PUB SINGAPORE'S NATIONAL WATER AGENCY

OUR WATER STORY

As a small city state with limited natural resources, we faced daunting challenges in securing our water supply. However, through innovation, research and development and sheer determination, we overcame the odds to build the water-resilient Singapore we are today.

1972

DRAFTING SINGAPORE'S FIRST WATER MASTERPLAN

This was the first step to ensure Singapore had a diversified and adequate supply of water that could meet our future requirements.

1977

THE SINGAPORE RIVER CLEAN-UP

Singapore launched a major clean-up of the heavily polluted Singapore River and Kallang Basin. Beyond physical cleaning, we also removed pollution sources, built proper sewage infrastructure and put in place anti-pollution measures to minimise future pollution. The clean-up was finally completed on 2 September 1987.

1987

NO MORE NIGHTSOIL BUCKETS

The last night soil collection centre located at Lorong Halus ceased operations, as Singapore embarked on a modern sanitation system.

1997

SINGAPORE ACHIEVES 100% MODERN SANITATION

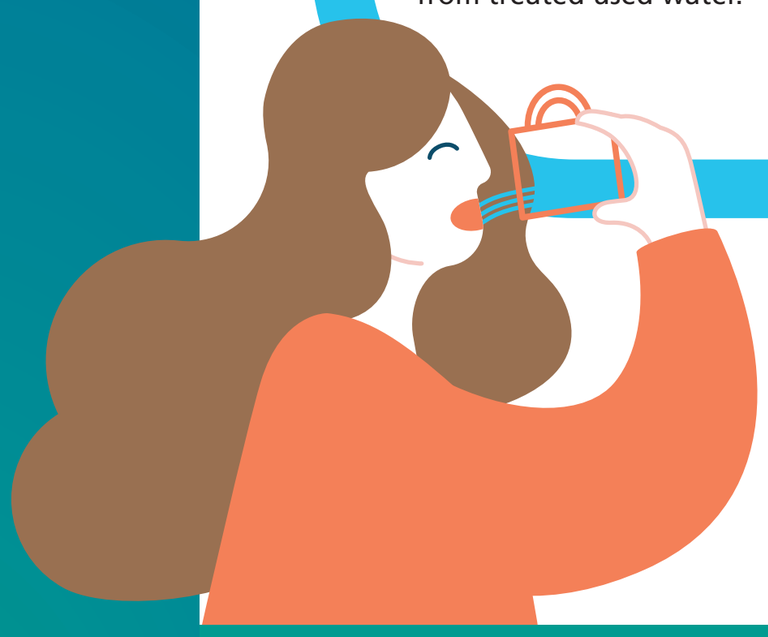
Singapore implemented a comprehensive sewerage system, providing modern sanitation to the entire population. This ensured all wastewater was collected and treated, protecting public health.

2002

CHEERS TO NEWATER

NEWater made its debut at the 2002 National Day Parade, with 60,000 people toasting the nation's birthday with bottles of NEWater. In 2002, then Prime Minister Goh Chok Tong officially launched the NEWater Visitor Centre and the first NEWater Factory at Bedok. With the launch of NEWater, Singapore is now able to close the water loop as each drop of water can be reused endlessly through the production of NEWater from treated used water.

*NEWater Visitor Centre has ceased operations as of 31 July 2024.



2024

ADVANCING SINGAPORE'S NEWATER JOURNEY

Singapore has four NEWater factories – two in Changi, and one each in Ulu Pandan and Kranji. The Bedok NEWater factory reached its operational lifespan and had closed in 2024. A third factory at Changi and one at Tuas will increase daily NEWater production by up to 125 million gallons.

2020

COASTAL PROTECTION

PUB was appointed the coastal protection agency overseeing the protection of Singapore's coastline from the threat of sea-level rise.

2008

MARINA BARRAGE

Built across the mouth of the Marina Channel, Marina Barrage creates Singapore's 15th reservoir, and the first in the heart of the city. This 10,000 hectare water catchment was constructed to augment Singapore's water supply for generations to come.

DEEP TUNNEL SEWERAGE SYSTEM (DTSS)

A cornerstone for Singapore's used water management, DTSS is a 206 km underground network that channels used water by gravity to three centralised water reclamation plants. Phase 1, completed in 2008, serves eastern Singapore. Phase 2 of DTSS will extend the network to serve the western half of Singapore.

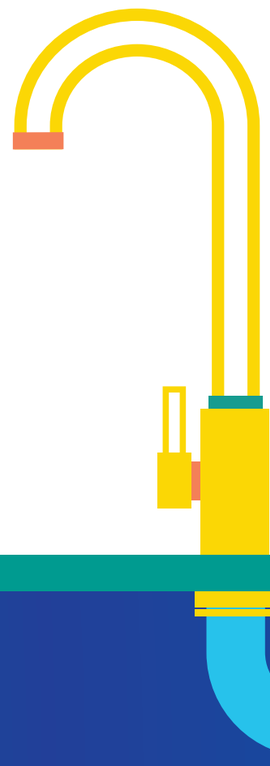
2005

SEAWATER DESALINATION

Since 2005, desalination has allowed us to turn seawater into freshwater, making us more resilient to climate change and prolonged droughts.

Learn more:

GO.gov.sg



PUB SINGAPORE'S NATIONAL WATER AGENCY

DIVERSIFYING OUR WATER SUPPLY WITH THE FOUR NATIONAL TAPS

Over the years, we've built a robust, diversified and sustainable supply of water for Singapore, also known as our Four National Taps. This has allowed us to close the water loop and take a step closer to water resilience.

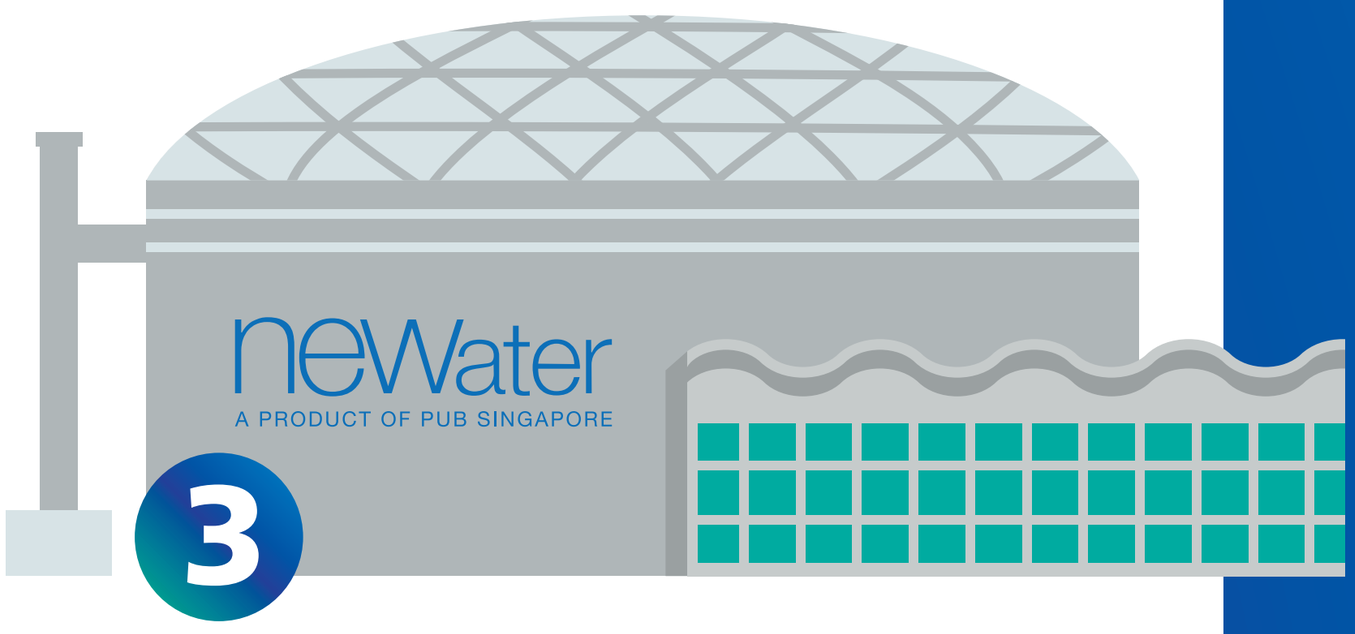
1 Water from Local Catchments

Did you know harvested rainwater forms an important part of our sustainable water supply? More than two-thirds of our land are now water catchment zones that allow us to collect rainwater – which we turn into potable water for homes and industries.

Fun fact: There are currently 17 reservoirs in Singapore. Can you name them all?

2 Imported Water

To meet Singapore's water needs, PUB also imports water. Today, we continue to purchase water from Johor Bahru under the 1962 Water Agreement, which allows us to draw up to 250 million gallons of water per day (mgd) from the Johor River until 2061.



3 NEWater

In 2002, a Third National Tap was added to further enhance our water security. Produced from treated used water, NEWater is high-grade reclaimed water that is ultra-clean and safe to drink. Now a Singapore success story, it is a key pillar of our sustainable water supply.

Did you know?
NEWater is mainly used for industrial purposes, due to its high water quality. During dry periods, NEWater is added to top up our reservoirs and blended with raw water, and treated before it is supplied as tap water.

4 Desalinated Water

Leveraging technology to diversify our water supply, desalination became our Fourth National Tap. By pushing seawater through membranes to remove salts and minerals, it turns seawater into potable water. Presently, Singapore houses 5 desalination plants.

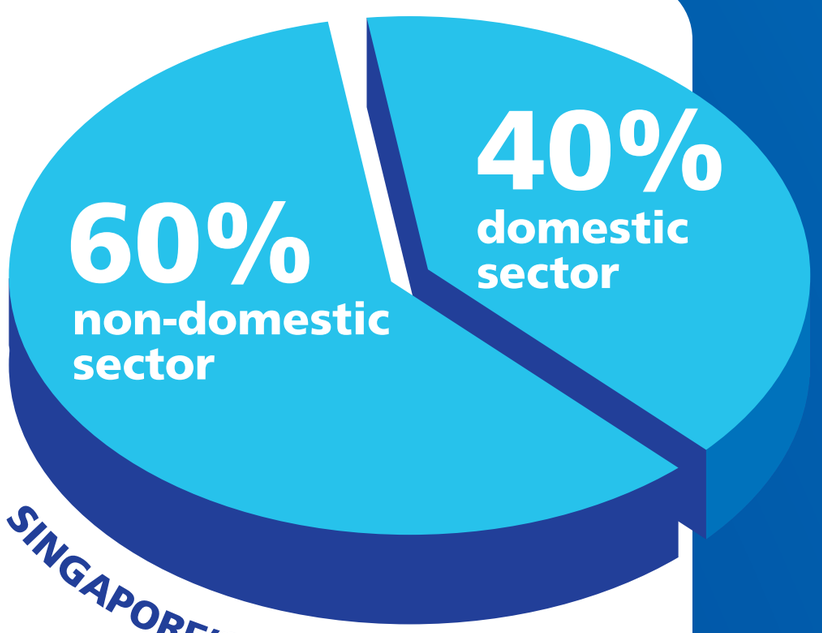
PUB SINGAPORE'S NATIONAL WATER AGENCY

PLANNING FOR OUR GROWING WATER NEEDS

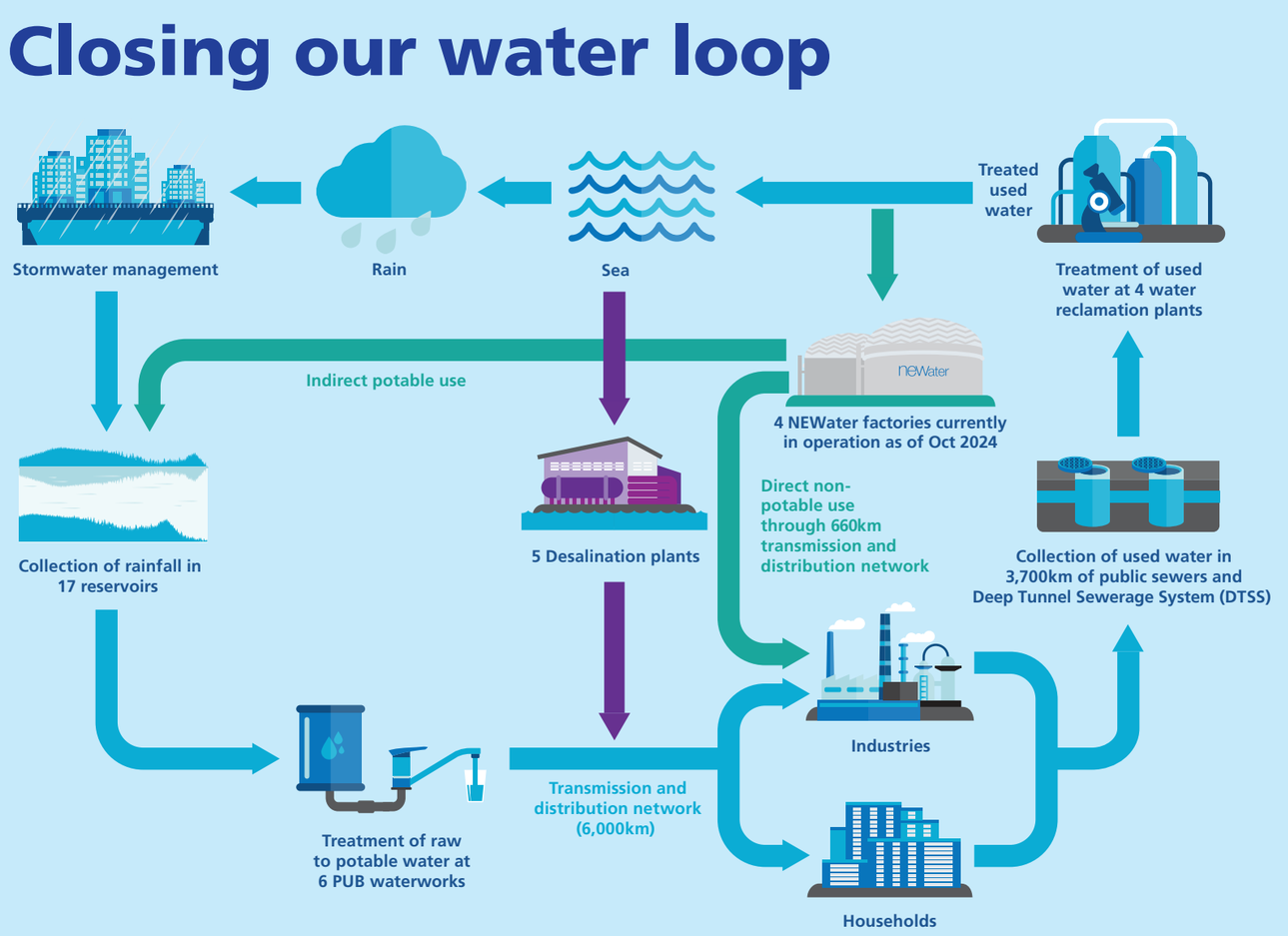
Our holistic approach to water management

By 2065, our total water demand could almost double in tandem with population and economic growth. That's why PUB proactively plans for and implements water infrastructure to meet our future needs. We do this through three key strategies:

- Collect every drop of water
- Reuse water endlessly
- Desalinate seawater



Closing our water loop



Conserving our water resources

Despite our successes, it is more important than ever for everyone to do their part to conserve water. Here's why:

- Water demand in Singapore is currently about 440 million gallons of water per day, which is enough to fill 800 Olympic-sized swimming pools. This water demand is expected to increase to support a growing population and economy.

- Climate change has resulted in more extreme weather events such as intense rainfall and prolonged dry spells that put a strain on our water supply.

- Treating, filtering, and pumping water to homes and businesses requires energy. By using only what we need, we reduce our overall water consumption and the energy needed to treat and produce it. This in turn, helps to reduce our collective carbon footprint.

PUB SINGAPORE'S NATIONAL WATER AGENCY

SIMPLE WAYS TO SAVE WATER FOR A SUSTAINABLE FUTURE

Achieving a sustainable level of water consumption requires commitment and participation from the community. You can contribute by practising good water-saving habits every day, starting at home.

Wash your clothes on a full load

Filling up your washing machine before washing can save about 40 litres of water every day or 288 litres a week.

Choose to use half-flush whenever possible

Each half-flush uses 3 litres of water compared to 4.5 litres for a full flush. So you can save about 9 litres of water a day.

Turn off the tap while brushing your teeth

This simple habit saves you 23 litres of water every day. Enough to fill 153 toothbrush mugs!

Wash your fruits and vegetables in a container

Rinsing them in a filled container instead of under a running tap can save up to 33 litres of water every day.

Turn off the shower while soaping

This habit can save you as much as 27 litres of water every day.

Reuse water

After rinsing fruits and vegetables, you can reuse the water to water your plants. You can even reuse laundry water to wash floors or flush the toilet.

PUB SINGAPORE'S NATIONAL WATER AGENCY

WATER EFFICIENCY AND CONSERVATION WITHIN ORGANISATIONS

By 2065, Singapore is projected to need twice as much water as it does now. By then, the non-domestic sector will account for almost 60% of our national water demand. To manage water usage, companies are encouraged to adopt the Reduce, Replace and Reuse approach now to ensure a more sustainable future.

Reduce

Monitor, review and reduce water consumption by adopting efficient flow rates and flush volumes, using water-efficient products and repairing leaks promptly.

Replace

Choose NEWater, seawater and/or rainwater instead of potable water for non-potable use including irrigation, general washing and cooling towers (when applicable).

Reuse

Potable water that is clean enough after one-time use, can be reused for non-potable purposes such as manufacturing processes, cooling towers, scrubbers, toilet flushing and more.

Improving water efficiency and conservation in industries

PUB is working closely with industries to help them improve their water management through the following initiatives:what we need, we reduce our overall water consumption and the energy needed to treat and produce it. This in turn, helps to reduce our collective carbon footprint.

- Provide funding support for projects that improve water efficiency, including water efficiency assessments, recycling of water, and adoption of water-efficient equipment.
- Develop tools and standards to guide the industry towards better water efficiency practices including initiatives such as the Water Efficiency Management Practices, the Singapore Green Labelling Scheme and more.
- Mandatory water recycling requirements for large water users in specific sectors (wafer fabrication, electronics, biomedical) with high potential for water recycling.