



Strategic Investment Plan

2025-2035

Environmental Protection



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.





Summary

Outcome objectives

This Environmental Protection Strategic Investment Plan sets out how we will deliver on our outcome to ensure we protect our waterways and environment now and for the future. It is focused on five objectives aligned to customer priorities and preferences:

1. Prevent pollution
2. Recover resources
3. Cool, green and natural, places
4. Net zero carbon emissions
5. Climate resilient systems.

Customer priorities

Through the Our Water, Our Voice engagement program, customers have told us one of their top priorities is for us to reduce pollution and enhance environmental performance. They want healthy waterways and habitats, better use of wastewater and stormwater, more use of recycled water for cool, green, public places, net zero emissions and better resilience in our systems.

Expenditure to deliver outcomes

We will invest **\$26 billion over the 10 years to 2035 (48% of all expenditure)** delivering the environmental protection outcome, ensuring our performance measures and targets are met across all objectives:

- **\$20,139 million in capital infrastructure investment:** Build new wastewater and stormwater infrastructure and upgrading the capacity of existing infrastructure to retain the reliability of our services for new and existing customers while protecting the environment. Improve wastewater treatment and networks including deliver a new advanced water recycling centre at Upper South Creek, and improve our largest wastewater system, Malabar. Continue to manage risks by renewing assets, enhancing our wastewater maintenance planning and response and using new digital tools.
- **\$5,601 million in operating expenditure:** Deliver integrated water cycle servicing to new customers in Western Sydney, protect local waterways through operating and maintaining our wastewater systems and invest in reducing our carbon emissions.

Ways this plan will make a difference

Prevent pollution of waterways

Upgrade our water resource recovery facilities to ensure we meet our discharge licence requirements for core pollutant concentrations, protecting waterway health.

Reduce environmental harm

Minimise the risk of significant incidents, such as overflows into waterways, by improving how we operate and maintain our assets, as well as undertaking targeted renewal of old and high-risk wastewater pipes.

Recover resources

Increase the amount of recycled water available for supply from treated wastewater and harvested stormwater to around 62 GL per year, reducing water loss to the environment.

New regional integrated stormwater servicing

Deliver Australia's largest stormwater harvesting program to reduce damaging flows in waterways in Western Sydney, supporting urban cooling and greening.

Cool, green natural places

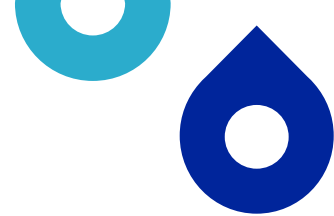
Actively manage nearly 30% more Sydney Water land to conserve waterways and habitats, incorporating Caring for Country practices and collaborating with the community and First Nations people.

Net Zero carbon emissions

Achieve Net Zero carbon in our operations by 2030 by expanding solar and wastewater energy, securing a power purchase agreement, and using credible carbon offsets to cut over 334,000 tonnes of CO₂-e emissions

Climate resilient systems

Advance our business climate risk management maturity and invest prudently to ensure water services and infrastructure can cope with climate change.



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Introduction

Sydney Water's Strategic Investment Plans (SIPs) show how over the next 10 years we will achieve our strategy and vision to create a better life with world-class water services. Informed by our Long Term Capital and Operational Plan (LTCOP) and insights from the customer engagement program Our Water, Our Voice, the five SIPs outline our medium-term (10-year) targets, measures, and key activities for our outcomes

- Customer experience
- Water quality and reliability
- Environmental protection
- Accountable, agile, innovative culture
- Successful and sustainable business

These SIPs are essential for achieving our customer outcomes, balancing expenditure with risk, performance, cost, and customer price impacts. They support our price proposal to the Independent Pricing and Regulatory Tribunal (IPART), business planning, and financial budgeting. They also integrate with other asset management and operational planning.

We will hold ourselves accountable for performance of these outcomes via annual reporting to customers and the regular corporate performance reporting process with the Sydney Water Executive and Board.

This **Strategic Investment Plan** sets out how we will deliver on our **Environmental Protection** outcome to ensure we protect our waterways and environment now and for the future, focused on five objectives:

1. Prevent pollution
2. Recover resources
3. Cool, green and natural places
4. Net zero carbon emissions
5. Climate resilient systems.

Protecting the environment is fundamental to why Sydney Water exists and a principal objective under the *Sydney Water Act 1994*. Through the Our Water, Our Voice engagement program, customers have made it clear they expect us to improve waterway health, reduce pollution, and enhance environmental performance. Managing and preventing pollution from our wastewater services and responding to climate change is also a major responsibility for us under NSW Government expectations, pollution-control regulation and our Operating Licence performance standards.

Our strategic investments are affordable, deliverable, and aligned with our risk tolerance, ensuring we meet and exceed customer and stakeholder expectations. This approach underscores our commitment to keeping customers at the heart of everything we do.



What we heard from our customers

Sydney Water is evolving and moving towards becoming a customer-led organisation in line with global best practice for water utilities. Over the last 2 years we have built on our customer engagement program by actively engaging with customers to develop outcomes aligned with their preferences and priorities. In July 2022 we started a customer engagement program called Our Water, Our Voice, the largest in Sydney Water's history, with over 13,000 customers participating over 21 months and 6 phases of engagement.

The feedback gathered through the customer engagement process summarised below informs our objectives, measures, targets and delivery plan. Customers' priorities are consistent with pollution-control regulations and planning laws, our Operating Licence performance standards and environmental reporting requirements. Customers told us they care about the following priorities:

Protect the environment: Customers expect us to hold ourselves to a high standard of environmental performance in providing wastewater, recycled water and stormwater services. Customers said we should not increase risk to the environment, and in some cases, customers said they want Sydney Water to perform better than regulated standards. Customers are generally happy with the reliability of the day-to-day wastewater services we provide to their homes and businesses.

Healthy waterways: Customers value clean local waterways for their benefits to health and recreation. Many customers are positive about the state of Greater Sydney's beaches, but not the health of the region's rivers. They value protecting the natural environment and creating places for plants and animals to thrive, and the benefits this creates for the community. Swimming and water recreation is valued yet a second priority compared to the other values.


Community amenity: Customers value community outcomes like contributing to a cooler environment and more pleasant green spaces, facilitated by more use of recycled stormwater and wastewater. They dislike the reliance on drinking water for irrigation, particularly during drought or extended dry weather. Customers told us we should prioritise our investment where it would have the largest positive impact on community, and where it is most in need of this investment (i.e. drier, hotter locations).

Caring for Country: The lands and waterways around Sydney hold important significance and cultural importance to our First Nations customers and community. Our First Nations customers identified the importance of cultural integrity and respect in our service provision. This includes how we approach management of our land and Care for Country.

Future sustainability of Greater Sydney: Our customers support initiatives that underpin the delivery of new housing and prosperity without undermining the environmental qualities they value. They want us to

Environmental protection Ranked customer identified priorities

- 03 Maintaining clean, safe waterways and water recreation areas by reducing pollution
- 04 Enhancing the water network's resilience to drought through building water recycling and/or desalination infrastructure
- 07 Improving natural waterways and habitats to protect the environment
- 08 Reducing water loss to the ocean by improving stormwater management, capture, and storage
- 11 Contributing to a cooler environment and more pleasant green public spaces through trees and vegetation
- 13 Reducing net carbon emissions to zero by 2050 or sooner via more energy efficient operations and renewable energy



improve opportunities for stormwater management and harvesting and water recycling for cool, green and natural spaces.

Climate change mitigation: Customers think the Government should take the lead in reaching net zero carbon emissions. Because of this, they also believe Sydney Water should reduce its carbon emissions to net zero. They value an acceleration of Sydney Water’s targets, given relatively low cost to achieve.

Climate change adaptation: Adapting and being resilient to climate change is consistent with our insights from stakeholders to respond to climate change and be able to guarantee water supply, and address aging infrastructure for a growing population. Our customers prefer preventative approaches, for example, uses of water and wastewater that would mitigate against the two main risks identified by the community – drought and flood.

Opportunities



Prevent Pollution

- Population growth and tighter regulatory standards create drivers to invest in higher quality wastewater management that meets customer outcomes and community expectations for environmental protection and public health. This will require significant investment to upgrade our WRRFs and address overflows.
- Use monitoring, real time sensors, analysis and predictive tools us to better understand how our wastewater systems perform and interact with the environment, enabling targeted, cost-effective improvements.
- Respond to new standards for nutrient discharges in rivers by restoring waterways and providing community and environmental benefits.
- Working with customers and partners to prevent pollution at source.



Recover resources

- Respond to the challenge of increasing water demand and climate change through greater recycling of wastewater and stormwater, including purified recycled water.
- Apply circular economy principals to reduce waste to landfill costs and recover more materials. Design and deliver new assets to reduce waste.
- Engage with policy makers and regulators to inform updated standards for biosolids, recycled water and manage contaminants of concern.



Cool, green and natural places

- Provide stormwater services to more customers, while naturalising and improving waterways, supporting nature and harvesting stormwater.
- Work with partners to manage waterways and catchments.
- Provide more recycled water and stormwater for public open space where feasible.
- Maintain and enhance our land holdings that have natural values, drawing on the skills and knowledge of our First Nations community.



Net Zero carbon emissions

- Address our exposure to volatile electricity costs and reduce our carbon emissions even as our asset base grows, through renewable energy and energy efficiency.
- Transition to Net Zero by using cost-effective and high-integrity solutions including a power purchasing agreement and carbon offsets.



Climate resilient systems

- Build climate resilience into our business and supply processes to maintain the resilience of our services and our assets, and improve the maturity of our climate risk assessment and investment planning.
- Demonstrate climate leadership to our customers and our industry.

Expenditure








Total proposed expenditure in the Environmental Protection SIP is almost \$26 billion over the 10 years from 2025 to 2035. Around 56% of this expenditure will go towards building new wastewater and stormwater infrastructure and upgrading the capacity of existing infrastructure to retain the reliability of our services for new and existing customers while protecting the environment. Key elements of our investment plan are delivery of a new Advanced Water Recycling Centre (AWRC) at Upper South Creek, and improvements to our largest wastewater system, Malabar. We are managing risks by renewing assets, enhancing our wastewater maintenance planning and response and using new digital tools. We will deliver integrated water cycle servicing to new customers in Western Sydney, protect waterways and invest in reducing carbon emissions.

Budget summary 2025-2035

Forecast expenditure (\$2024-25 in millions)	Category	2025-30	2030-35	Total 10yr
Extend wastewater treatment and network infrastructure capacity and meet environmental requirements in response to growth including: <ul style="list-style-type: none"> - Upper South Creek AWRC and pipelines - New Upper Nepean AWRC and Camellia AWRC - Malabar wastewater system augmentation - Hawkesbury Nepean nutrient framework including North West Treatment Hub upgrades 	Capex	5,597	5,722	11,319
Wastewater treatment renewals at water resource recovery facilities (WRRFs) including Bondi	Capex	1,255	1,617	2,872
Critical trunk main renewals including NSOOS program	Capex	1,110	1,094	2,204
Wastewater network (reticulation and pumping station) renewals	Capex	440	600	1,040
Wet weather overflow abatement program	Capex	242	238	480
Wet weather internal surcharge program	Capex	80	98	178
Vaucluse Diamond Bay upgrade	Capex	85	-	85
WRRF operations and maintenance including energy, chemicals and asset management (excluding biosolids and renewable energy facilities)	Opex	1,217	1,277	2,493
Wastewater network operations and maintenance including mechanical and electrical assets, energy, chemicals and asset management.	Opex	913	1,056	1,969
Riverbank restorations (Hawkesbury-Nepean Nutrient Management offsets)	Opex	65	-	65
Wastewater source control (trade waste)	Opex	18	17	35
Wastewater and environmental compliance including: <ul style="list-style-type: none"> - Laboratories, monitoring, customer hub operations - Environmental Performance Improvement Program - Modernise Wastewater Regulation - Other governance and licence costs 	Opex	187	252	438
Digital investment to support environmental protection including (for 2025-30): <ul style="list-style-type: none"> - Monitoring and modelling activities such as smart sensors (Internet of Things) and wastewater blockage detection 	Digital invest	45	42	87
Digital core opex supporting environmental protection	Opex	45	45	90

Forecast expenditure (\$2024-25 in millions)	Category	2025-30	2030-35	Total 10yr
Committed recycled water schemes, including Sydney Science Park (<i>unregulated schemes not shown in budget</i>)	-	<i>Refer prevent pollution</i>		
Purified Recycled Water scheme	-	<i>Refer Water Quality and Reliability SIP</i>		
Biosolids handling facility upgrades - North Head WRRF (<i>no allowance for enhancement to new regulations</i>)	Capex	34*	-	34*
Unlocking the Circular Economy through delivery of Upper South Creek resource projects	-	<i>Included in other items</i>		
Recycled water operations and maintenance	-	<i>Refer prevent pollution</i>		
Biosolids and sludge beneficial reuse and disposal	Opex	110	114	224
New regional integrated stormwater harvesting and recycled water scheme (Aerotropolis and Mamre Rd)	Capex	1,442	1,704	3,145
Waterway Health Improvement Program	Capex	53	52	104
Maintenance of stormwater natural assets including new assets	Opex	48	184	232
Stormwater naturalisation projects, property environmental management plans	-	<i>Included in other SIPs</i>		
Emission reduction capital projects including: - new solar generation - renewable energy facilities - energy efficiency upgrades	Capex	77	24	101
Renewable energy facilities operations and maintenance	Opex	44	56	100
Other net zero carbon program activities including securing power purchase agreement and carbon offsets	-	<i>To be explored – no current allowance</i>		
Advance climate change adaptation & governance – climate risk assessment	-	<i>Included in other items. No dedicated capital program.</i>		
Infrastructure portfolio and other adjustment* (estimate)	Capex	(974)	(564)	(1,538)
Opex adjustments (Right-of-use assets and unregulated activities)	Opex	(25)	(21)	(46)
Total capex for environmental protection outcome	Capex	9,480	10,625	20,139
Total opex for environmental protection outcome	Opex	2,622	2,979	5,601

Key:

 Prevent Pollution	 Recover resources	
 Cool, green and natural places	 Net Zero carbon emissions	Percentage of total 10yr
 Carbon resilient systems	 Overall outcome level	

Notes:

- Years indicated refer to financial years (i.e. 2025–30 refers to the period between 1 July 2025 and 30 June 2030).
- Dollar amounts are presented in 'real' terms (without inflation) as at 1 July 2024.
- Capex forecasts are more certain for near term activities that have progressed past planning stages.
- Opex includes controllable and non-controllable costs.
- Digital investment includes project capex and an operational component that can't be capitalised ('propex') - this is already included in the digital core opex - only the capex component of digital investment is added to the total capex.
- Allocation of adjustments and efficiencies are estimates as these are applied at portfolio level. Corporate level adjustment for opex efficiencies allocated to the Successful and sustainable business SIP.
- *includes adjustment for biosolids capex which is embedded in the wastewater treatment capex item

Our investment approach

Objective	Prevent pollution	Recover resources	Cool, green and natural places	Net Zero carbon emissions	Climate resilient systems
Commitment to customers	We prevent pollution of waterways and the environment by improving our wastewater and stormwater systems. We support our community to control pollution at source.	We maximise recycling and reuse of water, energy and materials. We minimise and manage our waste.	We contribute to community wellbeing through recycled water to green and cool public spaces. We care for Country, conserve and restore waterways and natural habitats	We achieve Net Zero carbon emissions in our operations from 2030 in response to the increasing impact and risk of the changing climate	Our water services and infrastructure (drinking water, wastewater, recycled water and stormwater) can cope with climate change
Customer priorities	Priority 3: Maintaining clean, safe waterways and water recreation areas by reducing pollution Priority 7: Improving natural waterways and habitats to protect the environment	Priority 8: Reducing water loss to the ocean by improving stormwater management, storage and capture	Priority 11: Contributing to a cooler environment and more pleasant green public spaces through trees and vegetation, and improving natural waterways	Priority 13: Reducing net carbon emissions to zero by 2050 or sooner via energy efficient operations and renewable energy	Priority 4: Enhancing the water network's resilience to drought through building water recycling and/or desalination infrastructure
Why this is important to our customers	Customers value clean local waterways for their benefits to health and community life, and avoid waterways that are polluted. Customers want to protect oceans, rivers and streams and expect Sydney Water to do the same. They believe too much wastewater is sent to waterways when it could be treated and reused.	Customers think Sydney Water can improve how it handles stormwater by capturing, storing, and reusing this water for purposes like irrigation. This would help save drinking water for people to use.	Customers want public spaces to be planted and watered wisely to keep them green and pleasant, but prefer recycled water be used for keeping these spaces green. Customers want Sydney Water to improve waterways for nature	Customers think the Government should take the lead in reaching Net Zero carbon emissions. Because of this, they also believe that Sydney Water should reduce its carbon emissions to zero sooner than 2050.	Reducing risks to weather events and improving resilience is important because climate impacts can affect all the products and services, more so as our population grows.
Service level aim	Improve/maintain	Improve	Improve	Improve	Improve
What our investment will deliver by 2030	Ongoing wastewater treatment and networks renewals, operations and maintenance	Deliver committed recycled water schemes (unregulated), including Sydney Science Park	Deliver new regional integrated stormwater harvesting scheme (Aerotropolis Mamre Rd)	Deliver Net Zero carbon program including complete emission reduction capital projects	Establish a program to identify and prioritise climate change risks
	Complete Malabar System Augmentation near-term works	Complete North Head WWRF Biosolids Amplification			
	Complete Upper South Creek Advanced Water Recycling Centre & Pipelines	Unlocking the circular economy through delivery of Upper South Creek resource projects	Ongoing Waterway Health Improvement Program	Secure Power Purchase Agreement (PPA)	
	Invest to meet the Hawkesbury Nepean Nutrient framework including North West Treatment Hub, and river restorations		Ongoing stormwater naturalisations, riparian land / bushland management	Purchase carbon offsets	
What our investment will deliver by 2035	Provide wastewater services to support growth including upgrade the capacity of Water Resource Recovery Facilities and new Upper Nepean and Camellia Advanced Water Recycling Centres	Enhance biosolids management to meet likely new regulated standards.	Extra recycled water (including stormwater) for public open space irrigation (including Greater Parramatta and Olympic Peninsula recycled water)	Maintain ongoing Net Zero status and Net Zero carbon program maturity	Further improve our suite of adaptation and resilience responses
	Reduce wet weather overflows				

Objective 1: Prevent pollution

We prevent pollution of waterways and the environment by improving our wastewater and stormwater systems. We support our community to control pollution at source (Customer priority 3 and 7)

We will:

- Improve our wastewater and stormwater management to prevent pollution despite increasing pressures from population growth and climate change
- Protect our oceans and waterways by reducing pollution
- Improve waterway quality by reducing water pollution and litter from stormwater and wastewater.

Performance measure	Aim	Baseline	Targets			
		23-24	24-25	25-26	29-30	34-35
Quality of treated wastewater (concentration – core pollutants): Percent of water resource recovery facilities where quality of wastewater discharged complies with annual concentration limits of core pollutants that treatment plants are designed to treat.	Improve the performance of wastewater treatment facility assets focused on quality of treated water discharged to meet annual concentration limits of core pollutants 100% of the time by 2030.	96.2%	≥88.5 %	≥84.6 %	100%	100%
Pollution and environmental harm incidents¹: Number of pollution incidents or other incidents that cause, or could have the potential to cause, environmental harm, mainly as a result of wastewater treatment and network incidents. This also includes other incidents such as water discharge, vegetation or heritage impacts ²	Maintain pollution and environmental harm incidents consistent with recent average-weather performance. We have set a variability band of one standard deviation from the long-term average performance which creates an upper bound of 1,497 incidents per year.	1053	≤1053	≤1053	≤1053	≤1053

Rationale and historical context

This objective responds to one of our principal objectives to protect the environment, and our obligations to protect public health. It also responds to one of our customers’ highest priorities - “Maintaining clean, safe waterways and water recreation areas by reducing pollution”. While we aim to operate in a compliant manner, we face challenges – including rapid population growth, increasing costs and timeframes for treatment plant upgrades, and addressing a significant backlog in maintenance. We need to continue to boost our wastewater systems’ resilience to a changing climate, ensure our existing infrastructure is fit for purpose and cater for growth to support Greater Sydney’s housing needs to be able to continue to comply with our responsibilities. We’ll maintain our service level for wastewater overflows affecting customers properties as defined in our Operating Licence.

¹ Where targets are not entirely within our control (e.g. pollution incidents which are impacted by weather), we have factored in a performance band based on reasonable estimate of potential variability. Incidents includes all incidents reported to the EPA (actual and potential)

² Target aims to minimise incidents that harm the environment to better than the long term annual average, taking into account population and network growth this represents improvement. Bands of variability (X) to be incorporated to represent impact of weather variability and targets revised based on end of financial year data and inclusion of all sources of material harm (TBC).

The measures above reflect two main ways Sydney Water manages pollution, the rationale and context of which are summarised separately below.

Quality of treated wastewater (concentration – core pollutants)

Managing the quality of the wastewater that we discharge to the environment is our primary regulated obligation in wastewater treatment. Our target focuses on concentration of core pollutants because it is largely controllable by Sydney Water and demonstrates our ability to plan and invest for growth and maintain our assets.

We're continuing to improve our treatment of wastewater to protect the environment and public health and meet operating challenges. For example, the overall load of nutrients we discharge into the Hawkesbury Nepean River has declined over the long term as we have improved treatment technology, but this trend is reversing due to rapid population growth in this catchment. Weather conditions also have a significant effect on the volume of wastewater we treat and loads of pollutants we release. Climate change will put greater pressure on our systems as wet weather events become more frequent and severe. Changes in regulation in 2020/21 tightened regulated limits, and more changes to limits are expected to be introduced in the near future.

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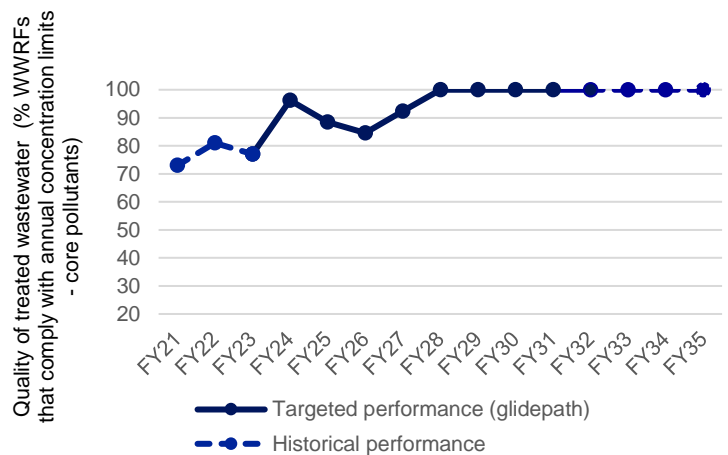
We need to continue to invest to maintain and improve the performance of our wastewater treatment facilities and build in resilience so our treatment plants cope with large wet weather events and a growing population to meet our regulated health requirements. We have applied a medium cost, risk and performance profile to our decisions to upgrade to treatment plants, consistent with guidance from customers (Phase 5 Our Water Our Voice). This profile reflects realistic timeframes for implementation while addressing forecast growth, and performance deterioration at plants as assets age. We have forecast a dip in performance that recovers by the end of the period. This is because we anticipate that population growth in some catchments will occur before some upgrades and renewals can be completed.

Pollution and environmental harm incidents

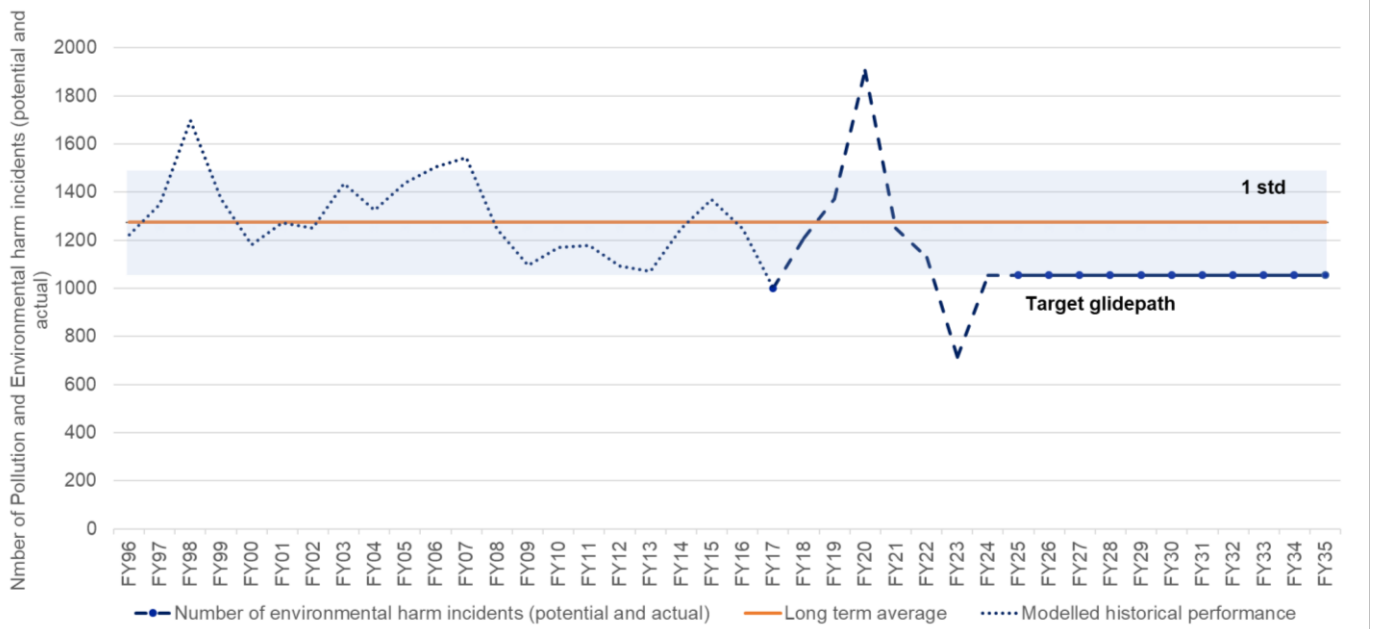
This measure covers all pollution incidents and other incidents that cause actual or potential harm to the environment (as reported to the EPA and other regulatory agencies). The number of incidents is dominated by overflows from our wastewater network, but this measure also counts environmental harm from water discharges, stormwater incidents, or damage to land, vegetation and heritage.

The severity of environmental impact can vary between incidents. Incidents we count in this measure can include wastewater overflows where there is potential for environmental harm, but no immediate evidence of waterway impact. It also includes incidents where actual environmental harm, such as pollution of waterways or vegetation impacts, is observed. We aim to minimise the number of incidents by effectively operating and maintaining our wastewater system, and we mitigate harm by detecting and responding quickly and following response and clean-up procedures.

We have set our future annual targets so they are consistent with our performance in 2023-24, even as our customer base and the size and age of our network increase, and climate conditions become more extreme.



Based on analysis of historical performance (including modelled data), we understand the extent to which weather variability and soil moisture affect our performance. We have set a variability band of one standard deviation from our long-term average performance, which creates an upper bound of 1,497 incidents per year.




Performance over the past three years has been good compared to the long-term average. In 2022-23, the number of dry weather overflows from our network that caused environmental harm was less than half the level recorded during extreme dry weather in 2019. This good performance was driven by several years of very favourable weather conditions with high soil moisture, coupled with improved planned maintenance, detection and response. We are improving our understanding of the severity of different incidents so we can refine management of our network, enhance our response to incidents and provide clear performance reporting. Maintaining a flat trend in environmental harm incidents requires effective management to address growth and the overall asset condition.

We have seen an increase in our asset backlog in recent years. We must address this to maintain network performance and achieve regulated environmental requirements. Our wastewater pumping stations have seen declining performance, creating increased risk of failure, and driving the need for greater investment. We continue to renew our assets and network. We will implement a risk-based approach and methodology so we can target preventative maintenance of assets, and locations, where incidents have a high risk of material harm. This will enable us to manage costs and improve environmental outcomes. Programs of planned maintenance for our pipes includes root cutting. Our investment also helps to avoid incidents through improvements in detection and response.

Strategy for improvement

Quality of treated wastewater (concentration – core pollutants)

We will regularly review our investment programs and closely manage our capital and operational programs for Water Resource Recovery Facilities (WRRFs) to address known challenges, such as delays and cost increases in planning and construction and shortages of skilled staff. This will help us improve performance



and manage bill impacts. We are managing and tracking our performance through our Return to Green program.

We will improve our wastewater treatment capacity, investing in plant upgrades that address the greatest environmental risks and deliver the highest environmental benefit, including:

- **Investing in planned renewals and maintenance of existing WRRFs**, including to reduce pollution incidents for a safe and clean environment for our customers and invest to meet regulatory expectations including Winmalee WRRF nutrient upgrade.
- Investing in **wastewater network renewal** including critical wastewater trunk mains and pressure mains assets that are key to transporting wastewater to the treatment facilities without polluting the environment.
- Investing to meet the new Hawkesbury Nepean Nutrient Framework including **upgrading our North West Treatment Hub** (Rouse Hill, Riverstone, Castle Hill WRRFs).
- **Increasing the capacity of our WRRFs and amplifying networks** to improve performance and meet the needs of a growing population.. We are building Upper South Creek AWRC and parts of its network, and implementing the Malabar System Augmentation (Liverpool, Glenfield and Fairfield WRRFs). We are planning to build new AWRCs at Upper Nepean and Camellia.
- Investing in **work with the Environment Protection Authority (EPA)** as part of Modernise Wastewater Regulation. We will work with the EPA on the **new Stage 2 EPL limits** and will invest in detailed studies and trial approaches to meet new discharge limits at selected pilot plants (likely to be St Marys, Rouse Hill, Wallacia & Bondi WRRF).
- **Enhancing our existing Trade Waste program** and customer education programs to improve Wastewater Source Control. We are investigating cost effective methods to improve the quality of wastewater that customers discharge into our systems.

Pollution and environmental harm incidents

We will conduct a suite of activities to improve wastewater network performance and reduce the risk of significant incidents while maintaining bill affordability. We will deliver this through a focus on increased operational and maintenance efficiency, coupled with targeted capital investment in wastewater network reliability where there is a risk of material harm to the environment including:

- **Capital investment in network renewal** of pressure rising mains, desilting and renewals of major wastewater carriers including critical trunk mains and submains such as SWOOS and NSOOS, and renewals of targeted clay pipes to reduce the risk of high impact incidents.
- **Upgrading our major wastewater networks** to cater for increasing growth
- **Operational efficiency improvement** by building our capability to predict chokes and overflows and continuing our customer wastewater education programs to reduce sewer blockages.
- **Wastewater network maintenance improvement** to improve the resilience and performance of our network as well as reduce our backlog of reactive and planned maintenance jobs. We will use insights from our operational activities to target our planned maintenance so we address assets and locations with the highest risk.

- **Leverage digital technology such as machine learning** to inspect CCTV footage of pipes, so we can quickly detect faults and repair them. We're continuing to invest in internet of things (IoT) sensors and research so we can detect chokes early, before they turn into overflows. New digital investments, such as Flow (see Customer Experience SIP), should also improve our work programming to deliver efficiencies.
- **Environmental Performance Improvement Program** will continue to coordinate improvements in wastewater performance, ensuring we return to compliance and maintain sustainable standards of service. High priority capital projects include SWSOOS and NSOOS critical sewer works, wastewater pumping station renewals, wastewater treatment plant renewals (e.g. Glenfield WRRF, Penrith WRRF, Bombo WRRF), and new infrastructure for growth, including rising mains.

Other improvements to prevent pollution

There are many other activities we are delivering that will help achieve our overall objective of preventing pollution.

- Customers told us that they expect us to reduce litter in the environment. We will **replace stormwater quality improvement devices** and install new ones.
- We will **reduce wet weather overflows** to reduce the amount of diluted wastewater discharged into the environment after heavy rainfall, in line with EPA requirements. In our four largest wastewater networks, we will reduce wet weather overflows by 5 per cent over the price path by reducing the amount of stormwater that enters our systems by fixing our pipes and addressing incorrect stormwater connections. We will target improvements in areas where they will have the greatest benefits for waterway and public health.
- We will **refresh the wastewater system at Vacluse Diamond Bay**. This program is supported by customer willingness to pay evidence and has a positive economic assessment.
- We are planning to **implement environmental offsets to reduce pollution and improve the environment**. We will invest to restore riverbanks and waterways in the Hawkesbury Dyarubbin / Nepean River to help meet requirements of the EPA's Hawkesbury Nepean Nutrient Management Framework and complement the nutrient reduction benefits achieved by upgrades of our WRRFs. Environmental offset projects will have other benefits such as biodiversity, waterway health improvements and public access.

Success factors

- Sustained investment in network assets to address maintenance backlog and declining asset health.
- Increased capacity of treatment plants to accommodate population growth and build climate resilience.
- Improved governance and investment control to provide oversight.

Risks

- Delays to current projects and inception of new projects.
- Climate change impacts on wastewater performance.
- Uncertainty in changes to regulation and regulated limits.
- Maintaining affordability of bills as maintenance and renewal costs increase.

Objective 2: Recover resources

We maximise recycling and reuse of water, energy and materials. We minimise and manage our waste. (Customer priority 4 and 8)

We will:

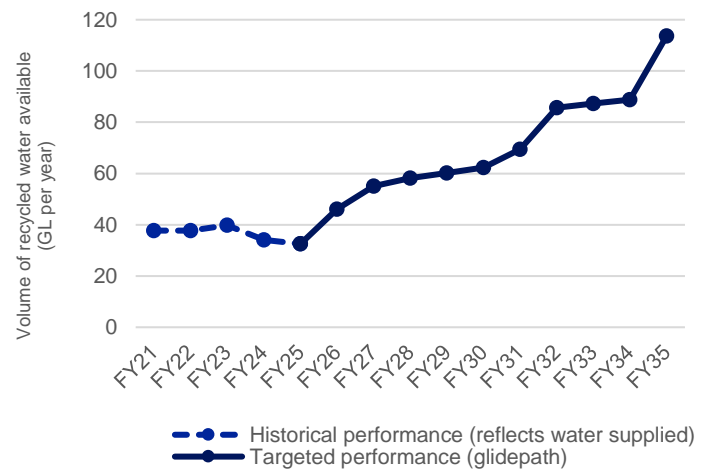
- increase the volume of recycled water available by continuing viable existing schemes and delivering new recycled water and stormwater harvesting schemes
- improve the recovery and reuse of waste materials generated from construction and demolition, operations and in our offices

Performance measure	Aim	Baseline See below	Targets			
			24-25	25-26	29-30	34-35
Volume of recycled water available: Volume of our recycled water that is available for supply including treated wastewater and harvested stormwater (gigalitres (GL)/year)	Improve the volume of recycled water available for supply by increased recycled water from treated wastewater and harvested stormwater and reduce water loss to the environment	5 yr avg (2020 to 2024) 39 GL/yr	33 GL/yr	≥46 GL/yr	≥62 GL/yr	≥114 GL/yr
Materials recovered (recycled and reused): Percentage of waste materials recycled and reused (construction, office and operational) generated by Sydney Water each year (Excluding biosolids)	Maintain current levels to recover materials and ensure they are beneficially reused and recycled	NA	≥85%	≥85%	≥85%	≥85%

Rationale and historical context

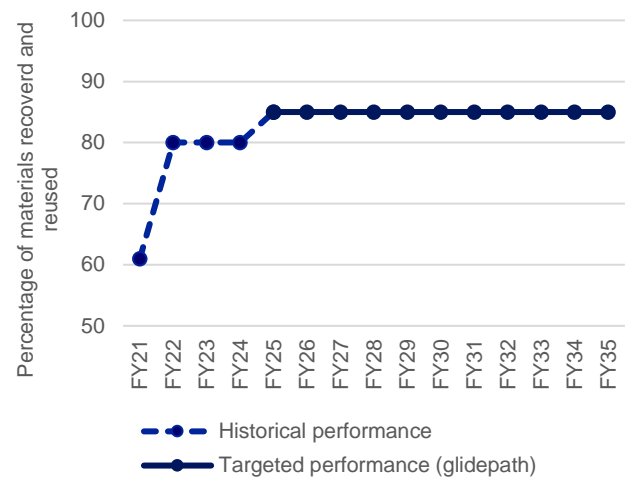
Volume of recycled water available

This measures the amount of recycled water and harvested stormwater that we produce and that is available to use. The amount of wastewater we now recycle is relatively low, at between about 7 and 9 percent of all treated wastewater. We will increase this over time and improve environmental performance and secure our water supply. We are forecasting that recycled water production will increase because we will implement Australia’s largest stormwater harvesting scheme in Western Sydney, provide more replacement flows for rivers, irrigate more green space with recycled water, and begin production of PRW by 2032.



Materials recovered (recycled and reused)

We have significantly improved our solid waste disposal practices and are consistently recovering resources from waste generated. Sydney Water generated 345,748 tonnes of solid waste in 2022-23 and 79 percent was reused or recycled (similar to 2021-22). Of the waste generated from our construction and demolition activities, 84% (242,924 tonnes) was recycled or reused. Sydney Water still sends waste to landfill including unusable biosolids, general solid waste, asbestos-impacted soil and wastewater grit and screenings.



Strategy for improvement

Customers' preferences are for public open space to be irrigated with recycled water, including harvested stormwater, rather than drinking water. This sentiment was reinforced when customers understood that much of Sydney's wastewater is discharged to the ocean while recycled water rates are low.

We will continue to provide recycled water for irrigation, replacement river flows, household and business uses, and in the future, drinking.

We will work with customers, government, and other key stakeholders to ensure our recycled water schemes remain viable, while we continue to meet Australian Guidelines for Water Recycling.


We will develop a roadmap for the implementation of new recycled water schemes (including treated wastewater and stormwater). This will enable Sydney Water to recover more water resources and supply to new precincts for commercial use and irrigation. We have established forums to improve our focus on recycled water production and overcome technical, forecasting and production issues.

We will build confidence in the safety and viability of PRW schemes by continuing to operate our PRW Discovery Centre in Quakers Hill. In June 2024 we took the first step in a planning approval process to expand PRW production at Quakers Hill and transfer treated water to Prospect Reservoir. We will submit an Environmental Impact Assessment in 2025, ahead of planning approvals and a future business case.

We are exploring opportunities to further improve our material recovery. We continue to work to achieve a sustainable and valuable reuse market for our grit, screenings and biosolids. We are building a new biosolids treatment facility at Riverstone that will create a carbon rich material called biochar. Sydney Water has been proactively working with EPA to encourage a practical, risk-based approach in a new regulatory approach for biosolids.

Our key investments in recycled water, biosolids and materials recovery include:

- **Delivering committed recycled water schemes** including Sydney Science Park and Mamre Road and Aerotropolis Integrated Water Cycle services. Mamre Road and Aerotropolis costs are reflected in Objective 2: Cool, Green Natural Places.
- Delivering recycled water via Upper South Creek AWRC in Western Sydney, and Camellia AWRC to service Greater Parramatta and Olympic Peninsula. Costs are reflected in Objective 1.
- **Continuing to operate and maintain** recycled water schemes

- 
- **Unlocking the Circular Economy** through activation of Upper South Creek circular economy hub resource recovery projects
 - Investing in **North Head WRRF Biosolids Amplification**
 - **Preparing for new biosolids guidelines**

Many of our key opportunities to recover resources come from improvements to wastewater management. Much of the expenditure will be captured in Objective 1 and Objective 3.

Success factors

- Planning and delivery of stormwater harvesting and water recycling schemes.
- Robust governance and community acceptance of PRW gives confidence to pursue investments, thus avoiding billions in wastewater system augmentation.

Risks

- Weather and unpredictable events can impact recycled water quality, with wet weather reducing volume used.
- Requires community and government support to get PRW off the ground.
- Biosolids regulatory changes are expected to impact reuse, however the timeline is unclear.

Objective 3: Cool, green and natural places

We contribute to community wellbeing through recycled water to green and cool public spaces. We Care for Country, conserve and restore waterways and natural habitat. (Customer priority 7 and 11)

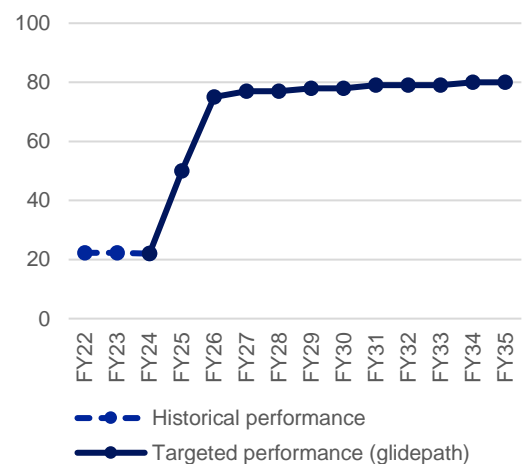
We will:

- maintain and improve active management of our land with natural areas and green infrastructure to provide environmental and ecological outcomes
- restore and improve waterways and where suitable, naturalise waterways when we replace aging stormwater channels
- providing recycled water to irrigate open spaces and partner with industry, planners and land managers to improve irrigation and landscape management practices.


Performance measure	Aim	Baseline	Targets			
		23-24	24-25	25-26	29-30	34-35
Natural area and green infrastructure land actively managed: Percentage of Sydney Water land with natural values and green infrastructure that is actively managed.	Improve active management of our land with natural areas to provide environmental and ecological outcomes, even as we increase our asset base through new stormwater drainage lands.	22%	≥50%	≥75%	≥78%	≥80%

Rationale and historical context

Sydney Water owns over 1400 hectares of operational and drainage land with natural values. This is over 15 per cent of our total land holdings. The proportion of land we own with natural values will grow in the future as we start managing Western Sydney drainage land. This measure responds to our customers' preference for us to create habitats for plants and animals, and it reflects the activity Sydney Water does to manage and enhance these values through our natural and stormwater assets. Sydney Water is beginning to work with the community and First Nations people to improve management of our land and apply lessons from Caring for Country. At Warragamba, we worked with First Nations elders to improve management of bushland and connection to Country through culturally appropriate cool burns.



Green spaces also provide important amenity and recreational values for our community that our customers value. COVID-19 showed how important good public spaces are for our community's physical and mental health.. Most public open space is irrigated with drinking water: recycled water is currently used to irrigate about 7-9 per cent of public open space. Our customers want to see us supply more non-drinking water to green spaces. We will partner with industry, planners and land managers to improve irrigation and landscape management practices and enable use of recycled water instead of drinking water where it's appropriate.



We manage large parcels of land with identified natural values through our Property Environmental Management Plan (PEMP) program and we have bushland management contracts for riparian land. Two large sites are covered by biodiversity trust agreements. Eight per cent of our 458km of trunk stormwater drains are in natural or naturalised waterways or have green infrastructure elements (such as grassy swales). We have been declared stormwater manager in growth precincts in Western Sydney and will provide our stormwater services in a way that achieves water quality and flow requirements and supports healthy waterways.


Our stormwater maintenance costs are forecast to increase significantly to service these new stormwater assets. We have an ongoing need for vegetation management funding via the PEMP and riparian land bushland management programs to continue to maintain and actively manage our natural area and green infrastructure.

Strategy for improvement

Key activities for increasing the proportion of natural area and green infrastructure land actively managed include:

- **Improving active management of our stormwater natural assets and land** with natural areas to provide environmental and ecological outcomes, even as we increase our land assets to provide new stormwater services. We will improve management of waterways by learning from the knowledge and traditional practices used by Aboriginal and Torres Strait Islander peoples.
- As part of our new regional integrated stormwater servicing in Mamre Rd and Aerotropolis precincts in Western Sydney, **developing the largest stormwater harvesting program in Australia** over time, so we can reduce damaging flows to waterways and support effective urban greening. Stormwater infrastructure will be delivered gradually over the next 10-20 years. We will actively manage the drainage land that is required for this stormwater activity. We're working with IPART and developers to implement effective water infrastructure contributions.
- Improving water quality, waterway health and public access by working in collaboration with Councils via our **Waterway Health Improvement Program (WHIP)**.
- **Managing and supporting environmental and ecological values on our land** and where feasible, we will naturalise stormwater channels when they need renewal to enhance amenity, aesthetics and ecology of waterways, including:
 - Expansion of the natural area under active management through our PEMP
 - Completing our Muddy Creek naturalisation project
 - Investing in other naturalisations and restoring stormwater wetlands, to create habitat for plants and animals, and support positive community outcomes (covered in the Customer Experience SIP along with renewals of aging trunk stormwater infrastructure "like-for-like" replacements).

Customers on our panel in phase 4 of Our Water Our Voice indicated that they are willing to pay more to improve waterway health, particularly when Sydney Water can improve natural systems for overall community benefit. Based on our Discrete Choice Experiment (DCE study), homeownership customers were willing to pay an additional \$21 on top of their quarterly bills (in addition to the estimated increase) to see 200 identified urban waterways improved. Customers on our panel are also willing to pay for more recycled



water to be used to irrigate public green spaces. Based on our DCE study, homeowners were willing to pay an additional \$6.20 on top of their quarterly bills (in addition to the estimated increase) and renters willing to pay an additional \$8.10 each quarter for Sydney Water to increase the production of recycled water from 4 billion litres to 6.5 billion litres per year (to irrigate 1,300 hectares of open space).

We will increase our recycled water supply (including stormwater) for public open space irrigation through new advanced water recycling centres, as discussed in Objective 1 and 2. We will continue to support and work with Councils and Government to improve implementation of water sensitive urban design (including via our WHIP) and help them increase the use of recycled water for irrigation of public open spaces.

Success factors

- Sustained increase in funding for PEMP sites.
- Sydney Water's trunk stormwater management function in Western Sydney is supported by appropriate land use planning and legislation.
- Fully funding maintenance of Western Sydney drainage assets.

Risks

- If irrigation with recycled water is not well managed it could hamper soil and vegetation health.
- Recovering the full costs of recycled water use for irrigation of public green spaces.

Objective 4: Net Zero carbon emissions

We achieve Net Zero carbon emissions in our operations from 2030 in response to the increasing impact and risk of the changing climate. (Customer priority 13)

We will:

- reduce carbon emissions from our operations as much as possible through energy efficiency and generation of renewable energy
- offset remaining emissions by securing PPA (Scope 2) and purchasing carbon offsets (Scope 1).

Performance measure	Aim	Baseline	Targets			
		20-21	24-25	25-26	29-30	34-35
Net Zero carbon emissions (tCO₂-e): Volume of scope 1 and 2 carbon emissions (CO ₂ -e tonnes per year where CO ₂ -e refers to 'carbon dioxide equivalent')	Improve by continuously reducing the net carbon emissions from our operations, to achieve Net Zero carbon emissions from 2030	390,000 tCO ₂ -e	≤334,000 tCO ₂ -e	≤279,000 tCO ₂ -e	Achieve net zero emissions	Maintain net zero emissions

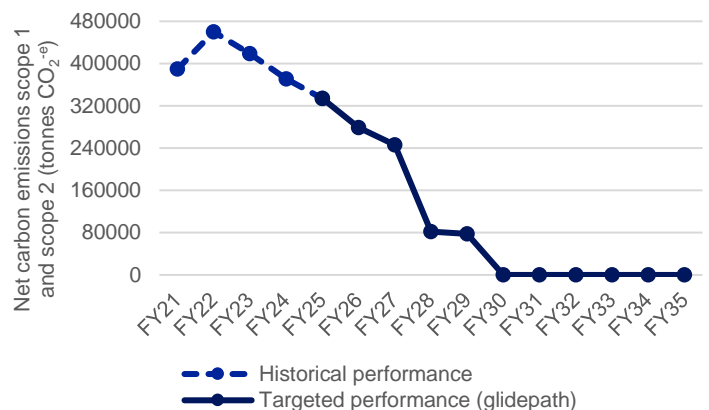
Rationale and historical context

This measure refers to the total amount of carbon emissions that Sydney Water produces through its existing operations, captured through our scope 1 (direct emissions) and scope 2 (indirect emissions). It responds to customers clear preference for us to accelerate our net zero targets from 2050 to 2030, and our obligation to meet the NSW Government's new *Climate Change (Net Zero Future) Act 2023* to deliver net zero by 2050.

We have already made significant progress

towards reducing our emissions. In 2022-23 we

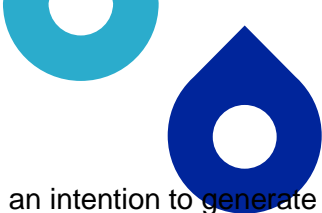
emitted a total of 365,282 tonnes of carbon dioxide equivalents, a reduction of approximately 20,000 tonnes from the previous financial year or 6 per cent of the total 2030 reduction target. This was achieved predominantly through the decarbonisation of the electricity grid. We need to build on this strong progress by continuing to generate and extend renewable energy assets at our sites, and source high integrity carbon offsets to ensure our reduction achievements are genuine. We have chosen the 2020-21 year as our baseline because it is the starting year of our modelled emissions reduction pathway.



Strategy for improvement

Our key activity for delivering our Net Zero Carbon emissions targets is the implementation of our Net Zero Carbon Program. This includes:

- **Emission reduction capital projects** and maintenance and renewal of existing renewable energy facilities (co-generation and hydro schemes).

- 
- **Continuing to explore opportunities to reduce scope 1 emissions**, with an intention to generate and/ or purchase carbon offsets.
 - **Offsetting our scope 2 emissions profile through securing a PPA.**
 - **Continuing to progress renewable energy projects** including cogeneration and installation of solar facilities.
 - Continuing to transition our passenger fleet to **electric vehicles**.

Customers are willing to pay more to see Sydney Water accelerate its net zero targets to 2030. Based on our DCE study, homeowners were willing to pay an additional \$9.50 on top of their quarterly bills (in addition to the estimated increase) to see Sydney Water achieve Net Zero by 2030. We will incorporate this value into future business cases and planning frameworks to demonstrate that investments in infrastructure that reduce carbon emissions provide both an economic and social return.

Success factors

- Decarbonisation of NSW electricity grid aligns with Australian Energy Market Operator forecasts.
- New assets and asset renewal projects actively consider their carbon footprint in their design, operation and end of life decisions, to avoid increasing Scope 1 and 2 emissions and subsequently the requirements of PPA and carbon offsets.
- Address carbon emissions from a larger, more complex asset base by ensuring new assets are as efficient as possible and renewable energy.

Risks

- Delays in Sydney Water's pipeline of new renewable energy projects will reduce the economic benefit, and increase the required capacity of the PPA.
- Uncertainty in availability, demand, quality and price of PPA and carbon offsets.

Objective 5: Climate resilient systems

Our water services and infrastructure (drinking water, wastewater, recycled water and stormwater) can cope with climate change. (Stakeholder priority – Operating Licence)

We will:

- improve climate risk maturity of the business over time
- invest prudently to ensure we can maintain our service levels by managing our climate risk

Performance measure	Aim	Baseline 23-24	Targets			
			24-25	25-26	29-30	34-35
Climate risk maturity health check: Enterprise-scale level of climate risk management maturity rated through the NSW Climate Risk Maturity Health Check Tool	Improve our enterprise scale level of climate risk management maturity over time in line with new Operating Licence requirements	Fundamental/ Repeatable	Repeatable	Systematic	Advanced	Advanced

Rationale and historical context

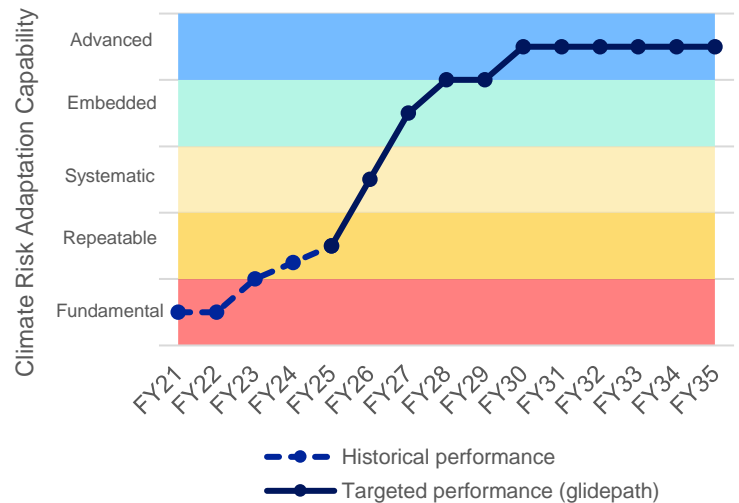
Climate change will affect our assets, the services we deliver and threaten the environmental attributes that are highly valued by our customers. Without action to manage climate risks, Sydney Water will face significant risk to the future delivery of customer services and environmental compliance, as well as to efficient core business operations.

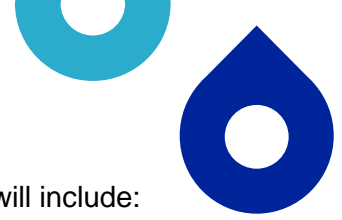
This measure responds to our new Operating Licence requirements to consider climate change in our activities and meet certain climate risk maturity levels consistent with the NSW Government’s Climate Risk Ready Guide. Adapting and being resilient to climate change is also consistent with our customers’ preference for preventative measures and also with the Government’s NSW Climate Change Policy & Framework.

Many programs of work identified within other objectives contribute to the climate resilience of our systems (including Safe and clean water, Secure water supply, Reliable water and Prevent Pollution). While we can demonstrate leadership in maintaining services while facing climate challenges, Sydney Water is not yet systematic in its integration of climate into risk management practices. We must continue to evolve planning practices and decision-making frameworks to ensure we plan for a future climate that will not be the same as the past.

Strategy for improvement

We will integrate climate resilience into our planning and investment frameworks to manage risks and





improve collaboration on community and environmental resilience initiatives. This will include:

- **Improving enterprise-wide governance** and establishing robust technical guidance and support for climate risk assessments at the project and program levels.
- **Addressing key climate risks identified in system plans** and ensuring adequate response and recovery approaches, as well as improving community awareness of vulnerability to climate hazards.
- Continuing to embed our **climate change adaptation position into core business practices**, including reflecting a moderate emissions climate future as our baseline for planning work and activities.

Success factors

- Creation of system climate risk plans that identify investments which contribute to climate resilience.
- Climate risk management embedded in Sydney Water decision making and governance.

Risks

- Requirements for assurance and auditing of licence requirements unclear.
- Competing priorities in risk management.

