WATER SERVICES
ASSOCIATION OF AUSTRALIA

All options on the table
Purified recycled water

Let’s talk about Toowoomba

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 <u>drinking water</u>.

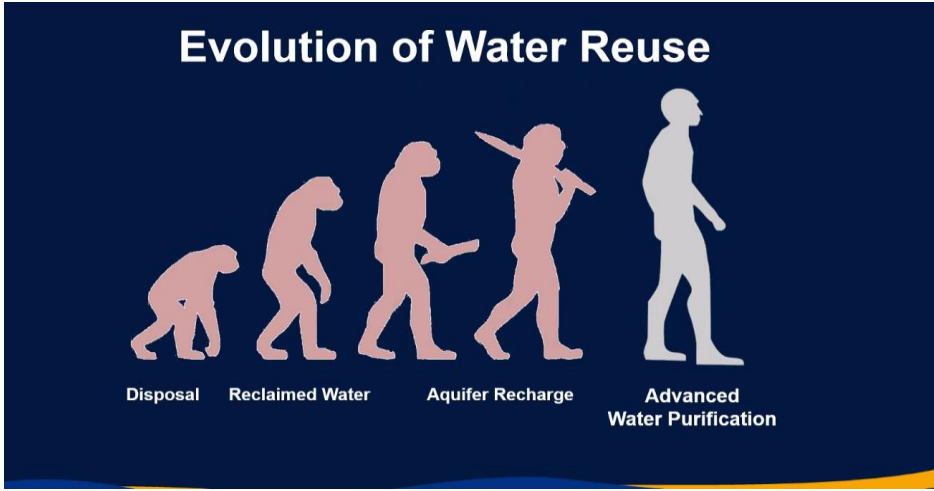
Usually mixed with other source drinking water (≈5-40%)

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

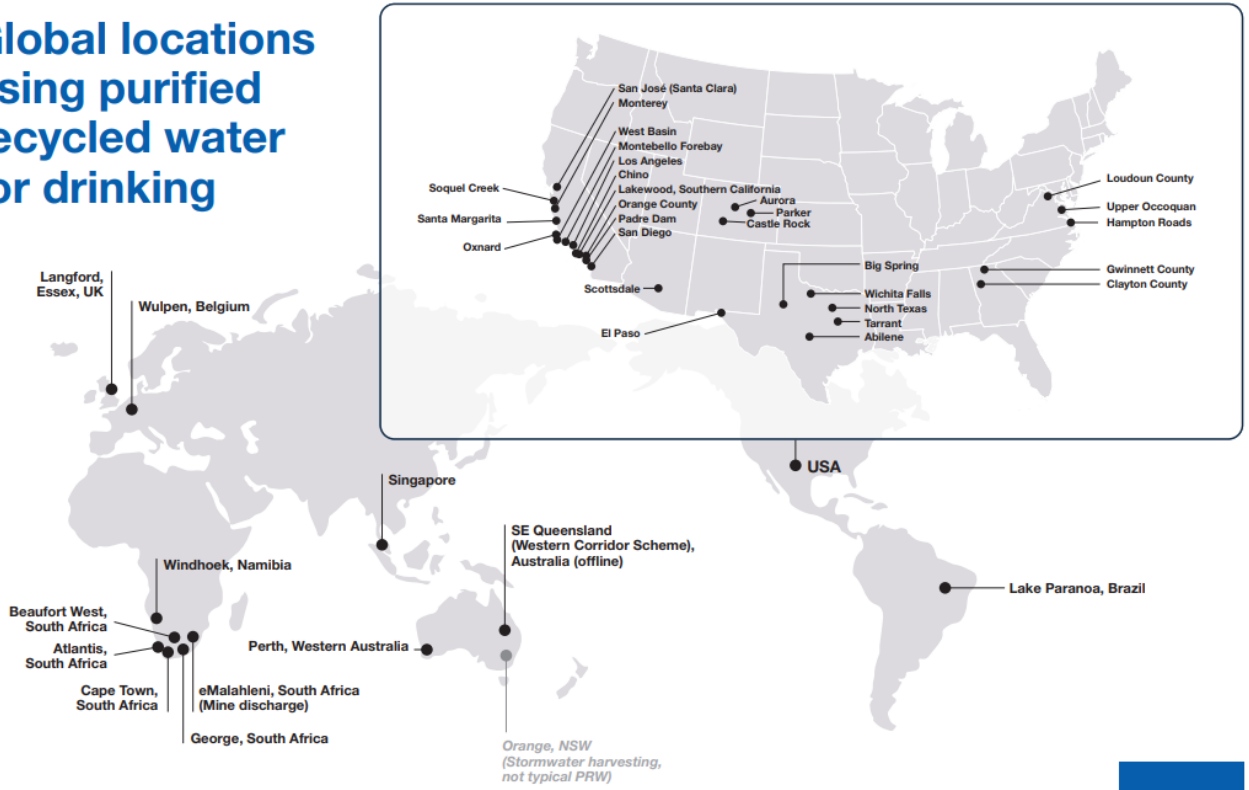


Is it common around the world?

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



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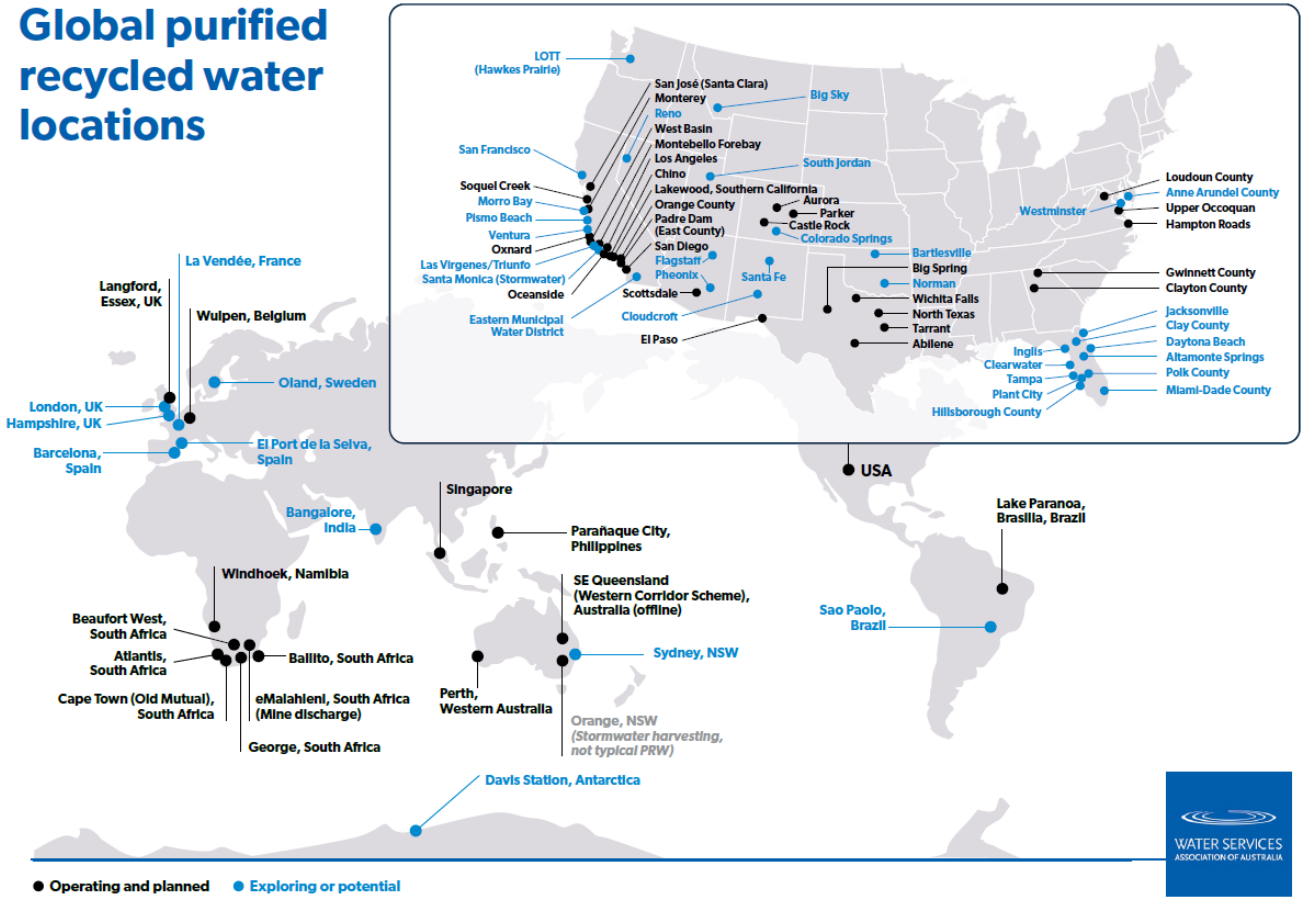
By 2030 we can expect more

Blue

Black



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

What happened in Toowoomba?

July 2006 Referendum:

Yes	No
38%	62%

A proposal for purified recycled water for drinking came to light unexpectedly and triggered some local backlash. A group called 'Citizens Against Drinking Sewage' formed and began to campaign using phrases like "Poowoomba". A referendum was called with the majority of people in the town voting no.

A few things about Toowoomba

- Classic case of how not to engage with the community
- Announced by accident (in parliament) – the Council did not have information ready to share with the community or answer questions
- A 3-year community engagement had to be compressed into 10 weeks
- The referendum forced people to take a position
- Some local critics sprang up before communications materials and fact sheets were developed.

Later:

- After the referendum, a pipeline was built linking Toowoomba to Lake Wivenhoe. This means it is in fact connected to Western Corridor and would receive purified recycled water when that scheme is turned on.
- The Productivity Commission National Water Reform Report (May 2018) noted that this was far more expensive:

> While the cheapest water supply option is case-specific, foregoing the use of planned potable reuse can have significant economic costs. For example, the Toowoomba City Council's decision to not use indirect potable reuse to augment its drinking water supplies required it to invest in a pipeline with a capital cost over $100 million in excess of the estimated cost of the recycling proposal (PC 2011, p. 96).

A later study found some interesting findings

A study by the University of Melbourne and University of Wollongong found that:

- Residents were open-minded, many regretted the ‘no’ vote
- People understood their dependence on water – and noted that an insufficient water supply may force them to move away
- The ‘no’ outcome was probably due to the rushed consultation, quality of information

The Wikipedia article on the referendum gives an indication of the local politics that arose: *‘misinformation’, ‘dirty tricks’, ‘alleged whispering campaign’, ‘unsourced claims included a kickback’.*

The local paper found support for PRW later

The **Chronicle** ran two reader polls in later years:

READER POLL

Is Toowoomba better off for having voted no to recycled water?

This poll ended on 13 August 2011.

Current Results

Yes	42%
No	57%

This is not a scientific poll. The results reflect only the opinions of those who chose to participate.

READER POLL

Should Toowoomba have voted yes to the recycled waste water scheme?

This poll ended on 16 November 2013.

Current Results

Yes	62%
No	37%

This is not a scientific poll. The results reflect only the opinions of those who chose to participate.

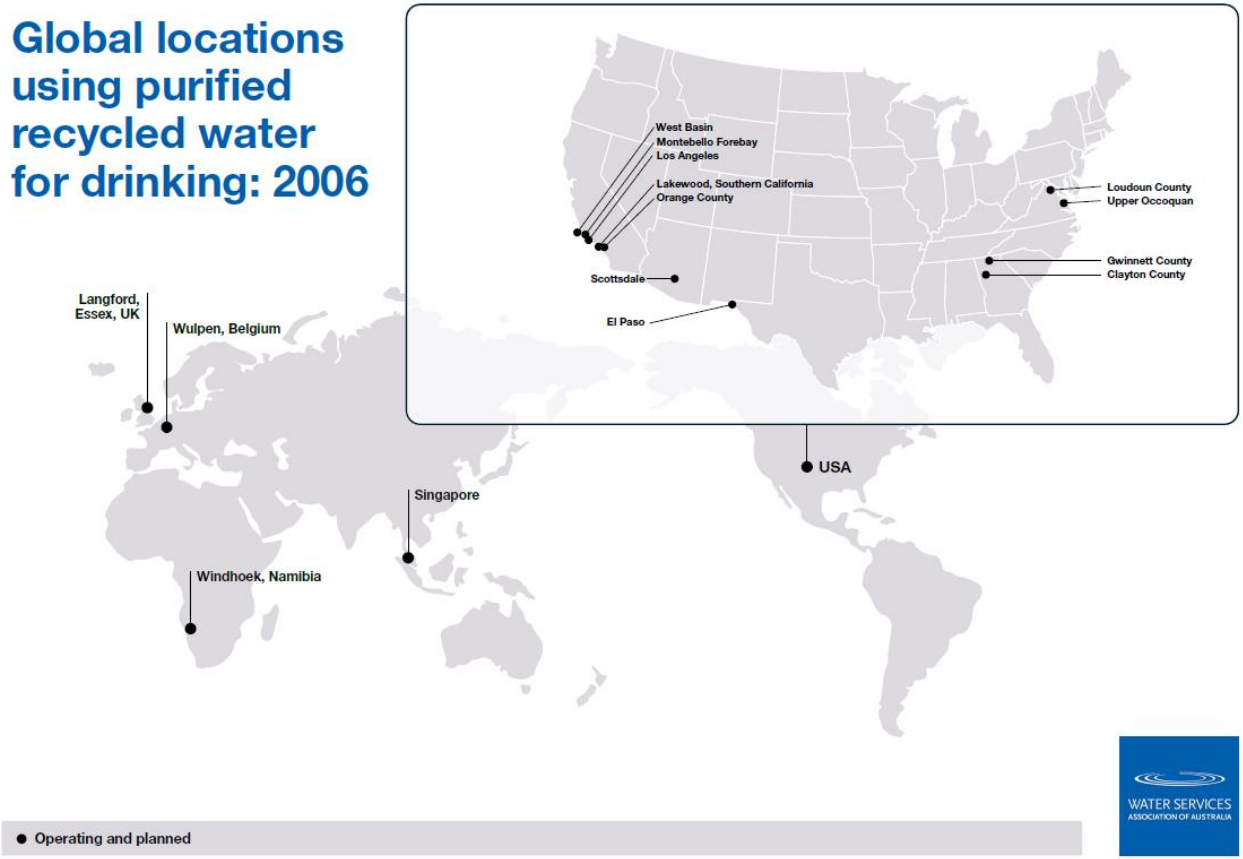
For more contemporary research results, see the Research Statistics page.

Could Toowoomba happen again?

Things have moved on quite a lot since the referendum in 2006.

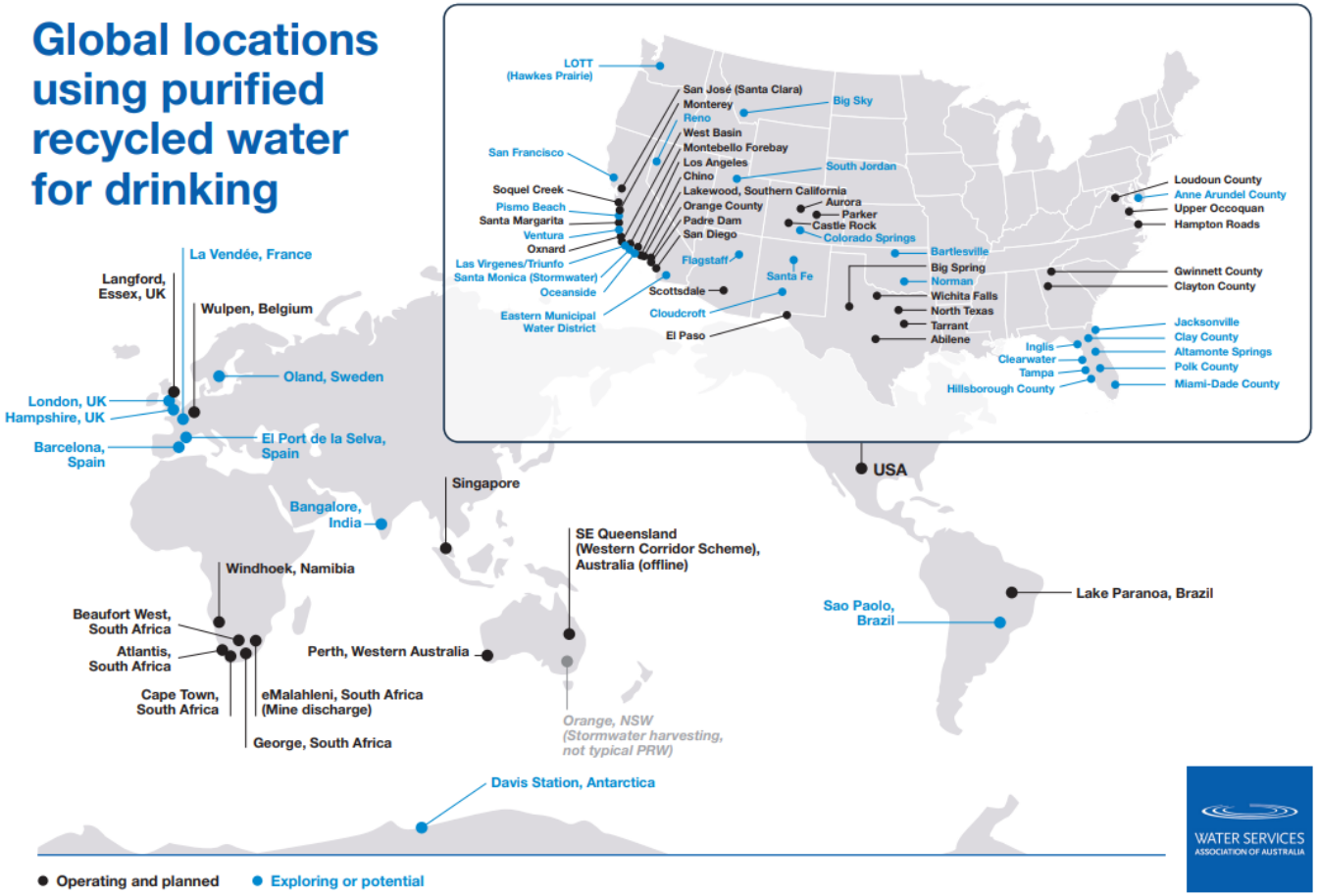
For a start, purified recycled water for drinking is much more common.

In 2006, only 15 cities around the world had adopted it.



The number of town has more than doubled

Now, around 40 have adopted it, and a similar number again are exploring it.



San Diego also rejected PRW initially

- In the late 1990s a contender for Mayor called the proposal 'Toilet to tap'. The City did not have information ready to counter this. The proposal was dropped.
- But San Diego went on to complete a Water Reuse study – partnered with Surfrider Foundation, using public participation
- Then a 2nd study – Built demonstration project, engaged with regulators, offered tours and tastings
- Formed Water Reliability Coalition of local groups

The San Diego Union-Tribune

The yuck factor: Get over it

Similar efforts in years past were dubbed by critics, including this editorial page, as "toile to-tap" technology. But this editorial board has come to accept the latest science – and real-life experience – that says this water would likely be the purest and safest water in th system.

Still, there would be a significant yuck factor for many residents to overcome. In our view it's time to get over it.

Community support gradually rose: 26% in 2004, up to 73% in 2012, 79% in 2019

Now building Pure Water San Diego: By 2035 it will provide 33 – 50% of city's supply

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Lessons from the journeys of others

1

It can be done

Communities around the world have implemented purified recycled water schemes for decades. It could be successfully implemented in Australia, if circumstances warrant.

The three 'T's:
Trust • Transparency • Time

2

Trust is critical for securing support for purified recycled water

Transparency and open information sharing will help to develop and maintain this trust.

3

Establishing purified recycled water is complex and takes time

It takes time – up to a decade. People need to be taken on a journey to be comfortable with it. Rushing or imposing deadlines increases the risk of rejection or backlash.

4

Seeing is believing

Investing in a demonstration plant, visitor centre and tour program for 'place based learning' will greatly improve community understanding and support. It can showcase and prove the reliability of the technology, and pre-empt stigma reactions through calm, engaging learning environments.

The experience should be carefully crafted with sequenced messaging to build overall awareness and understanding, and may include sampling the water.

5

Wording and imagery are critical

This will be somewhat specific for each community, so local research is important. Choose words and branding that resonate and do not alienate. Technical jargon confuses people and doesn't build trust.

6

News media coverage has a profound impact on public acceptance

It can make or break a scheme. Proactively engaging key influencers and the media, leveraging social media, and using expert testimony and third party advocacy can help build trust and transparency.

7

Political support is essential

Political cycles can polarise an issue, and force people to take a side. Good engagement across the full political spectrum, to gain and keep support, is critical.

8

Grass roots education and engagement

Can be more effective than high profile marketing activity or 'above the line' presence.

'Water should be judged by its quality and not its history'
LUCAS VAN VUUREN, SOUTH AFRICA

9

General education around the urban water cycle and context

Will help prevent stigma and encourage acceptance. Provide information on the range of long-term supply options, climate trends and cost.

10

Regulators play a powerful role

They will lead government and community perception, and have the authority to determine whether purified recycled water can proceed. It is their role to take a conservative approach to risk management, so it may take a long time for them to become comfortable and produce a regulatory framework. Good regulatory engagement, and high transparency, are essential.