

Long Term Capital and Operational Plan

Summary Document September 2024

Acknowledgement of Country

Sydney Water respectfully acknowledges the Traditional Custodians of the land and waters on which we work, live and learn. We pay respect to Elders past and present.

First Nations peoples have been caring for Greater Sydney's land and waterways for thousands of years. Water is deeply entwined with First Nations culture and well-being and Sydney Water embraces a Caring for Country approach to waterway health. We will continue to work together to provide safe, affordable and reliable water services for future generations and to align with First Nations practices to restore our connections with water, land and each other.

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01 **Context and requirements**

Creating a better life with world-class water services

Customers are at the heart of everything we do.

The Long Term Capital and Operational Plan is an adaptive plan that captures Sydney Water's key infrastructure and operational decisions to 2050.

Our plan is aligned with the NSW Government's vision for Greater Sydney and our customer values, both of which actively inform our investment choices. This plan provides the long-term context for future pricing submissions to IPART.

We balance cost and risk in an adaptive plan to ensure it always reflects what our customers expect of us and will support the growth and resilience of Greater Sydney for the next 25–30 years.

The Greater Sydney Water Strategy underpins our long term planning



The LTCOP is aligned with and supports the NSW Government's vision, as outlined in the NSW State Infrastructure Strategy as well as the government's priority for Transport Oriented Development, diverse and well located homes and urban greening of the city



Support economic growth and community wellbeing by providing confidence in the security and sustainability of Greater Sydney's water supply to meet growth and adapt to a changing climate by 2040 and beyond



Identify the strategic pathways to ensure the right investment decisions are made at the right time in consultation with customers and the community



Set the pathway to **identify highest** economic value and most affordable investment portfolios for water infrastructure



Additional 20 GL/y Increase use of Sydney **Desalination Plant**

Continue planning for new rainfall-independent supply options

49 GL/y water saving by 2040



Desalination



Invest in upgrades, new connections and leak management

Integrate our water and land use planning more effectively



Invest in wastewater and improve waterway health

Our plans, forecasts and budgets

Our enterprise planning approach integrates our planning and budgeting processes to deliver value for our customers. Each stage of the process provides insight and is used to inform the next level of the plan.

LONG TERM



Evidence based and adaptive plan for servicing Greater Sydney to 2050, incorporating how Sydney Water will deliver best value to customers and manage uncertainty.

Noted by Portfolio and Shareholder Ministers

MEDIUM TERM



Enterprise Business Plan (Statement of Corporate Intent)

An annual statement of Sydney Water's objectives, strategy, KPIs and financial policies, which includes a rolling 10-year outlook for revenue, operational and capital investments.

Agreed with the Shareholding Ministers

NEAR TERM

Regulatory Price Submission

A detailed 5-year proposal backed by customer engagement outlining the revenue, operating and capital investment needs which is used by IPART to set tariffs for customers.

Endorsed by the Independent Pricing and Regulatory Tribunal (IPART)

Objectives

The objective of the LTCOP is to set the long-term servicing direction for Greater Sydney.



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WATER

We have engaged our customers to align our investments to what our customers value.

WATER

We have made informed investment decisions that give regard to cost, risk, levels of service and future uncertainty.



We have engaged our stakeholders to align expectations on key investment decision triggers, future infrastructure investments and important policy areas that require further exploration.



We seek to maintain affordability for customers and intergenerational equity (social, economic and environmental).

Our key assumptions

Warragamba Dam operating level The Full Service Level of the dam will not be increased for water supply or decreased for flood mitigation	Workplace exposure standards Workplace exposure standards for airborne contaminants (e.g. hydrogen sulphide) will not change	Major system decentralisation System configuration remains broadly centralised – for example, impact of broad scale use of in-home water supply systems not considered	Changes to the bulk water supply model Ownership of assets remains consistent with current arrangements	Business Model Our model will remain consistent with potential to explore opportunities in tangential markets such as resource recovery and energy generation
Population Reflect Department of Planning, Housing and Infrastructure's Main Population Projection released in 2022	Climate change Representative Concentration Pathway (RCP) 4.5 scenario (NARCliM 1.5)	Model drought 1:100,000 drought	Water Quality Standards Achieve Australian Drinking Water Guidelines – date of change assumed 2025 for disinfection by-products and PFAS and related forever chemicals	Wastewater Quality Standards Achieve new Hawkesbury Nepean Framework requirements from 2026 and existing coastal plant licence conditions as minimum
Dry weather network discharge Zero dry weather discharge	Wet weather overflows Achieve current Environmental Protection Licences for wet weather as a minimum	Recycled water Service provision under existing cost recovery model	Property tax Required to pay tax on land (stormwater servicing in Mamre Road Precinct and Aerotropolis excepted)	Land acquisition We pay for land that supports our assets
Pass through costs Assume current cost for WaterNSW, Sydn Plant, Build-Own-Op pass through for SDI based on rate for Wa (Sydney Water takes	structures apply bey Desalination berate Plants. Full P, and pass through aterNSW and BOOs	Weighted Average Cost of Capital (WACC) Current post-tax WACC of 3.6% for FY26-30, 4.4% for FY31-35, 4.6% onwards	Developer charges Levied from July 2024 with staged implementation. First year with 75% discount, second year 50% discount and third year zero discount	Sydney Desalination Plant operation Will run full-time under flexible operation rules

Considerations in developing the LTCOP

The LTCOP:

- sets the long-term servicing direction for Greater Sydney
- is an optimised view of our investment plan to 2050
- provides a basis to meet regulatory requirements, critical stakeholder expectations, and reflect customer preferences and priorities, now and into the future
- positions for foreseeable emerging directions
- is aligned with the NSW Government's housing supply policy, including the Transport Oriented Development (TOD) program, and will support implementing this

- reflects sensitivity to needs of First Nations people
- appropriately balances cost and service risks which reflect rising customer expectations and priorities, including acknowledging post-COVID affordability challenges
- ensures significant investments and decisions are scheduled to balance prudency, risk, and the ability to exploit new technologies or servicing strategies at any given time
- is informed by a confident understanding of when critical decisions will be required for future servicing directions
- identifies, manages and mitigates the key planning risks
- monitors sensitivities and triggers to drive adaptive responses
- allows confident near-term investment and delivery in the context of the long term servicing strategy for Greater Sydney

does not set a budget or replace existing governance processes or delegations.

02 Delivery of our services today and through time



Timeline of Sydney Water investments





Our services

We love water - it's in our name - but we do lots more.

Our systems have served us well for 136 years, but many assets are nearing capacity or approaching the end of their life.

To ensure we can continue to provide safe, reliable and affordable services to customers, we need to invest now to configure our systems for the future. This will protect our city against the impacts of climate change, while ensuring the health and amenity of Greater Sydney's beautiful waterways.





Water conservation has avoided the need for significant investment

Our investment in water conservation means that we have avoided the need to build new drinking water supplies since the end of the Millennium Drought. The city uses around 12% less drinking water than it did 20 years ago despite almost 1 million more people. On a per person basis, drinking water demand is around 36% less than it was in the early 2000s. Water conservation has also avoided investments in wastewater asset augmentation through reduced dry weather flows.



Sydney's Drinking Water Demand over time

* Based on per person water use in 1999 before major water conservation efforts.



Volume of wastewater produced as population grows

Customer bills over time

In real terms, customer bills have decreased over time and have been amongst the lowest in Australia for more than a decade. This is due to our ongoing water conservation efforts; our older asset base, an increasing percentage of which is nearly or fully depreciated; as well as our low level of water system resilience; and current customer and regulatory acceptance of lower levels of coastal wastewater treatment.



Water and Wastewater real price changes

03 Trends and challenges shaping our future

Challenges facing our changing city

In 2050, Greater Sydney will be a very different place to what it is today. We have identified five key trends and challenges which will affect our future operations and impact service delivery.

Growing cities

Urban expansion and increasing population density will require increased drinking water supply, new wastewater treatment facilities, and augmentation and expansion of existing water and wastewater systems for 2 million+ people by 2050. The staging and location of this growth will impact on the cost to deliver services.

Climate change

Our climate is changing, with prolonged periods of heat and rain expected, and extreme weather events continuing to increase in frequency and severity. Variations in climate have a direct impact on our customers, our network and our services. These extremes also impact and challenge our existing assets and require a change of approach for the design of new assets.

Customer expectations

Customers are at the heart of everything we do and their expectations around the services we provide have evolved beyond traditional water and wastewater servicing. Our customers expect Sydney Water to improve the health of our waterways, support their water conservation efforts, and contribute to cool green spaces.

Emerging technology

There will be advancements in the size, speed, intelligence, capabilities, and applications of digital technologies which provide new opportunities to plan, design, build, operate and maintain our assets and systems, but also increases our vulnerability to cyber risks. Advancements can also change the way we interact with customers and how they interact with us.

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Unpredictable events

Evolving geopolitical volatility increases the risk of sophisticated, high impact cyber – and potentially, physical – attacks on critical infrastructure entities such as Sydney Water. There is also uncertainty as to the timing of other unpredictable events including pandemics, supply chain interruptions and drought.

Our city is rapidly growing

DPHI predicts Sydney's population will increase by 1.8 million people by 2050 (a 35% increase), which is 50% more growth than in the previous equivalent period.

The high level of investment in growth in the next 10 years is a result of the number and geographic spread of growth fronts being initiated across the city, particularly in greenfield areas including:

- Western Sydney Aerotropolis Growth Area
 and South West Growth Area
- · Central and Eastern City
- Greater Macarthur
- North West Growth Area

- Greater Penrith and Western Sydney Employment Area
- Illawarra
- Transport Oriented Development precincts

All asset investments are optimised for staging opportunities.

There are eight accelerated TOD precincts, as well as another 24 TODs to be implemented through an amendment to the State Environment Planning Policy (Housing) (Housing SEPP) within our area of operations.



Our climate is changing

It is anticipated that climate change will increase the frequency and severity of natural hazards – bushfires, storms, floods, heatwaves, and rising sea levels – across our region, and we recognise we need to both address the causes and adapt. We are investing now in line with our customers values.



We are keeping our resources (water, materials and energy) in use at their highest value and implementing more efficient and renewable ways to power our services.

We will accelerate our Net-Zero commitments ahead of the NSW Government's target, in line with our customers' expectations. We are ensuring our existing infrastructure can withstand more extreme weather and restoring damaged ecosystems and revitalising public spaces for communities.

Climate change adaptation practices are embedded in our core business practices.

Some examples of the impacts of climate change on our services

Up to \$3B in restoration cost for assets exposed to climate hazards 30GL reduction in surface water yield in short term increasing to 80GL by 2050 Reduced inflows into dams in drought by up to 10% (inour1:100,000 design drought)

Increase in average annual demand by up to 3% 16% increase in monthly demand variability

Our customer priorities

Through the Our Water, Our Voice community engagement program, our customers have identified priority outcomes and their relative importance.

1

Maintaining safe and clean drinking water



Ensuring water/wastewater bills remain affordable



Ensuring waterways/water recreation areas remain clean and safe to use

4

Enhancing the water network's resilience to drought through water recycling and/or desalination



Reducing water loss by minimising leaks and breaks in Greater Sydney's pipe networks

Emerging digital capability and geopolitical threats

- Enhancing the digitisation of our infrastructure provides multiple benefits for the delivery of our services, however it also brings additional risks due to how our digital and physical infrastructure operates and the ongoing geopolitical environment
- Our world has become more complex, with a greater deal of uncertainty around the rise of geopolitical forces across the Asia-Pacific region
- Evolving geopolitical volatility increases the risk of sophisticated, high impact cyber and potentially physical attacks on critical infrastructure entities such as Sydney Water
- Like all utilities, we will need to enhance our technology and implement redundancy measures to protect the integrity of the network and customer data.





04 Our approach to developing the Long Term Capital and Operational Plan

Success criteria

We have established the LTCOP under an adaptive approach so we can make decisions in response to investment triggers through time for the most optimal, cost effective and sustainable outcome.

The Plan's success will be determined by the following criteria:



our predictable income stream, introduction of infrastructure contributions and significant growth in our regulatory asset base provides strong cash flows for funding the capital investment. However, the financing approach needs to also consider affordability.

05 **The adaptive plan**



Our approach to the future

What our long-term planning is telling us about our approach to servicing Greater Sydney into the future.

Current context

Our existing systems have served us well, but they are aging and were built based on technology and requirements of their time.

Continuing to transfer water from dams in Western Sydney to coastal wastewater outfalls in the east will put increasing pressure on our systems, with this arrangement becoming less resilient to shocks and stresses over time.



Customers in Sydney benefit from significant economies of scale, but this comes with an over reliance on Warragamba Dam and Prospect WFP, with both assets servicing 80% of Greater Sydney. Sydney currently has the lowest rainfall independent water sources of any major city in Australia at up to 15%.

Over 60% of Sydney's wastewater is high-rate primary treated before being discharged to the ocean, relying on dispersion to minimise environmental impacts.

Future direction

In the context of current issues and technology, we have two strategic planning opportunities around system configuration and service reliability.

Our servicing direction for Greater Sydney is to manage risk by disrupting the west to east flow through further decentralisation from our largest water and wastewater systems.



We will do this by building new rainfall independent sources of water and using our resources more than once, particularly through purified recycled water (PRW), which will avoid very costly wastewater augmentations and reduce dependence on single assets.

This will not only improve resilience and our ability to adapt to change, but will also better enable waterway health outcomes and reduce the cost of renewing aging assets.

How the LTCOP will help us build thriving, liveable sustainable cities







The adaptive pathway

This plan outlines the key decision points that could significantly alter our levels of investment or change our direction of servicing. The total range of investment to 2050 is \$80 – \$92 billion, depending on the pathway taken.

Our plan is optimised for both capital and operating costs to ensure we can provide services to customers in line with their expectations, meet our obligations to regulators and stakeholders, while also managing future risks at the lowest total cost.

To secure this pathway, it is essential that we commence disconnection of inland wastewater systems from the coast in a timely manner and that PRW supports customers' future water needs.

Outcome

Environmental Protection (Protect our waterways and environment for both new and existing customers)

0 – 10 years

Warragamba Deep Water Pumping



Water Quality and Reliability (Deliver reliable drinking water for new and existing customers)

Water Quality and Reliability (Deliver safe water for new and existing customers

Upgrades to manage poor raw water quality

Drought

0

Optimised Pathway (\$83B)

Alternative Pathway

(\$80B if Mamre Rd and Aerotropolis stormwater servicing reverts to on-lot servicing with Councils; \$92B if coastal wastewater discharge performance requirements increase and PRW is no longer supported by government)

10 years +



Alternative Pathway (\$80B if Mamre Rd & Aerotropolis stormwater servicing reverts to on-lot servicing with Councils; \$92B if coastal wastewater discharge performance requirements increase and PRW is no longer supported by Government)

Our key drivers for expenditure

To 2050, Sydney Water will invest in the order of \$83 billion to service our future city, with \$32 billion of that investment needed in the next 10 years.

Key driver

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1	Enable the government's growth ambitions through expanding infrastructure capacity to support the delivery of Sydney's regional growth plan.
2	Renew our assets to meet customer service expectations today and in response to the external trends shaping our future.
3	Build a resilient and reliable water supply through investing in rainfall independent sources, eliminating single points of failure across our assets, interconnecting our systems, and managing cyber security threats.
4	Expand our stormwater services to contribute to improved waterway health through more integrated servicing of recycled water across Western Sydney.
5	Digital enhancements to our physical assets to lay the foundations of our asset management system and support data driven decision making for improved customer outcomes.
6	Protect public health to ensure the wellbeing of our customers and community through the products and services we offer.
7	Protect and enhance the environment by improving the way we manage our wastewater and stormwater systems to prevent pollution and protect against failure.
8	Enhance our climate change response through delivering against our environmental and social obligations and identifying new sources of value that deliver a positive benefit to the economy

Major investments over the next 10 years

We need to invest \$32B in capital between FY2026 and FY2035. This is an average annual capital spend of around \$3.2B over the next 10 years, while the annual average over the past 10 years was \$1.1B.

This is nearly three times as much capital expenditure compared to recent past.

Almost half of this investment is required to deliver new services to growth areas across Greater Sydney.

The remainder is mainly driven by the need to renew our assets to ensure we can continue to provide great services to existing customers; building a new water supply source to close the growing gap between water supply and water demand; and stormwater services in Western Sydney to protect waterway health and provide for a cooler, greener Western Sydney.



- Picton WRRF upgrades and renewals
- 2 Nepean WFP upgrades
- 3 Cascade WFP upgrade
- Orchard Hills WFP upgrades
- Prospect WFP upgrades
- 6 Greater Macarthur growth servicing
- Malabar WRRF upgrade
- Sydney Desalination Plant Stage 2 Expansion
- (9) Wet Weather Overflow Abatement Program (WWOA)
- 10 Bondi WRRF upgrades and renewals
- New Upper Nepean WRRF with advanced treatment capacity and wastewater network
- Macarthur WFP expansion and upgrade
- (3) North West Treatment Hub upgrades (Riverstone, Rouse Hill, Castle Hill)
- Liverpool and Glenfield WRRF upgrades for purified recycled water treatment
- Mamre Road and Aerotropolis Integrated Stormwater Scheme
- Delivery of Upper South Creek WRRF
- 1 New Camelia WRRF
- Prospect Pumping Station
- South West Growth Area and Western Sydney Aerotropolis growth servicing
- 200 Quakers Hill WRRF upgrade for purified recycled water treatment

- South West Growth Area and Western Sydney Aerotropolis growth servicing
- Quakers Hill WRRF upgrade for purified recycled water treatment
- 2 West Hornsby WRRF upgrades
- 2 North Head WRRF upgrade
- 8 Nepean WFP expansion
- Prospect to Orchard Hills and Prospect to Macarthur Interconnectors
- Bondi to Malabar Transfer Main
- 20 Fairfield WRRF upgrades for purified recycled water treatment
- North West Treatment Hub upgrades (Riverstone, Rouse Hill, Castle Hill)
- 28 North Richmond WFP upgrade
- Opper South Creek WRRF upgrades
- Prospect to Orchard Hills and Orchard Hills to Macarthur Interconnectors
- 3) Wet Weather Overflow Abatement Program (WWOA)
- Camellia WRRF upgrades for purified recycled water treatment
- 3 Illawarra Desalination Plant
- New Arncliffe WRRF with purified recycled water treatment capacity

What our investment will deliver by 2050

of our drinking water supply will be rainfall independent



Generational change is required to meet current and future challenges

Our assets have served us well, but many are reaching the end – or have exceeded – their lifecycle. This, as well as future challenges, poses an increased risk to our ability to maintain the standards of service that our customers expect and value.

The Long Term Capital and Operational Plan outlines a prudent, balanced approach to investment which optimises cost impacts to customers by investing at the right time to mitigate risk and build greater resilience in our systems.

Our customers have benefited over time from significant economies of scale through the way we operate. Our service delivery outcomes have favoured decreasing customer bills in real terms over the last decade. Customer bills are expected to rise during the term of the Plan, which is sensitive to customer affordability and structured in ways that encourage intergenerational equity. This impact would be heightened if infrastructure contributions were not included.

06 Delivering value for our customers

Delivering through our Enterprise Plan

To secure the future outlined in this Plan, there are several enterprise planning actions that Sydney Water will progress as a priority, as reflected in our price proposal.

> 1	Scale-up the business to deliver the increased investment prokey strategic interventions relating to industry intelligence, optisupplier management	
2	Continue our engagement with customers ensuring that our e strategy and plans align with the latest customer preferences, expectations and willingness to pay	
3	Increase community water literacy and work with stakeholders support for new water supply options, including PRW, as well conservation initiatives	
4	Embed our 'Future Ready' organisational realignment to ensu are effective and that we are set up to deliver our customer pr	
> 5	Enhanced monitoring and control of infrastructure through the of Things (IoT) program, uplifting existing automation capabilit implementation of a digital twin	
6	Reduce service and asset performance risk and sustain good practices to support long-term planning and asset creation an outcomes for our customers	-
7	Deliver Net-Zero Carbon Program ahead of government targe investment based on customers demonstrated willingness to p	-
8	Implement Protective Security and Emergency Management of delivery of physical security services to ensure continued prot assets in line with the Security of Critical Infrastructure Act	



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