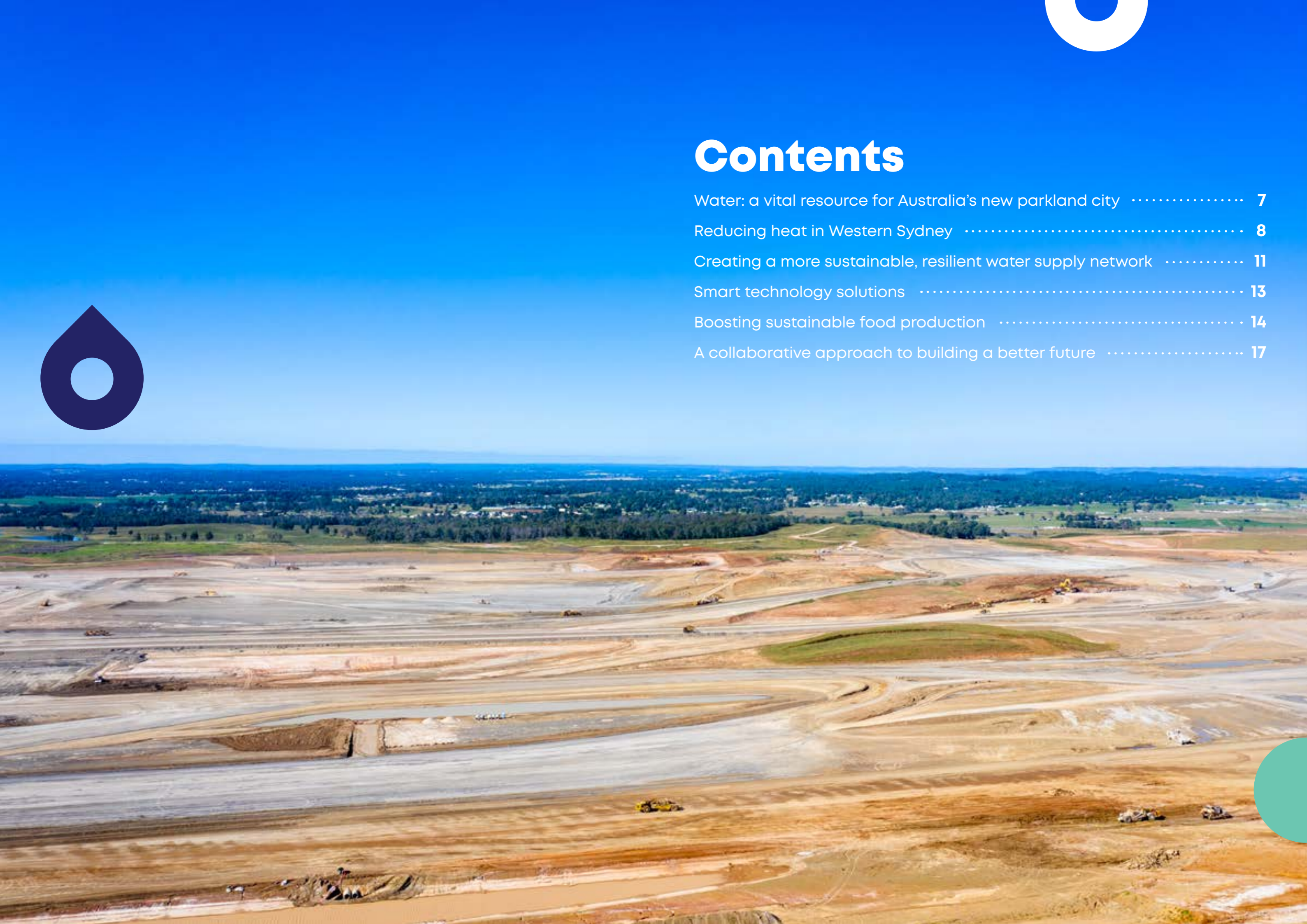




Creating a water resilient city:

Bringing the Western Parkland City to life

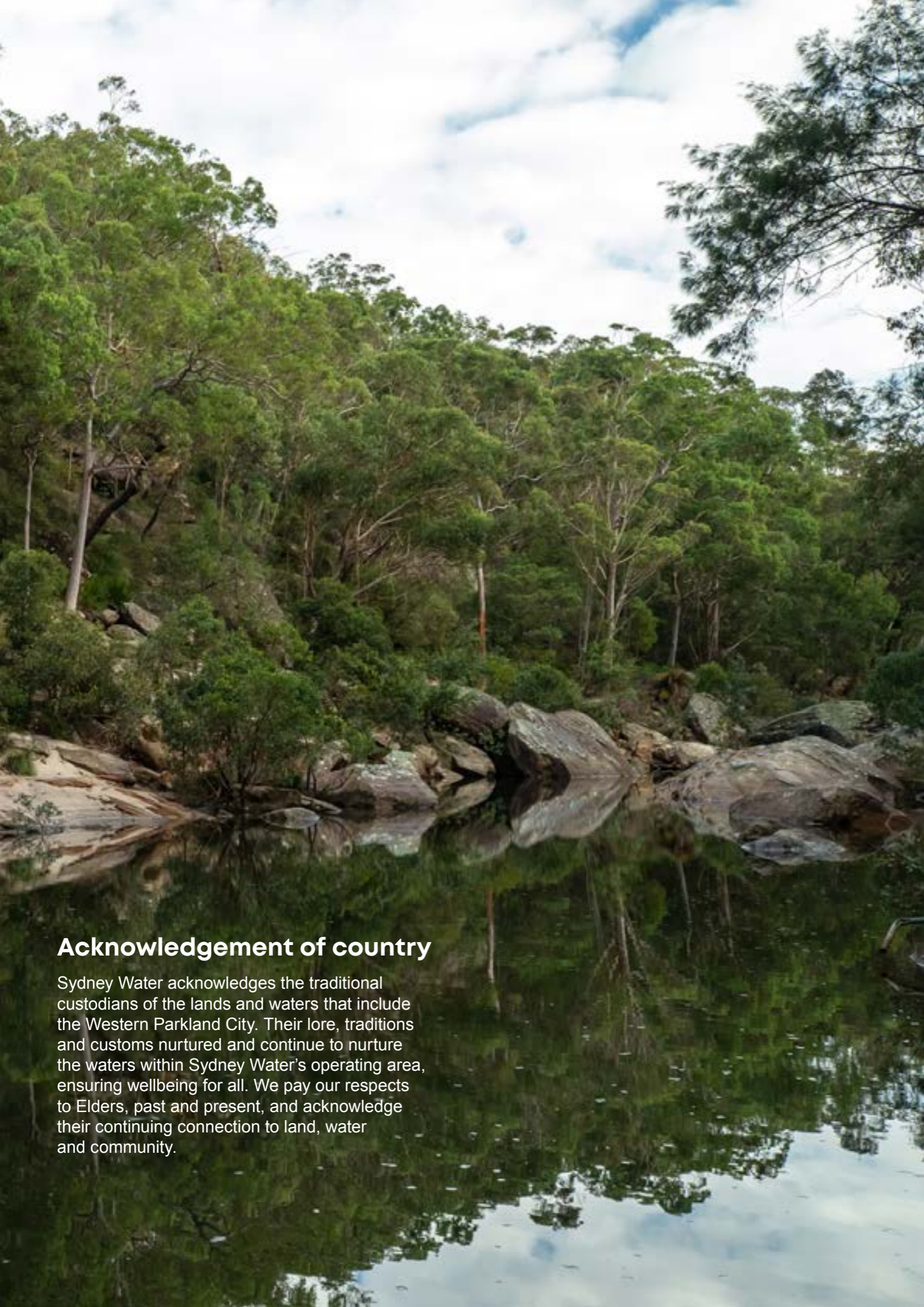
Sydney
WATER



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Acknowledgement of country

Sydney Water acknowledges the traditional custodians of the lands and waters that include the Western Parkland City. Their lore, traditions and customs nurtured and continue to nurture the waters within Sydney Water's operating area, ensuring wellbeing for all. We pay our respects to Elders, past and present, and acknowledge their continuing connection to land, water and community.



Foreword

For 130 years, Sydney Water has helped shape Greater Sydney, the Blue Mountains and the Illawarra. We have supported communities and continually innovated to meet the growing needs and expectations of our customers. Every day, we supply more than five million customers with safe, high-quality drinking water. We are also custodians of wastewater, recycled water and some stormwater services, ensuring our communities can enjoy healthy waterways and clean beaches.

Water is essential in daily life, but we also understand that the way we use it affects our future economic prosperity and community wellbeing. This means we need to continually adapt to the evolving challenges of our urban and natural environments and proactively nurture our water resources for the generations to come.

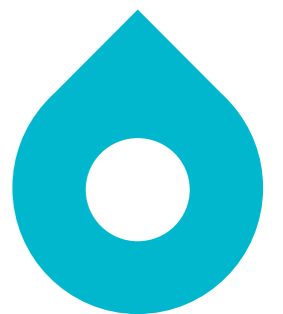
That's why we're excited to be contributing to the creation of the new Parkland City in Western Sydney. As the city grows and evolves over the next 20 years, water will play a vital role in ensuring that it becomes a vibrant, liveable, sustainable urban centre.

Sydney Water is uniquely placed to help the NSW Government, developers and other key stakeholders through every step of the urban development process. We have a proven, reliable and commercially successful business that provides our customers value for money. We also have strong relationships with the Western Sydney community, stakeholders and regulators, and understand their expectations.

We are a world-class utility with a history of successfully innovating to create new products, services and markets. We are committed to the government's priorities, and we can help plan and deliver services that are essential to the new city.

We look forward to working with our customers and partners to achieve our vision to create a better life with world-class water services, help accelerate development and bring the Western Parkland City to life through creating a water resilient city.

Roch Cheroux
Managing Director



Over the next five years, Sydney Water will invest about \$3 billion to create new water-related infrastructure in the Aerotropolis and surrounding growth area.



Customers at the heart
Involve you, our customers, as we plan for the future

Celebrate waterways
Protect South Creek and the Hawkesbury Nepean rivers so they remain vital waterways that the community enjoys

Liveable places
Deliver integrated services that support the changing urban landscape and reflect community values

Deliver for the west
Offer services to support housing and economic growth at an affordable price

Boost productivity sustainably
Support economic development with recycled water for industry and agriculture

Cool and green spaces
Support a network of open spaces and trees in a parkland setting with recycled water and stormwater

Valuing resources
Pursue diverse opportunities to use, re-use and capture water, resources and energy

Water how you want it
Facilitate tailored water services to communities that wish to use water in more integrated ways

Resilient water sources
Plan for future water supply that is resilient to growth and climate extremes

Water: a vital resource for Australia's new parkland city

Western Sydney is in the midst of an exciting transformation: the creation of the new Western Parkland City. The city will include much more than the new Western Sydney International (Nancy-Bird Walton) Airport and surrounding Western Sydney Aerotropolis. It will offer bustling commercial hubs, industry precincts, a new university and other education facilities. The new city will be dynamic and culturally diverse, with plenty of jobs and varied, affordable housing.

None of this is possible without water – and Sydney Water has the expertise, scale and partnerships in place to ensure this essential resource will be readily and reliably available. We are accelerating the construction of new water and wastewater infrastructure, enabling the city's new facilities, communities and precincts to grow and thrive.

We also share a vision with the NSW Government and other key stakeholders of a green and liveable parkland city. Water will be vital in fostering the city's parks and treescapes.

However, Sydney Water also recognises that as Australia's newest city, the Western Parkland City must be sustainable as well as prosperous. We are committed to initiatives that go well beyond traditional water recycling schemes. We are investing in innovative new technologies and projects that will help drive the local circular economy, reducing waste and increasing our ability to reuse this valuable resource.

Beyond essential water servicing

We understand the challenges ahead. Temperatures in the area are already 5–10 degrees hotter than the rest of Sydney and expected to continue to rise. Western Sydney's population is projected to grow to 1.1 million people by 2036 – and to more than 1.5 million by 2056. We estimate Western Sydney will need 20–30 per cent more water to ensure the Western Parkland City is a great place to live, work and play, and to support the region's key industries.

For these reasons, Sydney Water is re-imagining water use in the area with our Western Sydney Regional Master Plan. The plan goes beyond essential water servicing to consider, integrate and understand the economic value of water for shaping, building, greening and cooling the new city.

Enabling sustainable development

This plan, as well as billions of dollars in investments, will help turn our vision for the Western Parkland City into a reality. It is a vision of a city that is cool and shaded, where buildings are interspersed with generous green spaces, waterways are protected and ecosystems thrive.

Crucial to this vision is our ability to capture and reuse rainwater and stormwater in the catchment, and integrate this with advanced recycled systems and traditional water sources.

This is why Sydney Water is taking an integrated approach to managing the total water cycle. It is essential to not only help ensure the area has world-class water services, but also to position the Western Parkland City as a leader in sustainable development.

Investing in Western Sydney and jobs

Sydney Water is investing billions of dollars to turn the Western Parkland City into a reality.

These investments include:

- \$1.3 billion in new water-related infrastructure over the next two years – increasing to \$3 billion by 2026
- further investment in the Upper South Creek Advanced Water Recycling Centre
- 400 new jobs in Western Sydney via our regional delivery model, Partnering for Success, and many more jobs through other projects and partnerships.

Reducing heat in Western Sydney

The Western Parkland City will be situated in one of the hottest and driest parts of Greater Sydney. One major challenge will be minimising the urban heat island effect. This effect occurs when natural landscapes are replaced with a high concentration of surfaces that absorb and retain heat, such as bitumen and concrete. It can contribute to air pollution, increase energy use for cooling buildings, lead to higher levels of heat-related illness and mortality.

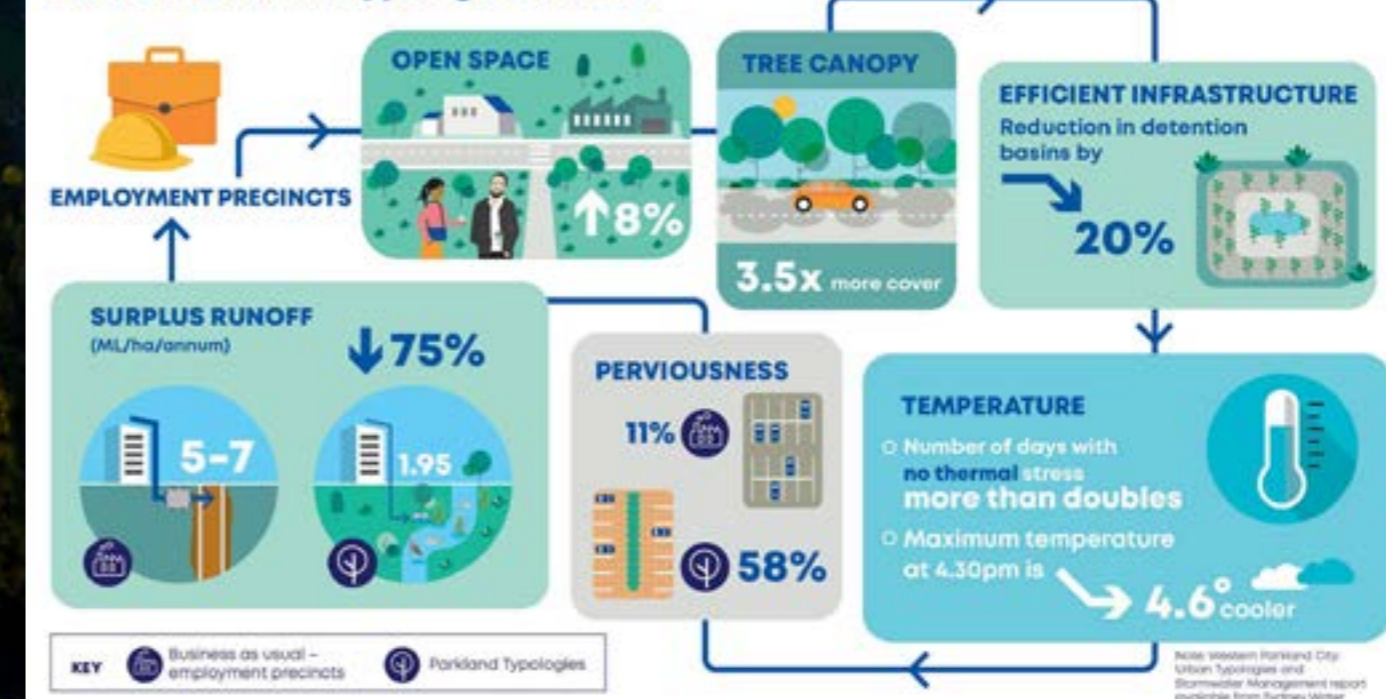
Water will be an essential element for reducing the heat in the Western Parkland City. To this end, we worked with urban planning and architecture experts at Bligh Tanner, Architectus and Mosaic Insights on the Western Parkland City: Urban Typologies and Stormwater Solutions report.

The report reveals how smart water planning typologies can help guide development across Western Sydney to maintain waterway health and reduce the urban heat island effect. It includes a suite of suggested templates that can be implemented into developments and projects, with full scale implementation resulting in a reduction in the average temperature of an extreme heat day by 4.6 degrees. This can be achieved by implementing cooling actions such as using permeable materials to create surfaces, planting trees, increasing vegetation and irrigating green spaces.

This strategy could decrease the average number of extreme heat stress days in summer from 47 to 19 by 2055, ensuring Western Sydney remains an enjoyable place to live, work and play.

Implementing cooling actions in Western Sydney – such as planting trees and irrigating green spaces – could decrease the average number of extreme heat stress days in summer from 47 to 19 by 2055.

What do Parkland Typologies deliver?





Creating a more sustainable, resilient water supply network

Sydney Water is providing the Western Parkland City with a reliable and sustainable water supply. To do this, our network will include a diverse range of water sources in multiple locations to ensure it is resilient to changeable environmental conditions.

We have a target to increase the supply of recycled water in Western Sydney by 50 per cent. This will enable us to greatly increase the supply of water for uses such as irrigating the city's many green spaces.

Our new Upper South Creek Advanced Water Recycling Centre will be the centrepiece of our recycling efforts, but it's only one of several initiatives. For example, our Lower South Creek Treatment Program includes world-class technology and infrastructure upgrades to the St Marys, Riverstone and Quakers Hill water recycling plants.

This \$500 million program is already delivering significant energy and carbon savings. The St Marys and Quakers Hill upgrades have already achieved a 42 per cent reduction in greenhouse gas emissions, earning the program an 'excellent' design rating from the Infrastructure Sustainability Council of Australia.

The program is an Australian first, with on-site renewable energy use as the core objective for our St Marys upgrade. Biogas captured by the refurbished plant will enable a predicted 70–90 per cent self-supply of electricity.

Our Prospect South to Macarthur Distribution System Link will also secure water supply for the new city. The project includes a two-directional link between the two water delivery systems, 15 kilometres of additional pipework, three pumping stations and upgrades to our existing network. It will allow for an extra 100 megalitres, equivalent to 40 Olympic-sized swimming pools, of reservoir capacity in Western Sydney.

Upper South Creek Advanced Water Recycling Centre

The Upper South Creek Advanced Water Recycling Centre will be Sydney Water's largest investment in water resilience in a decade. The facility will be built in stages to sustainably support population and economic growth across the region.

The first stage is expected to be completed in 2025 and will provide wastewater services to meet the commissioning requirements of the Western Sydney International Airport.

When it reaches maximum capacity in 2036, the centre will treat up to 100 million litres of wastewater daily. It will produce high-quality recycled water suitable for a range of uses.

The centre will use industry-leading water and resource recycling technology to harness renewable energy, making this one of the greenest infrastructure investments in NSW. It will go well beyond existing recycling schemes where water is reused for flushing toilets and watering gardens.

Its design will maximise opportunities for resource recovery. For example, it will be able to co-digest energy-rich organic waste such as fats, oils, grease and food scraps, with the potential to feed electricity or gas into the grid.

Sydney Water aims to increase the supply of recycled water in Western Sydney by 50%.



Smart technology solutions

Technology will play an important role in water-use solutions.

Smart devices and smart homes

Sydney Water has partnered with the University of Technology Sydney's Institute for Sustainable Futures (ISF) to consider what a smart and water-efficient home of the future might look like in Western Sydney. The ISF is researching potentially important developments by studying household water use and conducting visioning workshops and focus groups. The project is also considering the role of integrated water servicing, liveability initiatives, circular economy models, sustainability, and innovations in other sectors.

'Purple roofs' for stormwater detention and retention

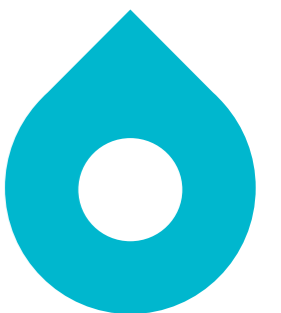
Purple roofs are an environmentally friendly roofing concept that includes a waterproof membrane, a drainage layer, a detention layer, and a soil layer planted with vegetation. They are designed to capture and hold rainwater during heavy rain events, helping to prevent flash flooding during storms, stop pollutants entering waterways and reduce urban heat. A prototype is being tested in collaboration with Western Sydney University.

Rain gardens

We are working with Blue Mountains City Council to construct and monitor the effectiveness of rain gardens and naturalised stormwater channels in removing nutrients from stormwater.

Resilience to climate risk

Sydney Water is partnering with several government departments and other utilities to improve our resilience to climate change with the help of the independent XDI Cross Dependency Initiative. The online, interactive XDI platform analyses an organisation's data to determine the risk to its assets from extreme climate events and suggests measures to mitigate those risks. Having this information will enable us to see interdependencies with upstream and downstream utilities such as power and roads, giving us and our partners opportunities to collaborate on reducing our climate risks. For instance, new treatment plants in Western Sydney will have climate adaptation measures built into their design.



Boosting sustainable food production

To create a productive and sustainable Western Parkland City, Sydney Water is taking an integrated approach to providing water, waste and energy services. We have embraced the circular economy model, so that our network and facilities are more regenerative by design and we can help decouple growth from the consumption of finite resources.

We have worked with the Western City & Aerotropolis Authority, and now the Western Parkland City Authority (WPCA), on servicing models to create a world-leading Integrated Intensive Production Hub (IIPH) that integrates food production, bioenergy creation, water and waste services, and research and development on a large scale.

This project could deliver:

- a new, internationally competitive industry for Western Sydney, with 6,500 new jobs
- a sustainable organic waste management solution that will reduce pressure on landfill and make a substantial contribution to NSW's net zero carbon emission target by 2050
- a platform for collaboration between the New South Wales Government, local government and the private sector
- an annual revenue stream of \$50 million, growing to \$100 million once the project is at full scale.

All energy, heat, CO₂ and water required by the IIPH would come from local renewable sources, with excess energy available for supply to local communities.

We are also currently working on a proof of concept bioenergy hub plant with the WPCA, Western Sydney University and Hawkesbury City Council to demonstrate the positive circular economy outcomes in Western Sydney.

Integrating food production, bioenergy production, water and waste services, and research and development on a large scale could deliver 6,500 new jobs for Western Sydney.





A collaborative approach to building a better future

Sydney Water has been collaborating with all levels of government – and, in particular, the NSW Department of Planning, Industry and Environment, the Planning Partnership Office, Greater Sydney Commission, Western Parkland City Authority and Councils – to coordinate our planning for the Western Parkland City. This will ensure we have the right infrastructure and services in place to support the government’s vision for, and the evolving needs of, the fast-growing city.

We are also working closely with energy providers Jemena and Endeavour to create integrated utility solutions, and already delivering world-class infrastructure in Western Sydney and providing greater value for money for the government and our customers.

Sydney Water is actively engaging with industry bodies, our customers, the private sector, universities and other research organisations to deliver positive outcomes for the new city.

Creating a water-smart urban development

Sydney Water has partnered with developer Celestino to provide sustainable water services to Sydney Science Park and create a blueprint for smart water sensitive development throughout Western Sydney. A key development in Sydney’s future Western Parkland City, Sydney Science Park is a \$5 billion mixed-use research, education and residential hub located at Luddenham in the Aerotropolis growth precinct.

We are working closely with Celestino to provide sustainable and resilient water services to the Sydney Science Park, with phased capacity to serve the precinct as it grows.

The innovative onsite treatment hub will also provide Sydney Water with multiple opportunities to trial new smart treatment technologies for future use.

This partnership will be the first large-scale commercial site in the region to demonstrate the value of integrated water cycle systems.



Open to new opportunities

The Western Parkland City provides an opportunity to create a blueprint for smart, sustainable urban developments throughout Australia. Achieving this ambitious goal will require deep, collaborative efforts from all key stakeholders.

Sydney Water is working closely with our partners and customers to deliver a sustainable, resilient water supply for the city. We know there's more work to do. We are open to new partnerships and looking for new ways to nurture Western Sydney's water and environment and drive sustainable, economic growth for future generations.

For further information or to discuss partnership and investment opportunities, please contact:

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