UTS Institute for Sustainable Futures

WATER SERVICES ASSOCIATION OF AUSTRALIA

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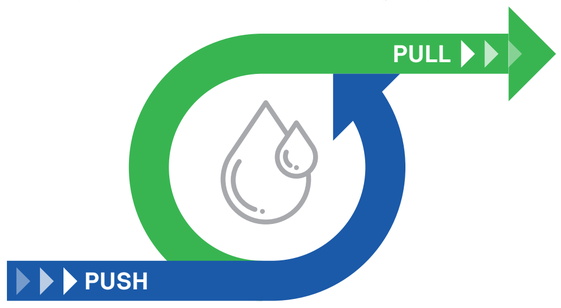
Shifting water utilities towards a circular economy

How can Australian and New Zealand water utilities transition from business-as-usual to a regenerative state?

Drivers for a circular economy approach

There is value in adopting a circular economy approach for integrated water servicing for utilities, society as a whole, and our natural environment.

Water utilities are moving towards a vision of integrated resource recovery due to a combination of expanding sustainability and liveability aspirations, operational challenges, network constraints and emerging contextual factors (explained further in the below diagram).



PUSH

- Environmental discharge limits
- Water resource constraints
- Energy efficiency and GHG mitigation
- Stormwater management

PULL

- Leadership in innovation
- Resource recovery opportunities
- Corporate and social responsibility
- Technology advancements for source treatment and recovery solutions

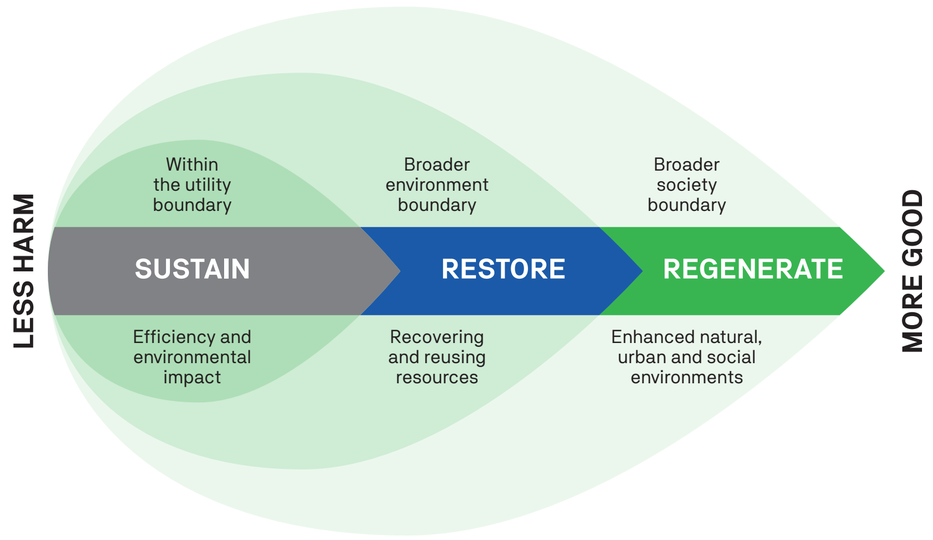
Transitioning to a regenerative state

As we push the planet beyond the planetary boundaries, sustaining is no longer enough, we need to consider restoring the material balance and then actively go further with regenerative actions to ensure the planet's health, resilience and ability to adapt.

Sustainable actions are at the energy neutral point of not doing any further damage, and are considered as resource efficiency initiatives that can and are currently being implemented within the control of water businesses.

Restorative solutions focus more on resource recovery with a broader material flow influence which may require new business models.

Moving towards the regenerative state, circular economy solutions seek to integrate a wider influence on social and environmental systems, with the aim of doing more good, not just doing less harm. It requires thinking, designing and doing things differently – possibly to include disruptive technologies and governance approaches that enhance our natural, urban and social environments.



Requirements for a circular economy shift

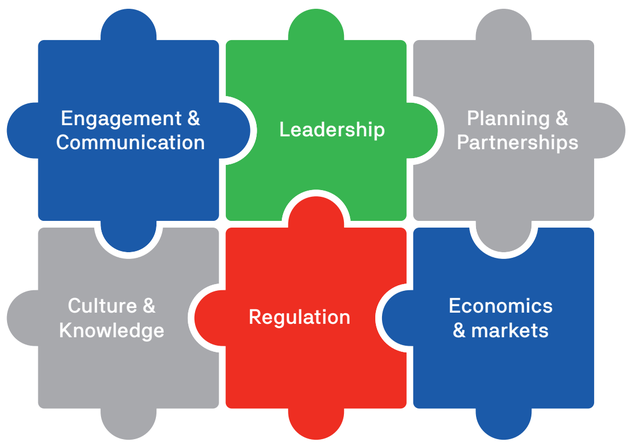
Strong leadership to drive the circular economy vision, incentivise the transition, and to support new servicing approaches, partnerships and business opportunities.

Partnerships and collaborative planning across internal divisions and external organisations so as to shift from siloed planning to integrated systems thinking.

Economic evaluation frameworks that incorporate the broader costs and benefits of circular economy planning approaches to support the business case of such initiatives.

An organisational culture that encourages learning and innovation without fear of failure.

Regulations, together with policy and institutional frameworks, that provide clarity on the expectations, funding and delivery responsibility for liveability-related and circular economy outcomes.



Strategic next steps

To support water utilities to embed circular economy principles and practices, four strategic directions have been set out by ISF and WSAA:

Building circular economy knowledge and sharing it across sectors, different levels of governance and with communities.

Establishing new business models that merge industries for water, energy, waste and agriculture, and are location specific. The focus should also be on other potential new products, addressing contaminants, and identifying new markets.

A framework to measure circular economy and collect supporting data consistently across the industry. Actions could include reviewing existing tools and potentially developing new tools.

Institutional transitioning, such as circular economy governance, pricing structures including circular economy principles, available funding, regulations and policy, and research and innovation.

"The transformation to a circular economy requires a multi-pronged and widespread cross-sector collaborative approach. In March 2022, WSAA released its Circular Economy Action Plan to help accelerate the transition – find it at www.wsaa.asn.au"

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More information

You can view the full report here: