



WATER SERVICES  
ASSOCIATION OF AUSTRALIA



# Blue x green = thriving

**A PROGRESS REPORT ON WATER'S ROLE  
FOR THRIVING COMMUNITIES**

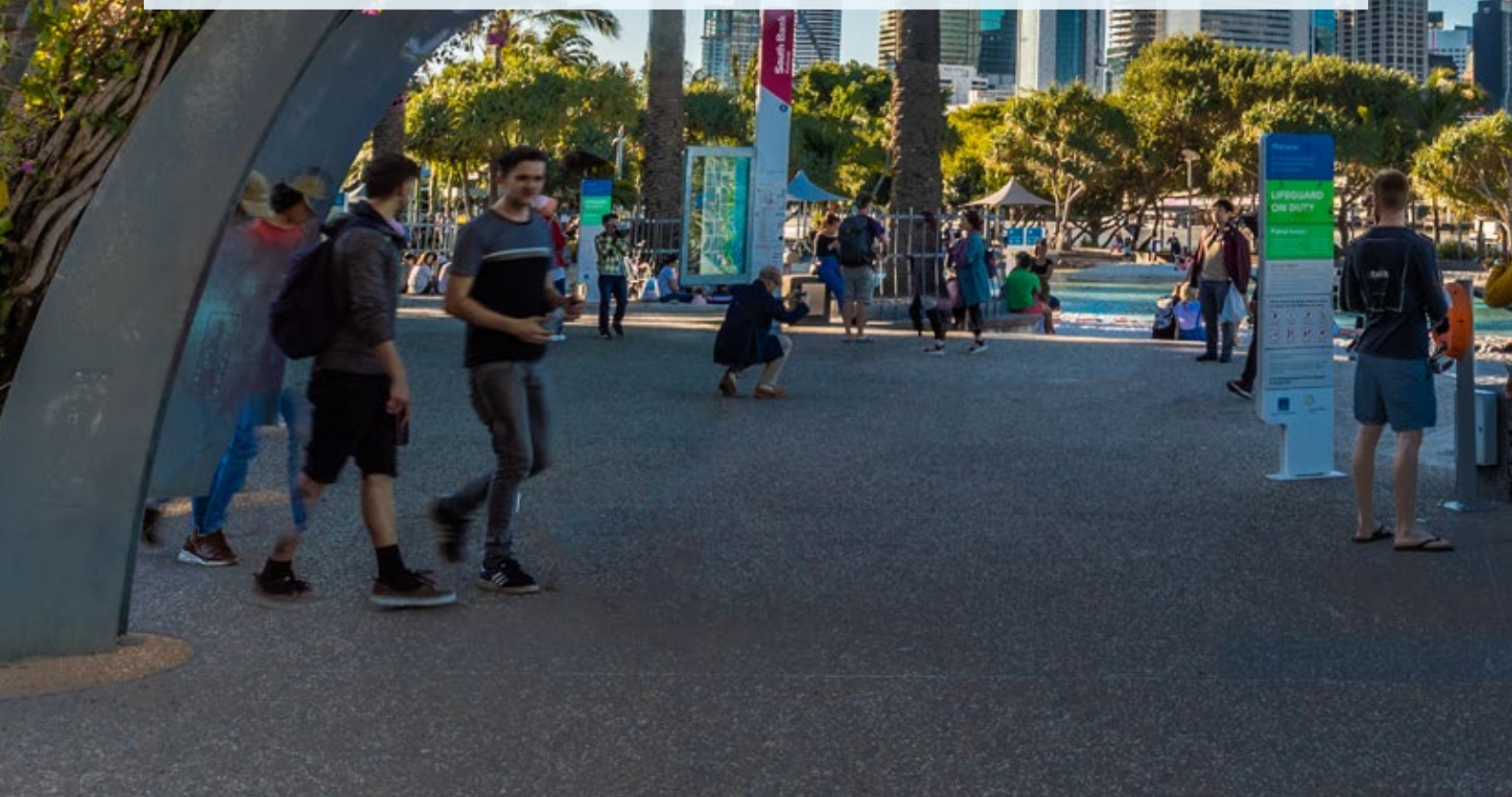
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## Acknowledgements

This progress report has been prepared in partnership with The Centre for International Economics and Marsden Jacob Associates. We would like to thank Ben McNair, The Centre for International Economics and Jeremy Cheesman, Marsden Jacob Associates for their research and expert input in writing this report. WSAA also appreciates the time and contributions of the steering committee members in helping to shape and guide the development of this report.

MARSDEN JACOB ASSOCIATES



# Blue x green = thriving

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FOR THRIVING COMMUNITIES**





**Adam Lovell**

EXECUTIVE  
DIRECTOR WSAA



## Foreword

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The Commonwealth Government has just released Australia's first Wellbeing Framework. It identifies indicators of what matters most to Australians and says: "Access to adequate, good quality water is vital for our environment, communities, economy and culture."

Water plays a critical role in liveability of urban communities: customers and communities recognise the benefits of clean drinking water, water for cultural and spiritual heritage, water for the environment and recreation, water for cooling and amenity including trees and green space. All of these things create liveable communities, communities that thrive.

Water is now being recognised as having an expanded role beyond drinking water, wastewater and stormwater. This expanding role embraces water as a critical enabler of innovation, sustainability, and economic productivity. As an industry, we are committed to harnessing its transformative power to shape a resilient, sustainable, and thriving future for all.

It is against this backdrop that I am pleased to introduce this progress report, a follow-up to our visionary **Blue+Green=Liveability** work.

This progress report aims to reset our path forward, advancing our understanding of water as a key enabler for thriving communities. It explores in greater detail how we can leverage our water resources in innovative ways to enhance both urban and regional liveability, stimulate economic productivity, and protect our precious ecosystems. It also showcases some of the innovative solutions and actions already being undertaken.

Our earlier work highlighted the value of liveability related benefits, including physical and mental health benefits, attributable to integrated water management (\$94 per person per year). Similarly in the UK, Vivid Economics estimate that Londoners avoid £950 million per year in health costs due to public green space and for every pound invested in green space there was a return of £27 in value. We know that there is a financial uplift in property value when new greenspace is provided nearby or waterways are enhanced and access to water is provided.



WSAA's own National Customer Perceptions survey in 2021 found strong support from customers across Australia and New Zealand to improve waterways and green public spaces with recycled water and indeed recently many water utilities around the country have found positive willingness to pay from customers for projects like re-naturalisation of concrete channels and irrigating parks and ovals with recycled water.

So what are some short term and tangible actions we can take to drive water's role in developing thriving communities?

There are the core fundamentals – like the recent Commonwealth Government investment in water quality for remote First Nations communities. No community can truly thrive without safe drinking water.

***Let's not forget the huge value we all placed on blue and green spaces during COVID – let's build on that value to ensure we have green, cooler and liveable spaces for all communities to thrive.***

We can do more to provide connection and access to water, like the Urban Plunge initiative in Sydney, or Greening the West in Melbourne.

Australia's first Wellbeing Framework acknowledged that more work in measuring water's contribution was needed:

"The wellbeing indicators could benefit from improved coverage of access to green and blue spaces for promoting health and recreation activity when the data limitations are addressed and improved measures become available. Access to blue and green spaces is also vital to mental and physical health."

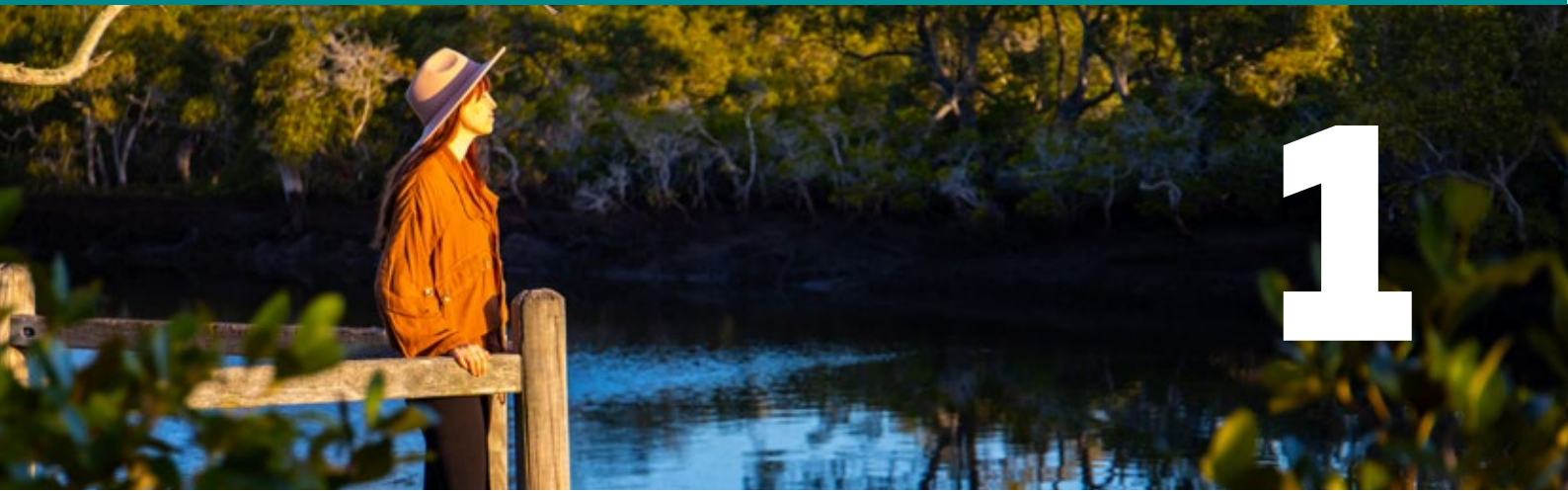
Clearly industry and government should work together to ensure the benefits of blue and green spaces are reflected in people's wellbeing.

In the next tranche of the Federal Government's Urban Rivers and Catchment Program, there should be equal focus on health benefits and environmental benefits. These objectives are not mutually exclusive and can be achieved synergistically with the right approach to funding.

And in the longer term? One of the untouched frontiers in urban water management has been the varied approach to managing stormwater. We know that a single waterway manager can more easily plan and deliver many benefits including urban cooling, provision of better air quality through more trees and, most importantly, balancing the use of stormwater, recycled water and other water supplies when they are available.

We've highlighted the benefits of Blue + Green, though these are currently largely opportunistic. Providing outcomes and actions within a modernised National Water Initiative will be a crucial step forward. Water has a significant role to play in maintaining and protecting the health and wellbeing of communities, but improvements and hard changes are needed, particularly with more frequent extreme weather events.

We look forward to working with all levels of Governments to better understand and promote water's contribution. This progress report invites all stakeholders, from policymakers and industry leaders to community members and researchers, to embrace the transformative role water plays in cities and regions as they seek to thrive.



# Introduction

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The community understands that clean, safe drinking water and wastewater management are fundamental to all cities and communities. However, when asked what contributes to liveable cities, people often cite transport, housing, education and health services.

Our report Blue+green=liveability was a landmark in highlighting water's contribution to the amenity and liveability of our cities. The report outlined the broader role of water including:

- Improved urban amenity through supporting green space and providing wetlands and waterways
- Health benefits arising from more amenable and accessible green space
- Improving waterway health by reducing the level/pollution in stormwater runoff or wastewater discharge
- Urban cooling benefits from water in the landscape and increased drought-proof irrigation.

However, there is more work to be done to understand, promote and deliver the many benefits that water contributes. For example, the Commonwealth Government's first Wellbeing Framework has acknowledged that more work in measuring water's contribution was needed:

*“The healthy indicators could benefit from improved coverage of access to green and blue spaces for promoting health and recreation activity when the data limitations are addressed and improved measures become available. Access to blue and green spaces is also vital to mental and physical health.”*

Since the release of Blue+green=liveability report, water's role has only been further reinforced. This has occurred in three ways.

- 1 COVID-19 has shown the importance of local, accessible open space for recreation and mental health.
- 2 We have developed further understanding of the significant value that people place on water's contribution (see box 1 and 2).
- 3 The water industry has embarked on a number of exciting projects to deliver blue and green infrastructure. This report showcases some of these innovative actions.

The experience of COVID-19 and climate change underscore the necessity to enhance the application and advancement of water's role in liveability. Those with access to green spaces reaped benefits in terms of physical activity, social interaction, and stress reduction, leading to a surge in industries prioritising liveability in their agendas.

In addition, the reality of increasing frequency and severity of extreme weather events further underlines the role of blue and green infrastructure in alleviating urban heat island effects, drought-proofing and mitigating flooding risks.

Significant progress on liveability outcomes has been made by some utilities and governments. Research advancements, such as the Interim Framework for Valuing Green Infrastructure and Public Spaces, released by the NSW Department of Planning and Environment in 2022, aim to further quantify liveability benefits.

The rise in sustainable finance products and the allure of Environment, Social, and Governance (ESG) metrics for investors opens up exciting opportunities for the water sector to secure alternative finance for liveability outcomes.

Indeed, this report suggests that the language and discussion around the concept of liveability itself should evolve. It is increasingly apparent that what is at stake is water's role in supporting thriving communities.

The concept of thriving builds upon the foundational principles of liveability, and equips the industry with a framework to harmonise circular economy opportunities while addressing climate change challenges amidst an increasingly uncertain future.

#### BOX 1

### London's public green space provides public health *and* financial benefit



**£91BN**

GROSS ASSET VALUE



**£5BN/YR**

SERVICE VALUE



**£950M/YR**

HEALTH COSTS SAVED



**£926M/YR**

RECREATIONAL  
ACTIVITIES VALUE

Source: Natural Capital Accounts for Public Green Space in London, Vivid Economics 2017

#### BOX 2

### Customers and communities demand action and are willing to support financial investments

Willingness to contribute in the next decade



**\$1BN**

REGENERATING  
NATURAL CAPITAL THAT  
ENHANCES BIODIVERSITY



**\$100M**

LENGTH OF WATERWAYS  
IN GOOD HEALTH IN  
30 YEARS



**\$500M**

DRIVING CIRCULAR  
ECONOMY OUTCOMES  
ON WASTE

Source: Willingness to pay for carbon abatement and co-benefits in the Australian urban water sector, WSAA 2022

# From city shaping to future shaping

## The transformative role of water

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Water has always played a crucial role in shaping cities and communities throughout history. However, its significance goes beyond mere sustenance and utility.

There is growing recognition of the transformative power of water as a catalyst for urban development, enhancing liveability and contributing to a thriving future. The WSAA Blue+Green=Liveability report sheds light on the critical role of water in shaping cities and highlights the need for sustainable water management practices to ensure a prosperous and sustainable future.

Following that foundational work, the next evolution is to explore the transformative role of water beyond city shaping, and its evolution towards liveability, and its potential for future shaping.



### City shaping A new challenge

As providers of safe, affordable drinking water, wastewater, and drainage services, the water industry has been key in shaping liveable cities. However, with aging water infrastructure across many Australian and New Zealand cities nearing its end of life, and facing substantial replacement costs, there's a need for innovative, integrated approaches to water services. The COVID-19 pandemic underscored the importance of integrating blue and green infrastructures into urban planning, providing significant social and health benefits. As we navigate an uncertain future, urbanisation and climate change challenges must be leveraged as catalysts for disruptive, resource-efficient transformations, to ensure the health and sustainability of our cities.



### Evolution of liveability A new paradigm

Well-designed water infrastructure, including water treatment plants, stormwater management systems, and water-sensitive urban design, can improve water quality, mitigate flood risks, and create vibrant public spaces. Access to clean water, recreational water bodies, and waterfront development further enhance the liveability of cities, promoting physical and mental well-being. This has been set as a minimum standard and the evolution of liveability is needed to provide a vision for how we support and respond when our communities and cities are faced with a polycrisis now and into the future.



### Thriving future A new focus

As cities evolve, the transformative role of water expands beyond liveability, becoming a key driver of innovation, productivity, and prosperity. It is a fundamental part of the complex systems that underpin our economies, ecologies, and societies. As such, the role water to deliver beyond liveability and enable, empower and inspire a thriving future is the renewed focus for the water industry. A thriving future is reliant on protective factors for both human and environmental health, which involves approaches that foster place-based design and integrated infrastructure systems that deliver multiple benefits. By adopting these approaches, cities can not only thrive in the face of water challenges but also contribute to a sustainable future.



## Embracing water for thriving communities

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We maintain our position in the necessity of bold, innovative, and integrated approaches to planning and service delivery. These approaches are pivotal to preserving and enhancing the liveability and prosperity of our communities.

This, however, extends beyond just blue and green infrastructure. We find that decisions regarding water servicing are increasingly encompassing multiple benefits. This includes considerations on circular economy to decentralised infrastructure initiatives. As a result, the degree of planning integration needed to actualise these benefits for the community has become more imperative than ever.

Our focus is based on a more purposeful approach to the initial pathways for the industry to achieve liveability. They include the following mission areas:

Our mission is to **revolutionise how we view and manage our resources** by harnessing the whole water cycle, fostering a sustainable and resilient approach to water usage that balances the needs of both people and the planet.

We are committed to **pioneering an integrated approach to planning**, breaking down silos and fostering cross-disciplinary collaboration to create holistic solutions that address the multifaceted challenges of our cities and communities

We aspire to **redefine success by measuring liveability benefits**, ensuring that our innovations lead to tangible improvements in the quality of life and wellbeing of all members of our community

We envision a future where **blue and green infrastructure** are valued as fundamental social infrastructure, and we are dedicated to securing funding and support to transform this vision into reality, enhancing our environment while enriching our communities.

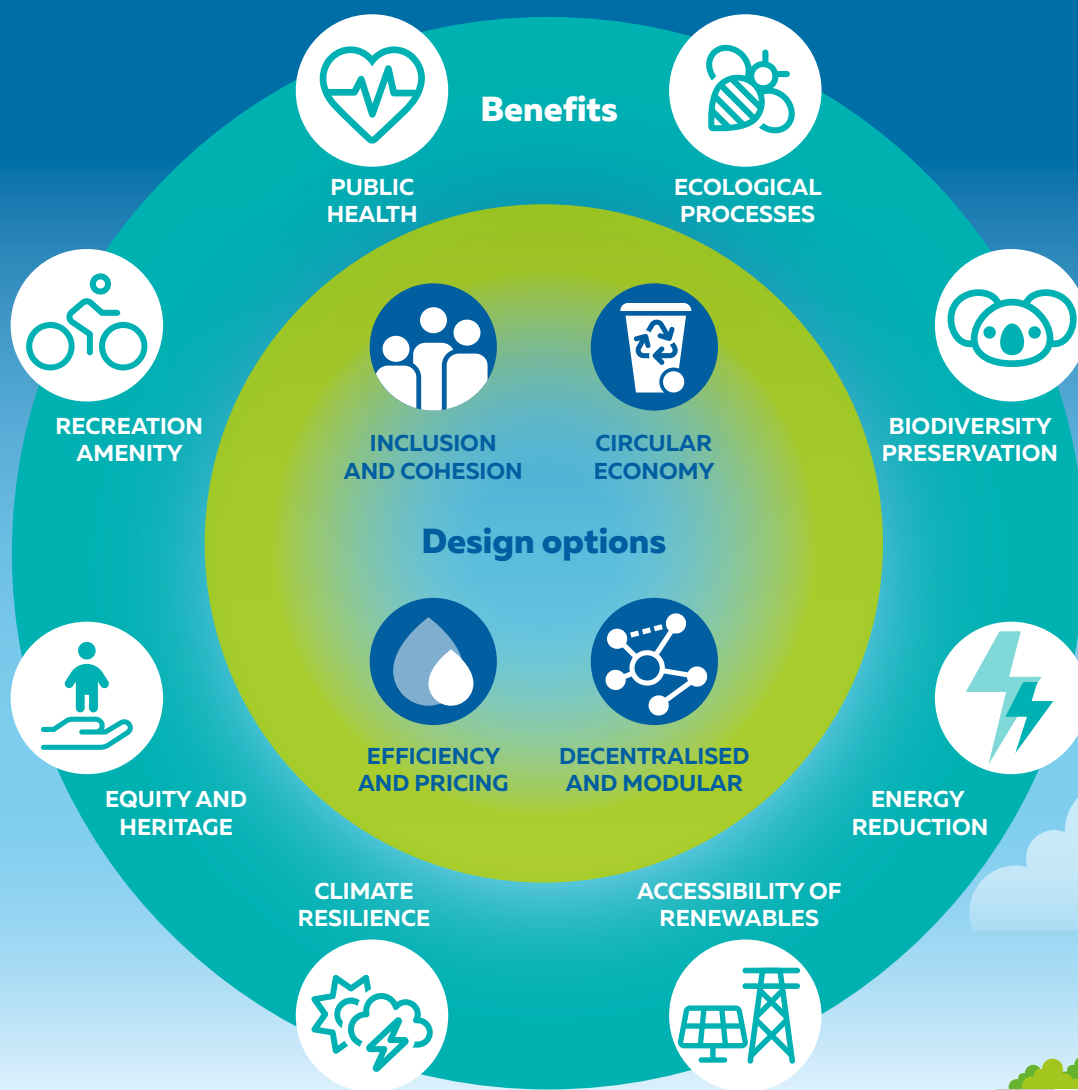
To implement these approaches, the water industry is committed to a unified purpose in redoubling its capacity and intent to partner and collaborate with customer-citizens, governments, and other sectors to meet community needs and opportunities.

We call on Australian and New Zealand governments of all levels to embrace the critical role and opportunities blue and green infrastructure plays in delivering thriving communities.



# Progressing from liveability to thriving

## DESIGN OPTIONS AND ASSOCIATED BENEFITS



# ROLE OF URBAN WATER

## Liveability



## Thriving

### DIRECT DELIVERY



Provision of key water and sanitation services



Protects environmental values and biodiversity



Provides for the delivery of transformative, hybrid systems that are modular, adaptive and decentralised



Embraces First Nation values



Provides access to blue and green spaces with opportunities for active, healthy lifestyles and promotion of non-motorised transport



Resilient to climate shocks and future challenges



Nexus approach to resource optimisation yields efficiency, regenerative benefits

### INFLUENCE AND SUPPORT



Supportive of preventative health



Provides suitable and affordable housing



Supports economic development and employment opportunities



Capable, entrepreneurial state drives significant innovation growth



Promotes public safety



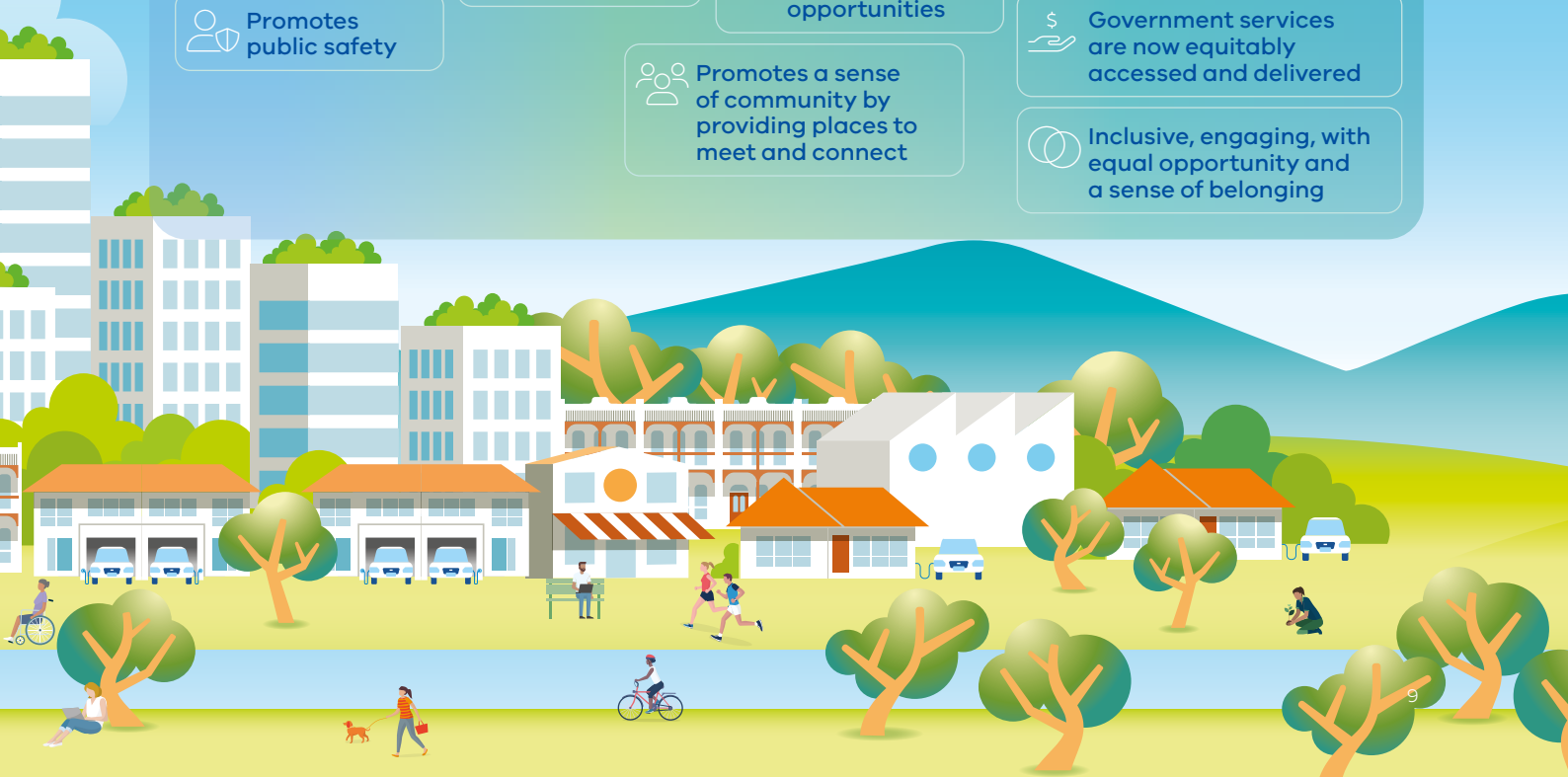
Government services are now equitably accessed and delivered



Promotes a sense of community by providing places to meet and connect



Inclusive, engaging, with equal opportunity and a sense of belonging



## Key recommendations across each mission area

MISSION AREA	FEDERAL GOVERNMENT	STATE GOVERNMENT	WATER UTILITIES
<b>Enriching communities through blue and green infrastructure</b>	Nationally consistent principles for developer charges will help deliver cool green cities and help defray growth costs	<p>Review regulatory models for delivering water services to embed liveable and thriving outcomes. The review should provide objectives for frameworks that enable funding for outcomes over and above minimum service standards supported by net economic benefits</p> <p>Provide guidance on the required standard of evidence of net benefits to the community from liveability-enhancing projects for assurance processes and pricing determinations</p>	Provide economic regulators with evidence-driven plans and data to support delivery of liveability and thriving outcomes, and demonstrate these to the community
<b>Redefining success through liveability metrics</b>	Incorporation of water-related contributions to health and well-being value metrics in delivery of overall of life satisfaction frameworks	Establish state/ territory-based reporting requirements for liveability outcomes, including the role of water enabled blue and green infrastructure	<p>Conduct research into community preferences, including willingness to pay, for thriving outcomes, and an ability to articulate the delivery of multiple benefits</p> <p>Measure and report, through the development of a benefits realisation tool on water-enabled liveability and thriving outcomes</p>
<b>Pioneering integrated planning for thriving communities</b>	<p>Provide a national urban planning framework for implementing blue and green grids, based on Integrated Water Management principles</p> <p>Support a whole-of-water cycle management approach for water corporations across cities and regions to better deliver integrated planning</p>	<p>Enable better delivery of community benefits by transitioning responsibility of stormwater management to water utilities and corporations in a way that is sustainable</p> <p>Establish planning forums with water utilities and corporations, to be involved with growth areas development, urban planning for inclusion of integrated water management opportunities</p> <p>Embed integrated infrastructure, liveability-enhancing planning approaches in state planning codes, policies, strategies and schemes to deliver liveability and thriving benefits</p>	<p>Proactively engage in all stages of land-use planning processes, including planning reviews</p> <p>Utilise the ready reckoner tool from the WSAA Health benefits from water centric liveable communities in making the case for integrating water into planning initiatives</p>

**MISSION AREA**

**Revolutionising resource management for a sustainable future**

**FEDERAL GOVERNMENT**

All options on the table must be the guiding principle within the NWI. Principles must include engaging local communities, ability for evidence-based decision making, and place-based, sustainable delivery. The Australian Drinking Water Guidelines, must better reflect purified recycled water as an option of source water and provide national regulatory guidance and validation protocols

Seek support from the Circular Economy Ministerial Advisory Group to identify and seed innovative circular economy approaches that enhance the delivery of blue and green infrastructure

Guide consistency on policy and applications of circular economy opportunities to realise benefits at scale across states and territories

**STATE GOVERNMENT**

Establish policy and support strategies that enables all options, and fit-for-purpose water use to achieve water security to sustain green and blue infrastructure

Support a whole of government approach to circular economy initiatives, by supporting partnerships with water industry

**WATER UTILITIES**

Build the capability of their people to assess and design options with multiple benefits through integrated planning and delivery

Take a no-opportunity-wasted approach to considering options for creating value through resource management

Find and seed innovative circular economy approaches that can scale to be commercially sustainable

Support a review of the water industry standards to ensure they support a broader range of water sources and enable circular economy initiatives



# A thriving future built on liveable, sustainable and productive cities and regions as a new focus

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Australia and New Zealand, like the rest of the world, faces increasing demands and challenges in delivering infrastructure to enhance community well-being. Here, we delineate the nuances between 'liveability' and 'thriving' to encourage the industry to elevate its ambitions. We also explore how the water industry leverages its role to deliver multiple benefits.

## What is liveability?

A liveable city or region is one that meets the social, environmental, and economic needs of its people. It also addresses community values and preferences for amenity, wellbeing and a sense of place. To be long lasting and resilient a liveable city or region must consider the needs of future generations to understand and respond to shocks and long-term change.

### Liveability outcomes

- Provides essential services that protect and promote public health and wellbeing
- Provides suitable and affordable housing
- Supports economic development and employment opportunities
- Protects environmental values and biodiversity
- Embraces indigenous values
- Provides opportunities for active, healthy lifestyles and promotes walking and cycling
- Provides access to nature and open space
- Promotes public safety
- Is resilient to climate change and future challenges and shocks
- Provides key services (including transport, health, water and education)
- Promotes a sense of community by providing places to meet and connect

## What is thriving?

A "thriving" city or state represents an advanced state of a "liveability. Both are stages in the development of a community but exist on different levels of progression, with a thriving city or region considered more advanced and well-rounded in multiple aspects of community living.

As such, a thriving city or region achieves the needs of its people while equally setting up the success of future generations through a unifying purpose. It fosters civic engagement, well-being, and regenerative practices, and prioritises environmental health. Outcomes are achieved based on enhanced partnerships which foster innovation and adaptability, ensuring prosperity through net positive productivity.

### Thriving outcomes

- Provides for the delivery of transformative, hybrid systems that are modular, adaptive and decentralised.
- Delivers a nexus approach to resource optimisation, yields gains in efficiency and regenerative benefits.
- Provides for collaborative, integrated planning and delivery of infrastructure.
- Embraces a capable, entrepreneurial state to drive significant innovation growth.
- Drives sustainable productivity, resulting in increased prosperity.
- Provides government services that are equitable accessed and delivered
- Is inclusive, engaging, with equal opportunity and a sense of belonging.

## Blue infrastructure

Beaches and waterways, such as harbours and rivers, and facilities that support them, including foreshores, surf lifesaving and water recreation clubs, jetties and wharves

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## Green infrastructure

The range of natural and built landscape assets which incorporate natural vegetation. It includes areas of public and private lands such as parks, fields, verges, rooftop gardens, green façades, walking and cycling tracks, street trees and backyards

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INFRASTRUCTURE AUSTRALIA

## Net positive

Driving a positive impact on society by producing economic value, stimulating productivity, and enhancing social and environmental outcomes

### Blue and green infrastructure improve liveability by:

Providing recreation and supporting active, healthy lifestyles

Improving waterway health and biodiversity,

Cooling the urban landscape, which mitigates human health risks and reduces energy usage

Mitigating flood risks

Improving amenity

In some cases, enhancing affordability by avoiding costs in the water and wastewater systems.

### Water utilities have unique advantages in delivering this infrastructure

They cover large geographic areas enabling a whole-of-catchment approach that coordinates across council boundaries

They can coordinate stakeholder groups across diverse sectors

Environmental and social objectives are already embedded due to their ongoing public ownership

Their capacity for and experience with community engagement has increased considerably over the past 5-10 years

Over the past five years many water utilities across Australia have recognised that they can, and do, contribute towards liveability in ways other than just providing blue and green infrastructure and core services

## How the water industry can leverage its role to provide multiple benefits beyond blue+green

Water utilities serve as stewards of one of the planet’s most circular resources, in addition to holding significant responsibilities in waste, energy, and material management. Often second only to State or Territory Governments in terms of land ownership and management they are long term stewards of assets developed over many generations and enjoy strong, trust-based relationships with their customers.

Water utilities are often the unsung sustainability champions in communities. By leveraging their assets and services in innovative ways they extend liveability beyond blue and green infrastructure. They unlock value through initiatives such as renewable energy generation, waste management, and resource recovery. Additionally, they activate and invest in the land they own or operate, delivering services that promote biodiversity, carbon sequestration, and more.

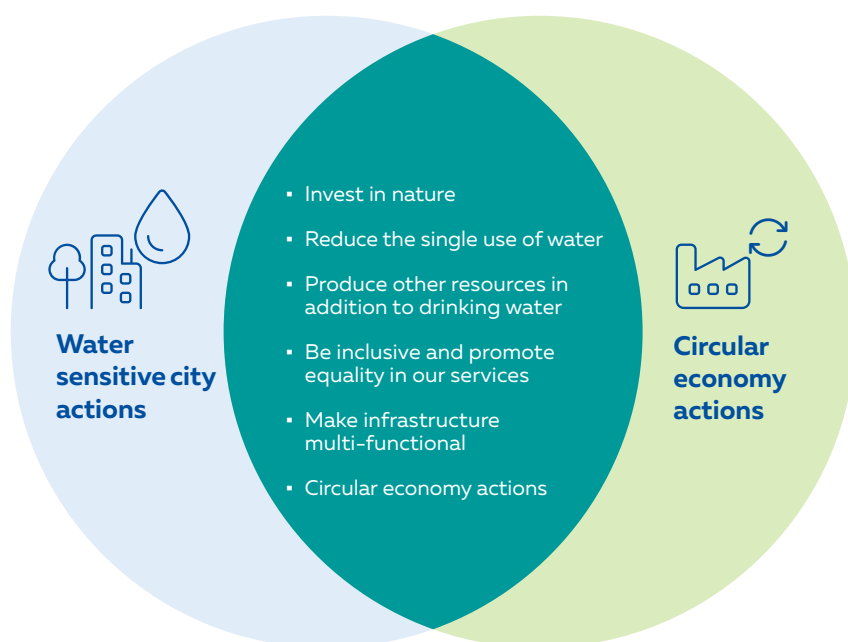
Guiding the industry’s shift towards a more circular economy, the Water Services Association of Australia’s (WSAA) 2022 *Circular Economy Action Plan* and our *Transition*, alongside our 2021 *Towards Resilience* report, provide specific steps for acceleration.

Recognising that our journey didn’t begin from a standstill, these reports underscore that many of our standard practices, such as recycling water for environmental flows, applying biosolids to land, and restoring waterway environments, already embody circular principles.

Simultaneously, these reports acknowledge the hurdles water utilities must overcome to enhance liveability beyond traditional blue and green infrastructure.

A new wave of liveability reform echoes many of the challenges and opportunities we faced early on in our quest for enhanced liveability through blue and green infrastructure. However, having developed effective strategies over time, the industry is poised to redeploy and broaden these approaches, exploring novel ways of delivering beyond liveability.

### How multiple benefits attributed to both circular economy and water sensitive design can be delivered by the water industry



Adapted from Frameworks for sustainable urban water management, WSAA/WSCA, 2022



## Progress on initial pathways

To assess progress on our path of liveability, the Centre for International Economics and Marsden Jacob Associates engaged with water businesses across Australia in mid-2023.

**TABLE 1 Consultation findings**

	<b>HARNESSING THE WHOLE WATER CYCLE</b>	<b>INTEGRATED APPROACH TO PLANNING</b>	<b>MEASURING BENEFITS</b>	<b>FUNDING BLUE AND GREEN INFRASTRUCTURE</b>
<b>Government leadership</b>	<ul style="list-style-type: none"> <li>● Ensure all water supply options are on the table</li> </ul>	<ul style="list-style-type: none"> <li>● Develop governance principles and water plans that reflect the importance of water to liveability</li> <li>● Clearly state the role of urban water utilities to contribute to liveability outcomes</li> </ul>	<ul style="list-style-type: none"> <li>● Implement policies and methodologies that enable effective evaluation of liveability outcomes</li> </ul>	<ul style="list-style-type: none"> <li>● Allocate funding, resources and accountability within government to liveability outcomes in the same way as other social infrastructure such as health and education</li> </ul>
<b>Urban water industry</b>	<ul style="list-style-type: none"> <li>● Evaluate the cost effectiveness of all water supply options available for a particular city or region</li> <li>● Undertake community engagement for water supply options</li> </ul>	<ul style="list-style-type: none"> <li>● Strengthen our capacity to partner and collaborate with other sectors to deliver green and blue infrastructure</li> <li>● Continue to engage with communities to understand their future needs</li> </ul>	<ul style="list-style-type: none"> <li>● Continue to measure the financial, social and environmental value of water-enabled liveability outcomes</li> <li>● Continue to engage with customers to ensure we understand their preferences and willingness to pay</li> </ul>	<ul style="list-style-type: none"> <li>● Identify funding arrangement opportunities that consider green and blue infrastructure as social infrastructure. For example, public-private partnerships, contributions from beneficiary stakeholders and direct government funding</li> </ul>
<b>Collaborating partners</b>	<ul style="list-style-type: none"> <li>● Support the water industry in engagement with communities to ensure all water supply options are on the table</li> </ul>	<ul style="list-style-type: none"> <li>● Form a coalition of key players as a united voice for enhancing liveability</li> <li>● Develop joint principles to clarify governance, roles and responsibilities for collaborative programs</li> </ul>	<ul style="list-style-type: none"> <li>● Commit to collaborating and sharing best practice information and data</li> </ul>	

● Cause for celebration, some transformational   ● Gives pause for thought   ● Remove impediments to reform

## Harnessing the whole water cycle

The Blue+Green=Liveability report recommended that governments ensure all water supply options are on the table and water utilities undertake community engagement and evaluate the cost effectiveness of all water supply options available for a particular city or region.

Water planning processes across Australia have increasingly been including alternative water source options, such as stormwater harvesting and purified recycled water for drinking. However, we heard purified recycled water for drinking remains subject to a policy ban in a small number of jurisdictions. We also heard many of the jurisdictions that have built alternative water supply systems have limited these systems to pilot and small-scale projects.

Most Australian water utilities have engaged with their communities about customer preferences for alternative water sources.

Across Australia, utilities have generally found customers are more willing to accept purified recycled water for drinking as an option once they understand the wastewater would be treated to a high standard, returned to water storages and mixed with large volumes of rainwater, and treated again.



### More Trees for a Cooler, Greener West

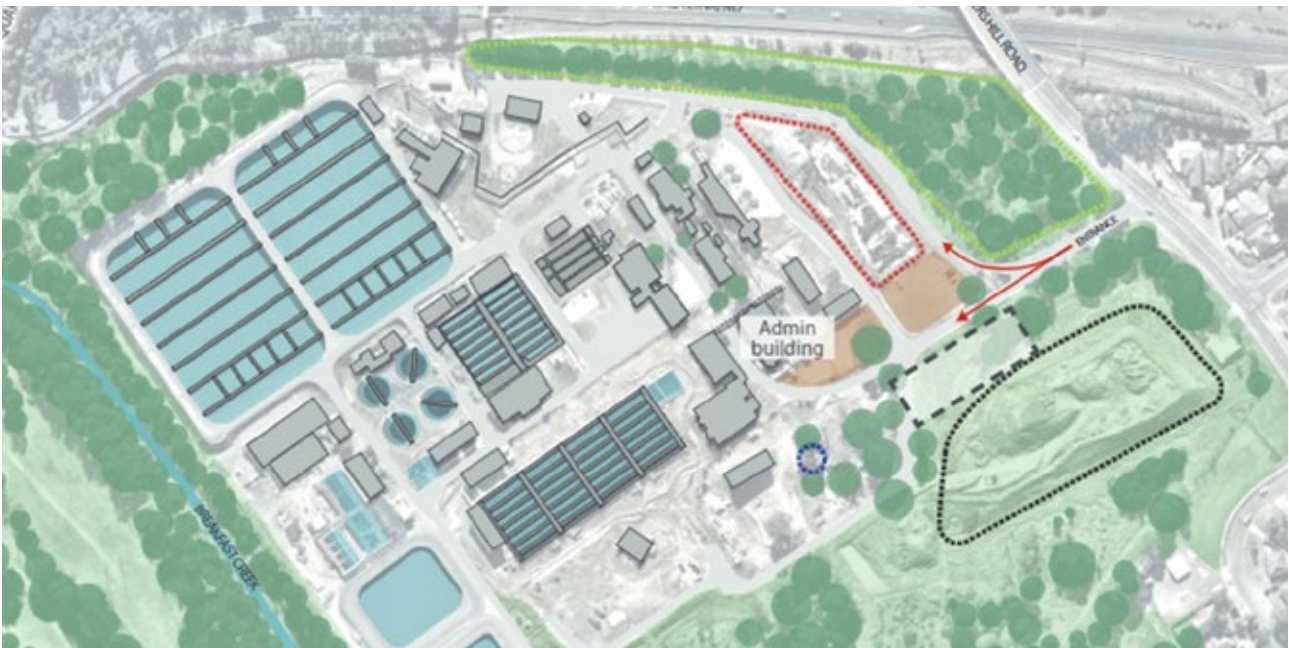
Greater Western Water and Melbourne Water along with other delivery partners are part of the Victorian Government's **More Trees for a Cooler, Greener West** program that seeks to plant 500,000 trees in Melbourne's west - creating cooler spaces for communities in the western suburbs to enjoy for generations to come.

The program will provide more shade and green spaces, drive down pollution reduce the impact of urban heat and improve air quality. To date, 215,000 trees have been planted. In Phase 3, more than 130,000 trees will be planted across Melbourne's west in 2023-24.

Customers are more willing to accept purified recycled drinking water as a supply source when they learn some Australian cities are already bolstering their traditional rainfall fed supply with purified recycled water, and that purified recycled water is part of the drinking supply for cities like [Singapore](#) and [London](#).

In some jurisdictions where stormwater harvesting and recycling projects aren't happening, it's because appropriate due diligence processes are happening, and these options have been found to be less preferred to other options on technical or cost grounds – consistent with what we observed in our [All Options On the Table](#) report findings on the costs of alternative supply sources.

In other jurisdictions, we heard of cases where options analysis had clearly identified alternative water sources as being part of the preferred supply mix, but that these projects did not progress past the planning stage because ownership around the decisions on which options to implement was transferred to other areas of water businesses that had less of an integrated water focus, or a greater risk-aversion to adopting new (but already proven) alternative water sources at scale.



## Quakers Hill Purified Recycled Water Demonstration Plant

The Quakers Hill Water Recycling Plant (WRP) collects and treats wastewater as well as supplies recycled water to the Quakers Hill catchment area in Sydney.

Sydney Water is building a Purified Recycled Water Demonstration Plant and a visitor centre at the site. The plant will treat filtered wastewater from the existing Quakers Hill WRP, using proven technology to produce high quality recycled water. The water will not be added to Sydney drinking supply, but rather used as a testing facility as well as an opportunity to educate the public on Purified Recycled Water.



## Blue Heart Sunshine Coast

The Blue Heart project is a collaborative wetland restoration project between Unitywater, Sunshine Coast Council and the Queensland Government's Department of Environment and Science.

It focuses on restoring more than 5,000 hectares of natural floodplains in the Maroochy River catchment. As part of the Blue Heart project, Unitywater is restoring former cane land as a wetland. This wetland removes nutrients and sediments from the river, which improves water quality and overall river health. Unitywater can offset the amount of nutrients removed by these wetlands against the nutrients discharged to the Maroochy River following treatment of the local community's sewage. The wetland includes a 1.7km (return) trail walk and bird viewing hide.



## Urban Plunge

Inspired by an international push to reconnect swimmers with urban waterways, Sydney Water's Urban Plunge vision aims to help councils establish more swimmable sites in the rivers, creeks, lakes and harbour inlets of Greater Sydney's cities and suburbs – in areas previously considered unsuitable for swimming.

All potential locations are rigorously assessed to make sure they are suitable. Councils are provided with reliably sourced data, monitoring, support and advice to help them establish new swim sites in their local area.

## Integrated approach to planning

The Blue+Green=Liveability report recommended that governments develop governance principles and water plans that reflect the importance of water to liveability and clearly state the role of urban water utilities to contribute to liveability outcomes.

It also recommended that water utilities strengthen their capacity to partner and collaborate with other sectors to deliver green and blue infrastructure.

Our discussions with water businesses and others across Australia shows that statements of obligations, water plans, and other heads of power for water utilities often, but don't always, embed liveability considerations as a fundamental component.

Having this head of power gives water businesses a mandate to consider investments in liveability. But we heard repeatedly that the lack of specific performance measures or target outcomes creates uncertainty around how far water businesses' mandates extend.

Lack of clarity around objectives and obligations makes it hard for water utilities to (1) establish what they need to deliver and (2) justify investments to regulators and their own executive/Board of Directors.

Across Australia, planning integration remains problematic at different points for different utilities. For some there is a lack of integration internally, with liveability considerations confined to a silo that is disconnected from broader asset management decision making. Although the expertise required to develop and assess liveability projects and interventions is being developed by utilities, in many cases this is not being effectively deployed where it may have a positive impact.



### Re-imagining Your Moonee Ponds Creek

The Chain of Ponds Collaboration, empowered by a \$5 million grant from the Building Works program post the COVID-19 pandemic, aims to revitalise a 400-meter section of the creek in Strathmore/Oak Park.

In collaboration with stakeholders like Melbourne Water, DEECA, Merri-bek Council, and Moonee Valley Council, the project focuses on enhancing pedestrian access, community connectivity, introducing recreational facilities, and creating a linear park alongside the creek. Envisioned as a holistic community venture, it promises multifaceted benefits ranging from social interaction and job creation to environmental preservation, setting a blueprint for future creek transformation initiatives.

Other utilities are subject to external constraints on integrated planning. Some jurisdictions have integrated water and land use planning to a degree, but in many cases:

- Utilities are still coming late to the table because optioneering around water and wastewater stormwater integrated servicing takes too long and planners move on and close off options
- Integrated approaches established during the strategic planning stage fall away as specific projects progress through gateways and people retreat to silos or make risk-averse decisions
- Utilities are involved in initial planning but not planning reviews where lessons have been learned and plans are modified for the rest of the development
- Utilities are still missing key conversations due to being considered outside of core government.

Where integrated planning has been effectively implemented, there has been strong buy in and leadership from government leading planning decisions, which is critical to the success to this model.

Collaboration with other sectors occurs during strategic planning but more can be done during project identification and delivery stages. Victoria's integrated water management forums are an example of potential replication.

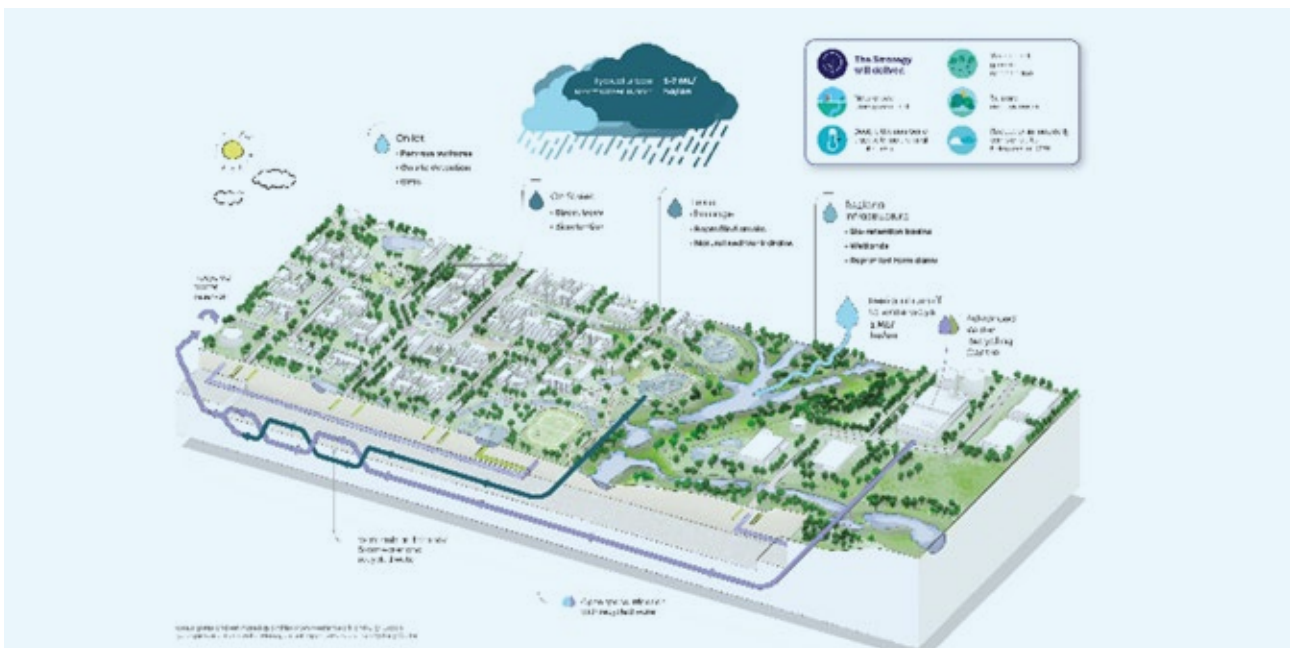
## Integrated water management forums

From 2017, Integrated Water Management Forums were established across Victoria to identify, prioritise and oversee the implementation of collaborative water opportunities.

The Forums bring together all organisations with an interest in water cycle, recognising that each has an important role to play in the management of our most vital resource.

The Forums produced a Strategic Directions Statement that captures the regional context, shared vision and water-related outcomes for each of the Forum areas across metropolitan Melbourne and regional Victoria. Each Strategic Directions Statement includes a list of integrated water management opportunities collaboratively developed by the Forum to bring local community views, values and priorities into practice through integrated water management.

Since 2018 the Victorian Government has provided \$65 million in funding for 165 priority IWM projects across the state that will improve regional water security, enhance waterway and landscape health, and build greater community connections to the environment.



## Mamre Road Precinct stormwater scheme

On 25 March 2022, the NSW Government announced the appointment of Sydney Water as the trunk drainage authority for stormwater in the Western Sydney Aerotropolis, including the Mamre Road Precinct.

Sydney Water's plan is for stormwater to flow into natural water channels and wetlands instead of relying on buried concrete pipes or drains. The stormwater will then be collected in wetlands harvesting, treatment and reuse as recycled water for irrigation of parks, flushing of toilets and a cooler, greener, Western Parkland City. The Aerotropolis integrated water system will be the largest stormwater harvesting scheme in Australia. Sydney Water will work with Penrith and Liverpool councils who will manage the non-trunk drainage stormwater network within the roads and streets.

## Measuring benefits

The Blue+Green=Liveability report recommended that governments implement policies and methodologies that enable effective evaluation of liveability outcomes and that water utilities continue to measure the financial, social and environmental value of water-enabled liveability outcomes and continue to engage with customers to ensure we understand their preferences and willingness to pay.

Many of Australia's larger water utilities have made significant progress with measuring the benefits of liveability, and now have standard approaches that they use when evaluating all investment cases for new investments and policies. Appendix 1 provides examples of liveability benefits that customers have said they are willing to pay for through surveys completed to support price submissions and water business investment cases.

Governments have also begun to implement methodologies that embed valuation of liveability benefits. For example, the NSW Government's Interim framework for valuing green infrastructure and public spaces is a good example of government leadership in this regard.

In other cases, we heard that water utilities haven't adopted consistent and rigorous benefit assessment approaches, and are instead still relying on cost-effectiveness, risk and/or financial analysis.



### Willingness to pay

The economic value of benefits is measured as the maximum amount people would be willing to pay for the benefits.

For goods and services traded in markets, willingness to pay can be observed from market prices. Many environmental benefits aren't traded in markets, so researchers have used survey techniques such as contingent valuation and choice modelling to ask people how much they would be prepared to pay.

Where these approaches are being used, investment opportunities that carry significant public benefits are being overlooked by water businesses as these benefits aren't being well captured in decision making.

There has been transformational progress in some jurisdictions in approaches to understanding customer preferences and willingness to pay for liveability benefits.

Often this has been led by a shift in the regulatory pricing submission framework of the water business – for example the shift to the PREMO framework in Victoria in 2018.

The PREMO framework means it is not possible for Victorian water businesses to have their price submissions approved without having meaningfully engaged with their customers to understand their concerns, interests, and priorities.

These types of framework harness strong incentives to deliver better value for customers, and to place customers' preferences and willingness to pay at the centre of water businesses' price submissions.

Many water businesses subject to customer centric regulatory frameworks have transformed the way they approach customer engagement in, and outside of, their water pricing submissions.

Across Australia businesses are developing multiple method approaches combining evidence from things like surveys, deliberative forums, and citizen juries, to robustly explore and understand customer preferences and willingness to pay for liveability services. Over the past five years, these approaches have helped secure tens of millions of dollars in liveability investments through price submission processes

Not all water businesses have shifted in this customer centric way, nor have all regulators. Through our consultations we heard of cases where water businesses are still subject to regulation that doesn't place customers' preferences at the centre of decision making.

We also heard of cases where economic regulators who have customer centric regulatory frameworks in place are not willing to accept robust and multiple lines of evidence showing customers are willing to pay for liveability outcomes, particularly those that customers may not benefit from directly themselves. Where this is happening, regulators may be standing in the way of positive customer-led reforms.



## Great Tasting Water Program

In Victoria, Wannon Water has initiated a project, endorsed for its anticipated \$47 million in health, economic, and environmental benefits, to address issues in water taste and quality.

Residents in towns like Portland, Port Fairy, and Heywood face inconsistencies in water taste and quality due to natural mineral salts in groundwater. This variability has led to lower water consumption, public health concerns, and increased economic burdens from the purchase of bottled water and appliance maintenance. Receiving a significant \$26.1 million from the National Water Grid Authority, the initiative is supported at both federal and state levels, emphasising its regional impact. Wannon Water plans to roll out a two-year upgrade strategy for each town, with options including enhanced water treatment or connections to alternative water systems.



## Interim Framework for Valuing Green Infrastructure and Public Spaces

In 2022, the NSW Department of Planning and Environment released an interim framework for valuing green infrastructure and public spaces. Use of the framework as a companion to the NSW Government Guide to Cost-Benefit Analysis was approved by NSW Treasury.

The framework goes well beyond mere acknowledgement of liveability at a strategic level by providing detailed guidance for practitioners of cost-benefit analysis.

This guidance includes identifying the typical benefits and costs from green infrastructure, providing recommended parameter values for benefits of green infrastructure, and advising on sensitivity analysis, reporting, and pitfalls to avoid.



Parameter values are provided for recreational, health, active transport, air quality, biodiversity, greenhouse gas, and urban cooling benefits. A case study is provided to demonstrate application of the framework.

## Willingness to pay for co-benefits from carbon offsetting

In 2022, WSAA engaged the Centre for International Economics to conduct a discrete choice experiment (DCE) to estimate water utility customers' WTP for carbon offsetting and its co-benefits. The online survey was completed by a large sample of 4,357 respondents from across Australia.

The study found co-benefits are important to customers and may be a similar order of magnitude to WTP for reduced net emissions. The offset projects delivering the greatest co-benefits were found to be environmental plantings supporting significant biodiversity. Customers were, on average across Australia, willing to pay around \$15 per year for 10 years to see 15 000 Ha of new native forest located in their state supporting significant biodiversity. Each participating utility can access results for its own jurisdiction through WSAA.



## Funding of blue and green infrastructure

The Blue+Green=Liveability report recommended that governments allocate funding, resources, and accountability within government to liveability outcomes in the same way as other social infrastructure such as health, education and transport.

It recommended that utilities identify funding arrangement opportunities that consider green and blue infrastructure as social infrastructure; for example, public-private partnerships, contributions from beneficiary stakeholders and direct government funding.

Across all of our discussions we heard that 'aligning the buckets' to fund blue and green infrastructure remains one of the greatest challenges for water businesses. Often this is because there is misalignment between funding sources, accountability, and who owns or manages a green or blue infrastructure. In other cases, it is because funding, accountability and ownership are aligned, but funding isn't secure or certain over time.



### Kilmore Treatment Plant Offsets Scheme

Goulburn Valley Water (GVW) sought cost-effective wastewater treatment solutions to cater to Kilmore's expanding population without resorting to traditional infrastructure expansion. GVW and partners, including the Goulburn Broken Catchment Management Authority, piloted an Environmental Offsets Scheme to counterbalance the increased recycled water introduced to local waterways. This scheme involved enhancing the existing water treatment to minimise contaminants entering the creek and initiating offset actions, such as gully rehabilitation, stock exclusion via riparian fencing, and riparian revegetation. Not only did the offset solution significantly reduce costs – \$15 million capital cost compared to the business-as-usual \$50 million – it also brought considerable ecological, social, and GHG emissions benefits. Lessons from the project underscore the importance of stakeholder partnerships, early regulator engagement, and the commitment to genuine ecological enhancement.

Despite these challenges, people we spoke with see opportunities and this challenge area evolving over the coming years. Several interviewees noted that Commonwealth and some State Treasuries are now shifting their thinking towards outcome budgeting, and allocating budget to agencies or clusters of agencies most able to deliver these outcomes. This compares to a more traditional 'expenditure plus' approach to budgeting where budgets are prepared incrementally by taking the existing expenditure base and adding incremental amounts for the new budget period.

Other water businesses highlighted that the shift to customer centric regulation in some States is supporting water businesses to fund blue and green infrastructure at scale on land they own, manage or are accountable for.

Over the past five years, water utilities we spoke with estimate that more than \$250 million in blue and green infrastructure investment has been allowed by regulators in NSW, Victoria and South Australia alone through customer led price submission processes. Water businesses are increasingly seeing customer price submissions as one key avenue for raising funding for discretionary liveability investments.

Others we spoke with identified case studies where reforms have allowed alignment of funding, resources and accountabilities in ways that are out of the norm – for example through establishing new authorities responsible for managing stormwater and waterways across multiple catchments and government areas.



## Western Sydney Aerotropolis Stormwater

In 2022 the NSW Government announced the appointment of Sydney Water as the trunk drainage authority for stormwater in the Western Sydney Aerotropolis, including the Mamre Road Precinct.

The Western Sydney Aerotropolis spans multiple catchments and councils. The appointment of Sydney Water shifts the responsibility for delivering, managing and maintaining the regional stormwater network from councils to Sydney Water. Consolidating stormwater management along with drinking water, wastewater and recycled water networks with Sydney Water has the potential of supporting a coordinate approach to delivering a cooler, greener Western Parkland City, healthier waterways, more land for development, that otherwise would have housed water infrastructure, and other benefits. The approach also secures sustainable funding for ongoing stormwater management, coordinated across catchments by Sydney Water



## Outcome-based budgeting

The Australian Government has committed to release a new standalone statement of Measuring What Matters Statement this year.

The Statement will be Australia's first national framework on measuring Australia's wellbeing and progress. It seeks to extend on traditional economic indicators that provide important insights, but not a complete picture or holistic view of the community's wellbeing. The Statement will seek to assess progress on a broad range of social and environmental indicators alongside traditional economic measures. Over time budget allocations will shift to align funding buckets to those best placed to deliver the outcomes that matter.

New South Wales's shift towards outcome based budgeting started in 2018. The State's budgets are now organised around Cluster and State Outcome arrangements. Clusters are groups of NSW Government agencies and entities with shared or related policy goals.

The Cluster arrangement aims to improve government services and outcomes for the community by:

- Pursuing common objectives across agencies
- Better integrating services
- Helping to efficiently allocate resources between areas

Budgets are allocated to Clusters based on outcomes they are best placed to deliver. One of the key Outcome Indicators in the last NSW State Budget is the Liveable City Rating. Other Indicators include Increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10 per cent by 2023, and the goal to Plant one million trees across Greater Sydney by 2022



## Funding investments in biodiversity through customer-led price submissions

Yarra Valley Water conducted a willingness to pay study with Marsden Jacob Associates in 2022 as part of the price submission process. The study demonstrated that customers were willing to pay an additional cost for protecting and restoring habitat for endangered species.

Customers were told that YVW currently manages buffer land at STPs to control for fire and other things that could impact our operations, however there is an opportunity to support endangered wildlife and species if buffer zones were managed in a way that allows native flora to regenerate and encourages the protection of endangered wildlife. Customers clearly indicated they were willing to pay an additional cost for these services.

A follow on 2022 Citizens Jury run by MosaicLab Co approved nature-based investment at STPs as an investment focus area, along with an accompanying strategic measure of "hectares of land YVW actively manage to preserve and restore biodiversity and natural habitats".

Evidence of customer willingness to pay, and how much they were willing to pay, was one evidence based that YVW used when in developing the program of regeneration works on treatment plant land. The Essential Services Commission accepted this evidence in the price submission, and also rated YVW's customer engagement approach as 'Leading'. As a result, the Upper Yarra STP investments are proceeding and will be paid for (in part) using customer revenue raised specifically to fund these types of investments, approved by their economic regulator.



## The next wave of reform

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The next wave of reform involves continuing to pursue recommendations from Blue+Green=Liveability where progress is still occurring and needs to be made.

What we heard through consultations shows that there is a strong appetite to continue pursuing the original liveability agenda, now with a greater maturity of understanding of issues, barriers and opportunities. The next wave of opportunity also involves extending how we think about liveability in important ways that have practical implications for the next steps in reform and delivering on the new agenda.

There is a strong appetite and momentum for addressing the remaining barriers to investments in blue and green infrastructure due to:

- A heightened appreciation of the value and importance of local blue and green infrastructure in the wake of the public health orders imposed during the COVID-19 pandemic
- The increasing regularity and severity of heatwaves, bushfires and flooding as our climate changes
- A maturing understanding of the barriers, and the issues and opportunities that arise from addressing them.

There is also a growing awareness that lessons learnt from reforming delivery of blue and green infrastructure need to be applied to other aspects of urban water services. Blue and green infrastructure were singled out for reform in the Blue+Green=Liveability report because of impediments arising from the diverse nature of benefits resulting from the infrastructure. Some of these benefits are not captured under an approach of minimising expenditure subject to meeting water and sewerage service standards. The report called for governments and utilities to work together to make sure *all options are considered and all of the benefits are counted*.

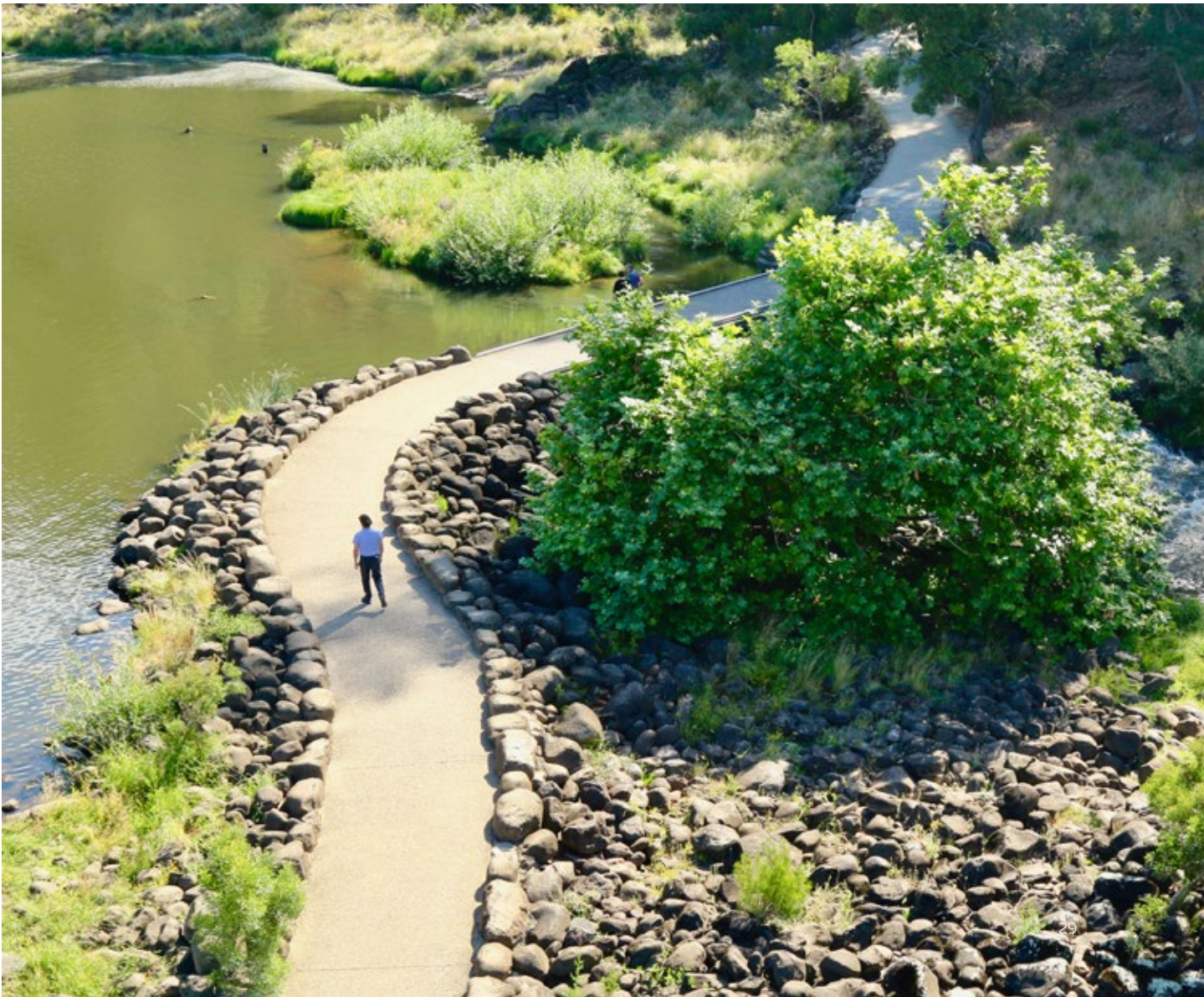
As this report has noted, our position should extend our understanding of how water businesses impact liveability in ways that go beyond providing blue and green infrastructure and core services. Extending our definition of liveability to recognise water businesses impact on liveability beyond blue and green transforms the scope and scale of the change needed.

One clear way water utilities are already extending liveability beyond blue and green infrastructure is through water utilities unlocking value from their assets and services through circular economy initiatives such as renewable energy generation, waste management and resource recovery.

Another way water utilities are enhancing liveability is through activating land and investing to provide biodiversity, carbon sequestration and other services on land on which they own or operate. Doing these things supports liveable communities in direct and practical ways.

The new focus on thriving is an extension of the liveability approach many water utilities across Australia are already championing. We need to cover this broader range of decision making, including areas that WSAA has highlighted since Blue+Green=Liveability, such as circular economy initiatives and the resilience benefits of decentralised infrastructure.

Governments and water utilities will need to work together to support thriving communities by considering all options, the fit-for-purpose context and their various benefits.



# Broadening our view of options and benefits in the delivery of blue x green

## Benefits



### Public health

Delivering public health benefits, through enhanced environmental quality and pollution reduction



### Ecological processes

Maintain and enhance vital ecosystem services, supporting the natural processes that provide clean water, fertile soil, pollination, and climate regulation



### Recreational amenity

Enhances the quality of public spaces and recreational amenities, leading to healthier, more enjoyable environments



### Equity and heritage

Inclusive and equitable practices ensures benefits are distributed fairly across society, while also preserving cultural heritage for future generations



### Inclusion and cohesion

Design for cultural values and inclusiveness of diverse perspectives and practices, promoting social cohesion



### Efficiency and pricing

Demand-side design options, targeted at consumption through appliance efficiency and pricing



### Circular economy

Design to enhance productivity through activities which deliver on circular economy principles



### Decentralised and modular

Decentralised and centralised designed infrastructure through modular investments that keep options on the table



### Biodiversity preservation

Regenerative practices protect and promote biodiversity, fostering the survival and thriving of diverse species, which are essential for ecological balance and resilience



### Energy use reduction

Decentralised and networked blue and green infrastructure moderates temperature to allow more efficient energy usage at all levels and lowering demand



### Climate resilience

Increase resilience to extreme weather events, safeguarding communities from climate-induced hazards and improving societal adaptability.



### Renewables accessibility

Integrating systems and ensuring they are accessible can help reduce and capture greenhouse gas emissions to mitigate climate change

## Design options





3

## A new agenda for thriving communities

There are roles for the Commonwealth Government, State Governments and water utilities to embrace water for thriving communities

### A new National Water Initiative

A key vehicle for action by all Governments is the renewal of the National Water Initiative (NWI). We ask that the renewed NWI capture:

- Nationally consistent principles for developer charges will help deliver cool green cities and help defray growth costs
- Support a whole-of-water cycle management approach for water corporations across cities and regions to better deliver integrated planning
- Seek support from the Circular Economy Ministerial Advisory Group to identify and seed innovative circular economy approaches that enhance the delivery of blue and green infrastructure
- Incorporation of water-related contributions to health and well-being value metrics in delivery of overall of life satisfaction frameworks
- All options on the table must be the guiding principle within the NWI. Principles must include engaging local communities, ability for evidence-based decision making, and place-based, sustainable delivery. The Australian Drinking Water Guidelines, must better reflect purified recycled water as an option of source water and provide national regulatory guidance and validation protocols
- Provide a national urban planning framework for implementing blue and green grids, based on Integrated Water Management principles
- Guide consistency on policy and applications of circular economy opportunities to realise benefits at scale across states and territories

## Beyond the National Water Initiative, State Governments can take action

➤ Review regulatory models for delivering water services to embed liveable and thriving outcomes. The review should provide objectives for frameworks that enable funding for outcomes over and above minimum service standards supported by net economic benefits

➤ Provide guidance on the required standard of evidence of net benefits to the community from liveability-enhancing projects for assurance processes and pricing determinations

➤ Establish state/ territory-based reporting requirements for liveability outcomes, including the role of water enabled blue and green infrastructure

➤ Enable better delivery of community benefits by transitioning responsibility of stormwater management to water utilities and corporations in a way that is sustainable

➤ Establish planning forums with water utilities and corporations, to be involved with growth areas development, urban planning for inclusion of integrated water management opportunities

➤ Embed integrated infrastructure, liveability-enhancing planning approaches in state planning codes, policies, strategies and schemes to deliver liveability and thriving benefits

➤ Establish policy and support strategies that enables all options, and fit-for-purpose water use to achieve water security to sustain green and blue infrastructure

➤ Support a whole of government approach to circular economy initiatives, by supporting partnerships with water industry



## Water utilities are committed to action

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➤ Providing economic regulators with evidence-driven plans and data to support delivery of liveability and thriving outcomes, and demonstrating these to the community

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➤ Conducting research into community preferences, including willingness to pay, for thriving outcomes, and an ability to articulate the delivery of multiple benefits

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➤ Measuring and reporting, through the development of a benefits realisation tool on water-enabled liveability and thriving outcomes

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➤ Proactively engaging in all stages of land-use planning processes, including planning reviews

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➤ Utilising the ready reckoner tool from the WSAA Health benefits from water centric liveable communities in making the case for integrating water into planning initiatives

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➤ Building the capability of their people to assess and design options with multiple benefits through integrated planning and delivery

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➤ Taking a no-opportunity-wasted approach to considering options for creating value through resource management

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➤ Finding and seeding innovative circular economy approaches that can scale to be commercially sustainable

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➤ Supporting a review of the water industry standards to ensure they support a broader range of water sources and enable circular economy initiatives

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# Appendix 1

**TABLE 2 Examples of results from recent valuation studies**

COMMISSIONED BY	CONDUCTED BY	YEAR	PARAMETER	AVERAGE VALUE
WSAA	CIE	2022	Reduction in your water utility annual emissions by 2031	\$0.382 per household per year for 10 years per percentage point
			Water utility annual emissions offset by accredited projects by 2031	\$0.366 per household per year for 10 years per percentage point
			New native forest	\$0.144 per household per year for 10 years per 1,000 hectares +\$3.301 per household per year for 10 years if forest is located in a household's own state +\$9.909 per household per year for 10 years if the forest supports significant biodiversity
			Aboriginal and Torres Strait Islander employment	\$0.193 per household per year for 10 years per person employed who was seeking job opportunities
Sydney Water	CIE	2018	Limiting release of untreated wastewater at Sydney cliff faces	\$18 per household as a one-off payment
Hunter Water	Marsden Jacob Associates	2018	3-6 km of additional bank work and landscaping of open stormwater drains	\$33.87 per household for 4 years
			Reducing annual carbon emissions by 4,600-9,200 tCO <sub>2</sub> e by 2025	\$3.57 per household
Sydney Water	Gillespie and Bennett	2019	Length of waterways in good health in 30 years	\$0.93 per household per year for 10 years per km
			Area of native vegetation planting, including wetlands in 30 years	\$0.18 per household per year for 10 years per hectare
			Recreation facilities built in local open spaces in 30 years	\$0.10 per household per year for 10 years per set
			Rubbish and litter removed each year	\$0.18 per household per year for 10 years per truck load
SA Water		2022	Native forest plantings on SA Water land	\$18.77 per household per year per 800 hectares
			Spoil recycled and reused rather than sent to landfill	\$10.94 per household per year per 110,000 tonnes
			Environmental and cultural benefits at two reservoir sites in the Flinders Ranges	\$3.33 per household per year
TasWater	Marsden Jacob Associates	2020	A project that provides recycled water to be used by agriculture or sporting grounds in lieu of irrigating with drinking water, compared with one that does not	\$11.73 per household per year

**TABLE 3 Examples of findings from customer engagement on liveability**

UTILITY	FINDING
Sydney Water 2019	<p>87% of forum participants and 65% of survey respondents voted for improvement in wastewater ocean outfalls at an average annual bill impact of +\$2.30</p> <p>67% of survey respondents voted to improve waterway health at an average annual bill impact of +\$2.90</p>
Melbourne Water 2020 <sup>1</sup>	<p>93% agreed or strongly agreed on the importance of and their support for “Melbourne’s environment, rivers, creeks and bays are protected and Melbourne Water’s greenhouse gas emissions are minimised”</p> <p>95% and 93% agreed or strongly agreed on the importance of and their support for “Melbourne remains liveable as it deals with the impacts of climate change and population growth”</p>
Greater Western Water 2023 <sup>2</sup>	<p>A panel of 44 Greater Western Water (GWW) customers recommended spending \$10m-\$14m on getting water from other sources, in particular:</p> <ul style="list-style-type: none"> <li>• Collaborate with councils for high value projects that can maximise the use of alternative water sources</li> <li>• Increasing the amount of alternative water (stormwater and recycled) facilities for more access to homes that don’t have them</li> <li>• Investment and advocacy in alternative water sources e.g. recycled water and stormwater for things such as watering parks and gardens, or for livestock to drink (not for human consumption)</li> </ul> <p>The panel recommended spending \$11.2m-\$25m on waterway health, in particular:</p> <ul style="list-style-type: none"> <li>• Education, community engagement and awareness are vital for the future of waterway health</li> <li>• GWW investing in water treatment plants is necessary to protect our overall waterway health and environment</li> <li>• Improve the quality of recycled water returning to waterways</li> <li>• Invest in technology that makes the creation and supply of manufactured water/alternate water for irrigation and industry affordable</li> </ul>
Icon Water 2022 <sup>3</sup>	<p>82% of residential customers supported Icon Water having a substantial role contributing to liveability, but only 27% supported Icon Water spending (an unspecified amount) more on liveability initiatives</p>
NSW Department of Planning, Industry and Environment 2021 (Lower Hunter water security)	<p>91% of participants supported “Integrate land use and water management to support liveable communities”</p> <p>88% of participants supported “Recycled water program for non-drinking water”</p> <p>69% of participants supported “Community engagement on purified recycled water for drinking”</p>

1 Melbourne Water 2020. Price submission 2021 – 1 July 2021 to 30 June 2026. 9 November

2 Greater Western Water 2023. Price submission panel report. 7 May

3 SEC Newgate 2022. Icon Water customer and community strategic engagement project report. Prepared for Icon Water. April

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