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Let's Solve Water

Water Reuse:

A strategic alternative water source for municipalities and industries

November 2026



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- Yet -
Reuse treatment covers
<10%
freshwater withdrawals

40%

Demand for clean water is outpacing supply: Global water demand will exceed supply by 40% by 2030.

(World Bank)

4 billion

people live in water-scarce areas.

(World Bank)

Europe's water supply is under stress:

Water stress affects

30%

of the population every year



That is likely to increase due to climate change.

(European Environment Agency)

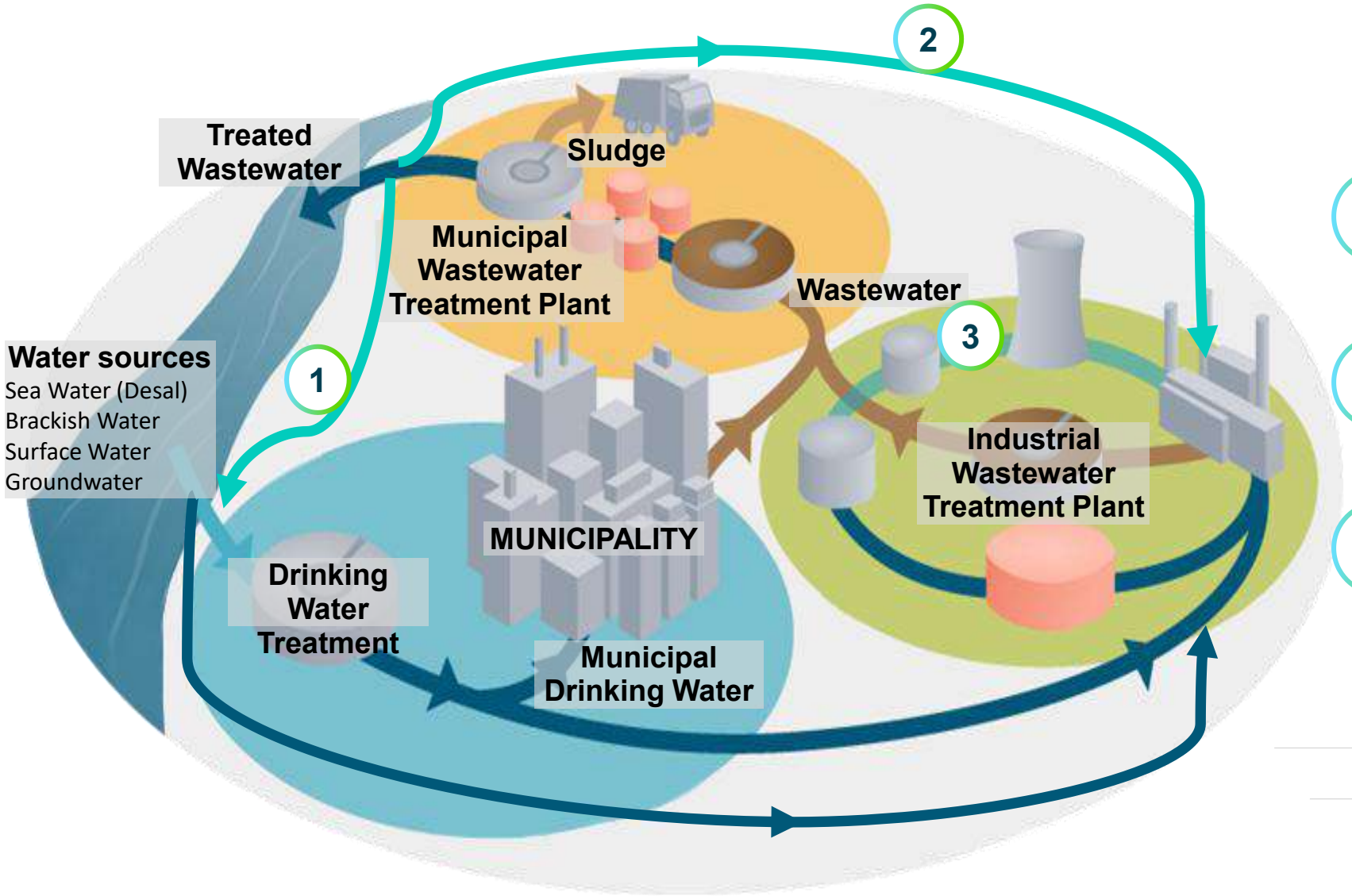
One-quarter

of the global population face extremely high water stress each year, regularly using up almost their entire available water supply.

(World Resources Institute)

Multiple options to reuse water – The water ecosystem

Municipal Drinking Water and Industrial Water



1 **Municipal Wastewater Reuse**
Direct Potable Reuse (DPR)
Indirect Potable Reuse (IPR)

2 **Municipal Wastewater Reuse**
Industrial use

3 **Industrial Wastewater Reuse**
Industrial use

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Municipal wastewater paradigm shift

From a regulatory requirement to an opportunity



Past – regulatory compliance

- Collect wastewater
- Move it quickly downstream
- Treat to acceptable levels
- Dispose of waste without harming environment

Present – opportunity towards water security

- Manage resource to generate value for utilities and its customers
- Improve environmental quality to communities
- Utilize a holistic approach to water management

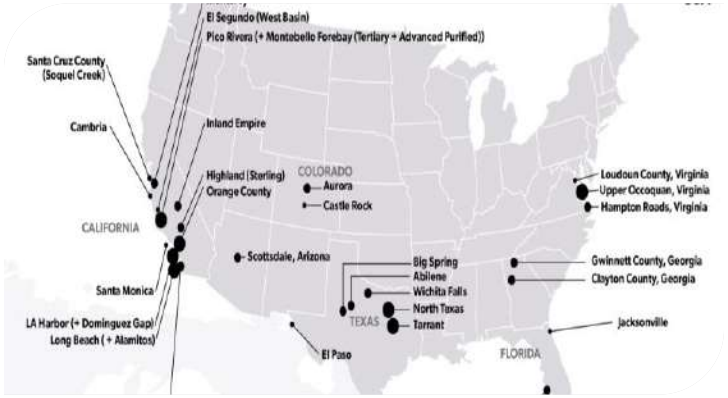
Water reuse creates value from wastewater and strengthens water security

Reuse projects evolution in US

Reuse projects adoption in US driven by sustainability, water scarcity, economics and regulations



2010 US Reuse Projects



2025 US Reuse Projects



2040 US Reuse Projects

● Exploring/Education ● Planned ● In Construction ● Operating/Available

Supplies <100,000 people or Demonstration/education only

Supplies 100,000 – 1,000,000 people

Supplies >1,000,000 people

Water Reuse increasing adoption in US, from 5 projects in 2010 to > 100 in 2040

Source: The Water Services Association of Australia

Municipal reuse projects



Project location	Potable reuse treatment trains
Cloud Croft New Mexico	MBR → RO → UV/AOP → Water Treatment Plant
Big Springs Texas	MF → RO → UV → Reservoir Augmentation → Water Treatment Plant
Wichita Falls Texas	MF → RO → UV → Reservoir Augmentation → Water Treatment Plant
Orange County California	MF → RO → UV → Aquifer Recharge → Water Treatment Plant
Pure Water California (planned)	Ozone → Biological Activated Carbon (BAC) → MF → RO → UV → Reservoir Augmentation → Water Treatment Plant

Typically reuse projects utilize multiple treatment technologies

MBR: Membrane Bio-reactor, RO: Reverse Osmosis, UV: Ultraviolet light; AOP: Advanced Oxidation Processes; MF: Micro-Filtration

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Reuse drivers for Industries

Main market drivers promoting Reuse

1 Water scarcity and risk mitigation

Global water stress is driving the need for alternative sources of supply. World Bank states that 46% of the population will be affected by water stress in 2050, up from 10% today

2 Regulatory compliance

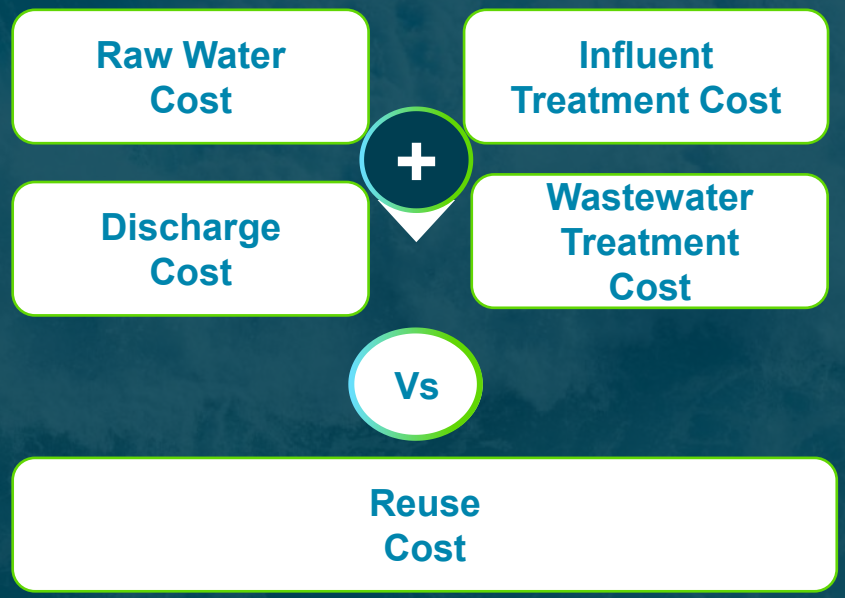
Watershed degradation is leading to broad ZLD mandates in India, Industry- specific ones in China and localized actions elsewhere

3 Sustainability and social footprint

"Water positivity" for data centers
High water user (pulp and paper, power gen, mining)
PR-sensitive industries (food and beverage, pharma, consumer goods)

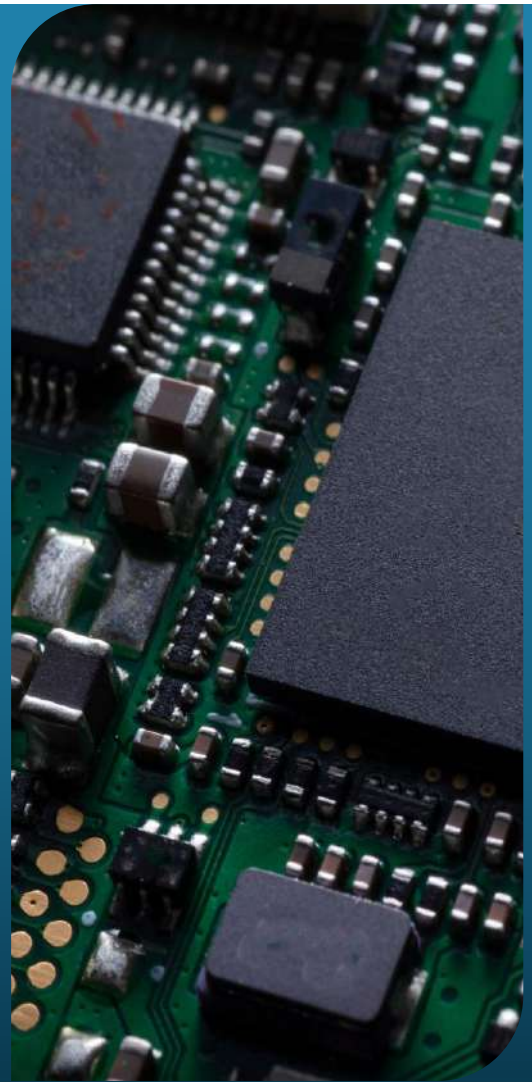
4 Economics

Reuse is adopted when cost of fresh water + purification + wastewater treatment + disposal > reuse cost



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Silfex recycles 80% of wastewater with membrane technology



Challenges

Given the semiconductor industry's dependence on ultrapure water (UPW), Silfex implemented an advanced water reuse and recycling program to mitigate growing water-related risks.

With cleanroom operations generating significant wastewater and reliance on municipal supplies posing long-term risks, Silfex needed to identify efficient ways to reduce water consumption and increase internal water reuse.

Solution

Silfex initiated a comprehensive assessment of its water treatment systems, analyzing the volume and chemical characteristics of individual waste streams.

The facility then implemented a brine recovery reverse osmosis (RO) system to capture and reuse RO reject water and overflow from precision cleaning processes.

Springfield, Ohio, USA



Silfex

Impact

- Achieved a 15% reduction in ultrapure water system waste through early recovery efforts.
- Enabled recycling and reuse of up to 80% of cleanroom wastewater.
- Reduced dependence on municipal water significantly, building operational resilience and avoiding the cost of expensive treatment chemicals.
- Projected to save millions of gallons of water annually and futureproof plant from public water supply disruptions.

https://www.xylem.com/en-us/resources/blog-posts/making-waves-liquid-assets-boosting-semiconductor-industry-resilience/

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Summary



Recycle/reuse of wastewaters can:

- Reduce risk of fresh water availability
- Reduce fresh water and wastewater costs
- Reduce the burden on a wastewater treatment plant
- Address industrial production needs
- Improve community relations
- Support an organization sustainability goals

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