

Title: Circular Water Economy (CWE) Position Statement

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BACKGROUND

The traditional “take-use-dispose” water model, currently utilized by utilities and industry across the globe, is unsustainable in the face of climate change, growing demand, and aging infrastructure. A Circular Water Economy focuses on reducing waste, recovering nutrients and energy, and regenerating nature within the water cycle. It promotes treating water as a renewable and restorable resource by using advanced technologies, reducing pollution, and closing water loops across industries (manufacturing, food and beverage, etc.). There are many possible approaches to advance circular water principles, including capturing biogas and heat, beneficially re-using biosolids, water reuse, graywater use for irrigation, green infrastructure for stormwater, and more. The Circular Water Economy transforms the “take-use-dispose” approach by minimizing waste, reclaiming value, optimizing existing resources, and restoring ecosystems through Reduce, Recover, Regenerate principles—a model central to WEF’s vision for resilient and inclusive water management.

Circular water approaches can unlock significant economic, environmental, and social benefits while reinforcing WEF’s goals of supporting utilities, protecting ecosystems, and fostering workforce and community capacity. Shifting to circular water can unlock up to **\$47 billion annually** in economic value for U.S. utilities and municipalities ([Valuation Report](#)). By advocating for and creating the conditions to allow circular water practices to be implemented, WEF leads the transition to circular water systems by convening stakeholders and championing resource efficiency, innovation, and integrated practices.

WEF calls on governments, utilities, industries, and communities to embrace the core framework of **Reduce, Recover, Regenerate** as foundational to modern water stewardship. By doing so, we can secure water resilience, create economic value, and foster environmental renewal for generations to come.

POSITION

As the Water Environment Federation (WEF), we believe embracing the Circular Water Economy through Reducing Waste, Recovering Nutrient and Energy, and Regenerating Nature is pivotal to sustainable water futures. We advocate for policies that incentivize the circular water framework, including:

1. Reduce: Optimize Water Use Across Systems

- Advance water conservation through public education, data-driven operations, smart metering, and proactive leak detection technologies.
- Drive water efficiency in municipal, industrial, and agricultural systems by integrating circular practices and source control measures that minimize extraction and waste.
- Reduce embedded energy and emissions by aligning water use with low-impact infrastructure and digital optimization.

2. Recover: Unlock Value from Water Streams

- Reframe wastewater as a resource, enabling the recovery of energy, nutrients, biosolids, water, and other byproducts of the water treatment process for reuse through integrated treatment systems.
- Accelerate resource recovery innovation, including extraction of critical minerals and materials from municipal and industrial effluents to support circular supply chains and policy goals.
- Support circular infrastructure investments that enable energy-neutral or energy-positive operations.

3. Regenerate: Rebuild Ecosystems and Water Cycles

- Regenerate natural systems through aquifer recharge, constructed wetlands, and green-blue infrastructure that enhances biodiversity and climate resilience.
- Close the nutrient loop by returning beneficial water and organic matter to ecosystems and agriculture in a safe, regulated manner.
- Enable hydrological balance by aligning built environments with natural water cycles, supporting long-term watershed health.

WEF's position also includes:

- **Government Incentives & Policy**
 - Promote funding, incentives, and regulations that foster collaboration and advance circular water solutions. Integrate water into broader climate and resource strategies by removing financial and policy barriers to innovation.
 - Encourage long-term, integrated planning practices that embed circular water economy principles into decision-making.
 - Share practical approaches that address multiple challenges—such as emerging contaminants, aging infrastructure, and water scarcity—through circular water practices.
- **Technology & Innovation**
 - Promote advanced treatment, smart water systems (IoT/AI), nutrient extraction, biogas plants, and blue-green infrastructure.
- **Cross-Sector Collaboration**
 - Foster partnerships across the different industries—food and beverage, energy, agriculture, manufacturing, transportation—to drive holistic and efficient circular systems.
 - Share and promote cost sharing mechanisms to advance circular water solutions.
- **Workforce Development**
 - Grow and empower a workforce capable of advancing circular water systems, resource recovery, and ecosystem integration.
 - Generate opportunities and jobs to advance innovation.
- **Affordability**
 - Ensure circular water solutions are accessible, affordable, and just—especially for underserved communities.
- **Public Engagement**
 - Educate, inform, and involve stakeholders to reshape perceptions around using water as a renewable and restorable resource—not waste—promoting support for circular strategies.

ALIGNMENT WITH THE WATER ENVIRONMENT FEDERATION'S STRATEGIC GOALS

Since its founding in 1928, the Water Environment Federation (WEF) and its members have protected public health and the environment. As a global water sector leader, our mission is to inspire the water community in pursuit of human and environmental well-being to create a life free of water challenges. By leading the transition to circular water systems, WEF supports resource efficiency, technological innovation, and holistic practices that strengthen the water sector. WEF's leadership in on circular water economy directly advances multiple [United Nations Sustainable Development Goals](#) particularly those centered on water, innovation, climate action, and partnerships. This position statement aligns with the following [WEF Strategic Goals](#):

- **Attract and develop a diverse and passionate water workforce**
- **Cultivate a purpose-driven community to sustainably solve water challenges for all.**
- **Lead the transformation to the Circular Water Economy**