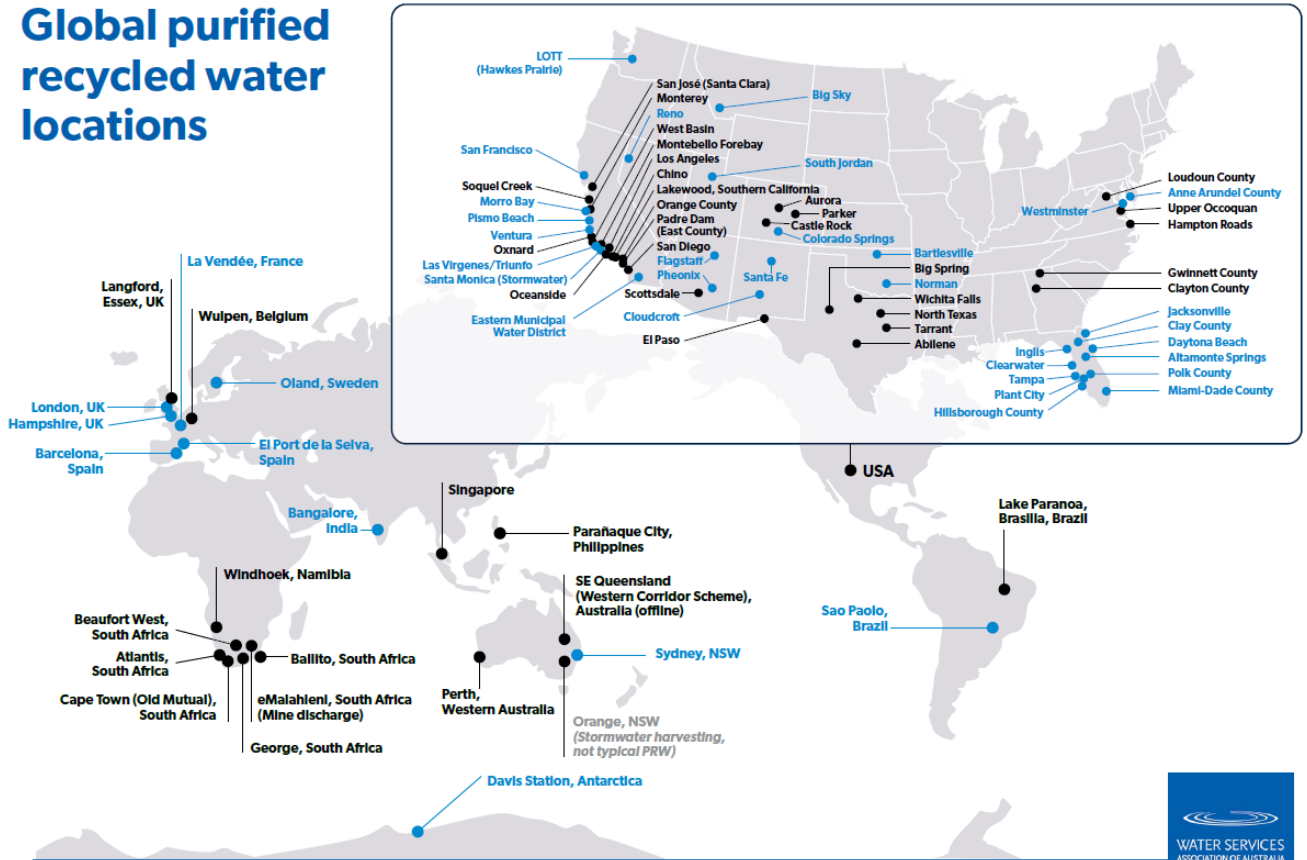
# By 2030 we can expect more

Blue



Black

## Global purified recycled water locations



● Operating and planned ● Exploring or potential

# What is its history in Australia?

- Toowoomba – ‘no’ referendum 2006
- Sydney, ACT considered in in 2007
- SEQWater built the Western Corridor scheme in 2008 (now part of drought plan)
- Perth built the Groundwater Replenishment Scheme in 2017
- Orange NSW has an innovative scheme using stormwater-to-drinking (technically different from PRW but innovative use of alternative source water)
- In New Zealand there are some mentions, tikanga considerations
- The 2021 Draft Lower Hunter Water Security Plan identifies it as potential long term option (the 3 portfolios most supported by the community include purified recycled water for drinking) and includes plans for a demonstration plant
- The 2021 Draft Central Coast Water Security Plan identifies community consultation on it for the future
- In 2021 various reports have advocated for all options to be on the table for water supply, including purified recycled water for drinking: National Water Reform review by the federal Productivity Commission, Infrastructure Victoria, NSW Productivity Commission, Draft NSW Water Strategy, Infrastructure Australia