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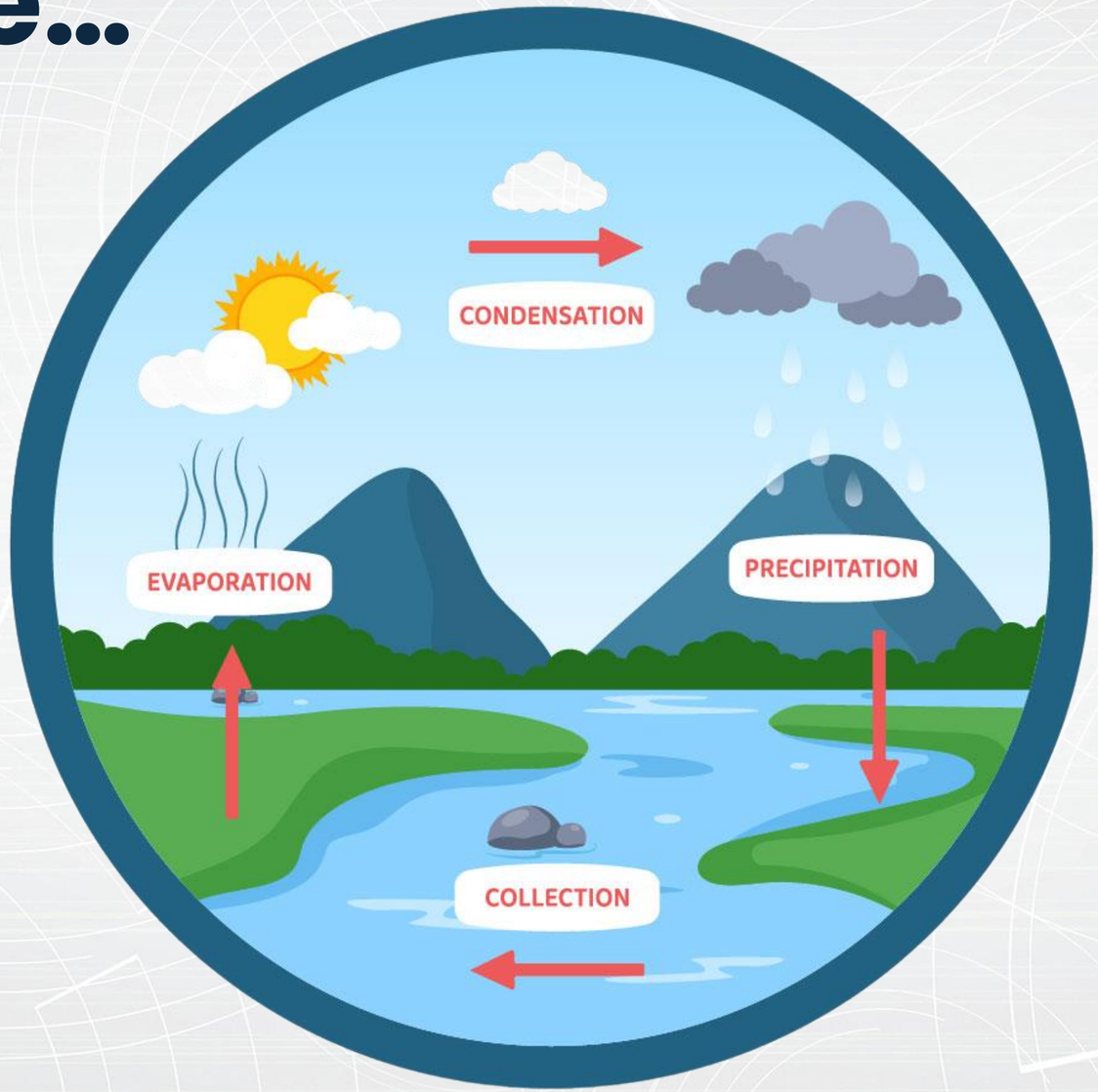
Closing the Loop with the Circular Water Economy

Water is an Endlessly Renewable Resource…



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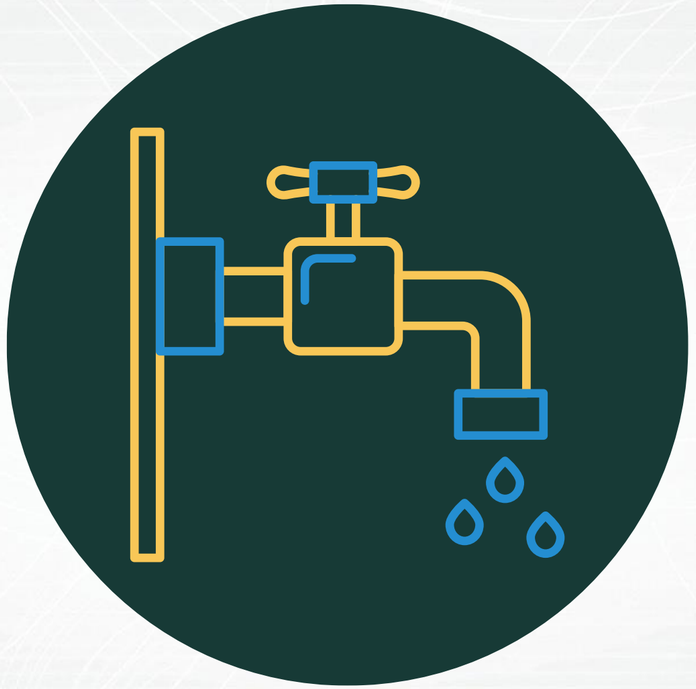
The way we use it is linear

Take



Use

Dispose

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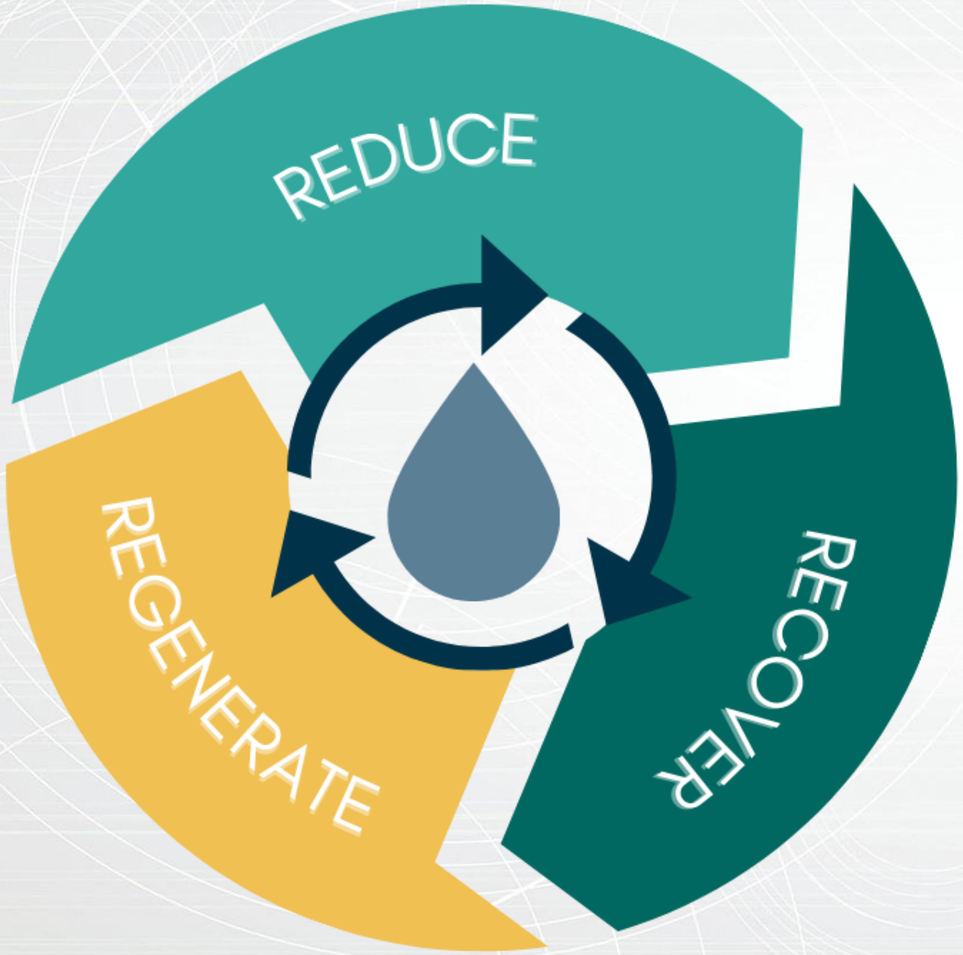
The Circular Water Economy provides the path forward



Economic growth

Job creation

Stronger environment

Greater resilience

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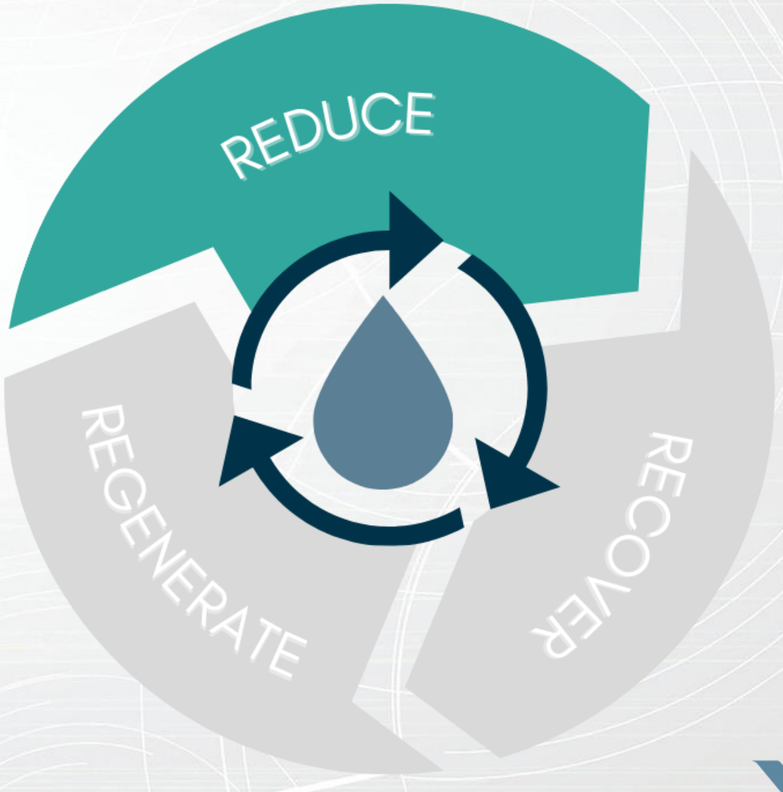
Reduce

Minimize waste in service delivery and enhance water system efficiency

Energy Efficiency - Reducing the energy used to provide water and wastewater services

Source Control - Preventing pollution at the source to reduce the costs of treatment

Stormwater Management - Investing in stormwater infrastructure to reduce financial impacts of natural disasters



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Milwaukee Metropolitan Sewerage District (MMSD)

MMSD implemented innovative strategies to reduce waste and enhance energy efficiency, aligning with its 2035 Vision to meet 100% of its energy needs with renewables

Economic Value:
Cost savings of ~$1.68 million annually from methane gas utilization

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Recover

Convert waste that cannot be eliminated into valuable resources

Water Reuse – Using treated wastewater for agriculture, irrigation, and municipal purposes

Nutrients– Extracting valuable resources like nitrogen and phosphorus

Energy – Harnessing energy from wastewater

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Loudoun Water

Loudoun Water in Virginia provided 815 million gallons of recycled water in 2023 for cooling data centers, conserving freshwater resources and reducing nutrient discharge into Potomac River and Chesapeake Bay.

Economic Value:
Cost savings of ~$3.26 million compared to potable water

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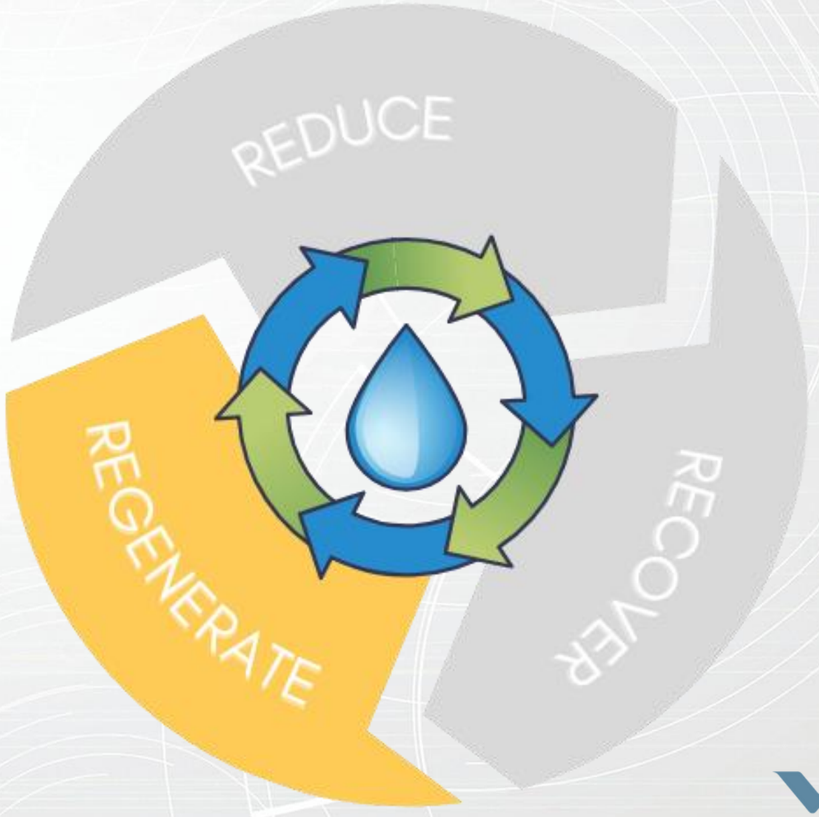
Regenerate

Strengthening nature while using and treating water

Water Resource Management - Ensuring a rational and resilient approach to using water

Watershed Restoration – Protecting and revitalizing water sources

Nature-Based Solutions - Providing water services while delivering co-benefits for the environment



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Clean Water Services

Clean Water Services Fernhill Natural Treatment Systems use engineered wetlands to naturally treat water, restore habitats, enhance biodiversity, and improve water quality in the Tualatin River.

Economic Value:
Cost savings of ~$18 million compared to traditional treatment system

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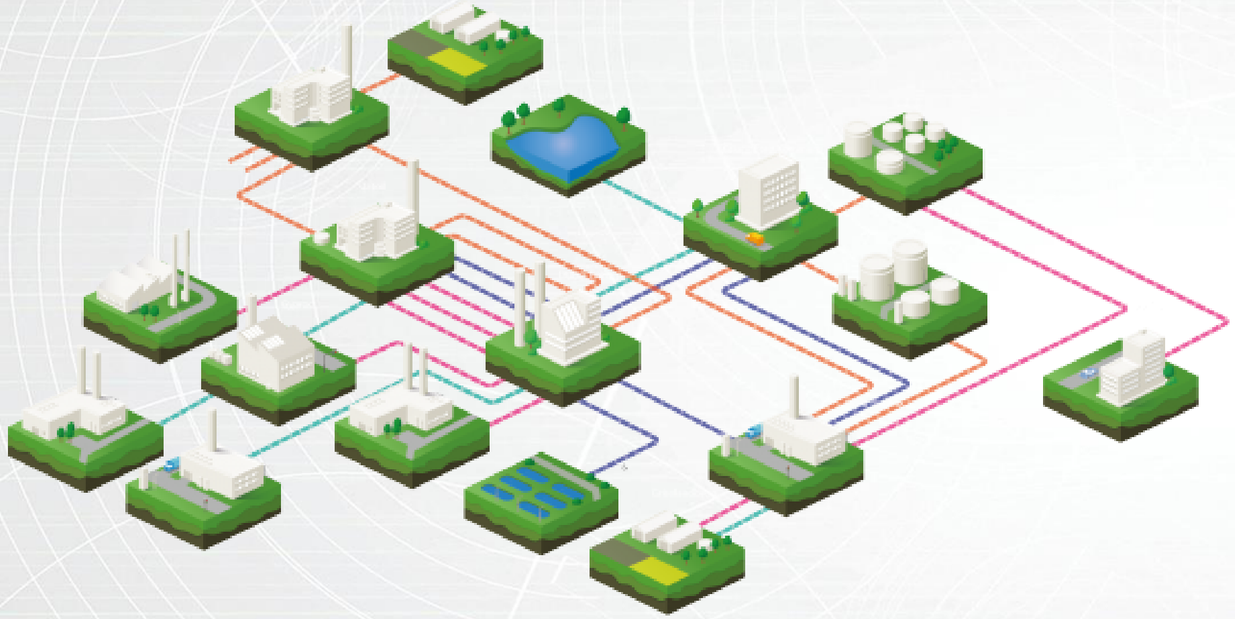
Kalundborg, the Platinum Standard for Circular Water



1 billion gallons of water saved

635,000 tons of greenhouse gases eliminated

100 gigawatt hours of energy saved

5,000 jobs created

Since inception, generated ~$370 million in savings

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Workshop Objectives

Goal 1

Identify concrete lessons in nutrient trading you can implement in your operation

Goal 2

Create multiple connections to follow up on implementation of a watershed-focused program

Goal 3

Help determine opportunities for national water quality efforts

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World Café Colors

Blue – Clean Water Focus (no restrictions)

Green – Farmers/Landowners

Pink – Nonprofits

Orange – Engineers/consultants

Yellow – Regulators/Legal

Purple – Water Resource Recovery Facilities (WRRFs)

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