

SYDNEY
DESALINATION
PLANT

LONG TERM INVESTMENT PLAN

2027-2032
PRICING PROPOSAL

25 September 2026



CONTENTS

Delivering in our customer's long-term interests	3
Our Plan on a page.....	4
1. How we developed this Plan	5
1.1 Considering the Plant's long-term role	5
1.2 Drawing on our asset management plans and strategies to forecast lifecycle costs...	9
1.3 Considering production scenarios.....	12
1.4 Validating our assumptions and ability to deliver.....	12
1.5 Setting a challenging efficiency target	13
1.6 Commissioning an independent review.....	15
2. Our role and operating context.....	16
2.1 Providing Sydney's only non-rainfall dependent drinking water supply	17
2.2 The Plant's role has evolved over time.....	18
2.3 Our Operating Licence aligns with the Greater Sydney Water Strategy	20
2.4 Decision Framework.....	21
2.5 Water Supply Agreement.....	22
3. Emerging trends and challenges.....	24
3.1 Major asset renewals and replacements.....	24
3.2 A continuously evolving role for the Plant.....	24
3.3 Potential Plant Expansion.....	25
3.4 A changing climate	26
3.5 Emerging technology	26
3.6 Our plan to meet these trends and challenges.....	27
3.7 Our culture of continuous improvement.....	28
4. Our long-term capital investment plan.....	29
4.1 Asset replacements are the focus for the next 10-years	29
4.2 Key investments over the next 10 years	31
4.3 After 10-years the level of capex will stabilise	36
4.4 How we'll keep the Plan up-to-date	37
Appendix A – Modelling parameters & assumptions	38
Appendix B – Sensitivity analysis	39
Appendix C – Glossary	41

DELIVERING IN CUSTOMERS' LONG-TERM INTERESTS

Sydney Desalination Plant (SDP) plays a unique and vital role in securing Sydney's water future. As Sydney's only major climate-independent source of drinking water, the Plant provides resilience against drought, climate variability and changing patterns of water demand. To continue delivering this critical service, we must take a long-term view of how we invest in, maintain and renew our assets.

This Long Term Investment Plan (the Plan) sets out that long-term view. It provides a structured framework for identifying the investment required to sustain the performance, reliability and resilience of the Plant and Pipeline over the next 25 years, while balancing cost, risk and service outcomes for the people of Sydney.

The Plan is designed to support proactive investment decisions. By looking beyond immediate operational needs, it helps us understand how our assets will age, how technology and regulatory expectations may evolve, and how future operating requirements may change. This enables SDP to prioritise investment that maintains the integrity of critical infrastructure, optimises asset life, supports efficient operations and strengthens our ability to respond to future challenges.

Looking ahead, SDP will operate in an environment characterised by increasing uncertainty and change. Climate variability, Sydney Water's evolving needs, ageing infrastructure, changing regulatory expectations and emerging technologies will all influence how the Plant and Pipeline are operated and maintained.

As Sydney's water system adapts to population growth and a changing climate, desalination's role

within the broader supply portfolio will continue to evolve. SDP must therefore remain flexible and responsive to changing operating requirements.

To meet these challenges we anticipate needing to increase our capital expenditure to spend around \$374 million over the next 10 years. The Plant is entering a phase in its lifecycle where critical assets need to be renewed and replaced as systems reach the end of their design life. Making this investment will mean the Plant continues to operate as intended providing a dependable source of climate independent drinking water.

The Plan provides a roadmap for managing the Plant and Pipeline in a way that maintains water quality, service reliability, safety and environmental performance while minimising whole-of-life costs. Disciplined long-term planning helps reduce the risk of unexpected failures, avoids inefficient expenditure and supports future generations to benefit from a reliable source of high-quality drinking water when it is needed most.

Ultimately, this Plan is about stewardship – it has been reviewed and challenged by the SDP Board to make sure it aligns with the long-run interests of customers. It reflects our commitment to managing SDP's assets responsibly, making prudent and efficient investment decisions, and ensuring the Plant remains a cornerstone of Sydney's water security for the benefit of customers for decades to come.



Adelle Howse
Chair



Philip Narezzi
CEO

OUR PLAN ON A PAGE

Long term investment planning at SDP

SDP recognises that long-term investment planning is essential to ensure the Plant continues to provide efficient and reliable service into the future.

This Plan sets out how we will sustain the performance, reliability and resilience of the Plant over the next 25 years. It is a roadmap for renewing, refurbishing and maintaining critical assets so the Plant remains available to meet Sydney Water's production requests and support Greater Sydney's water security.¹

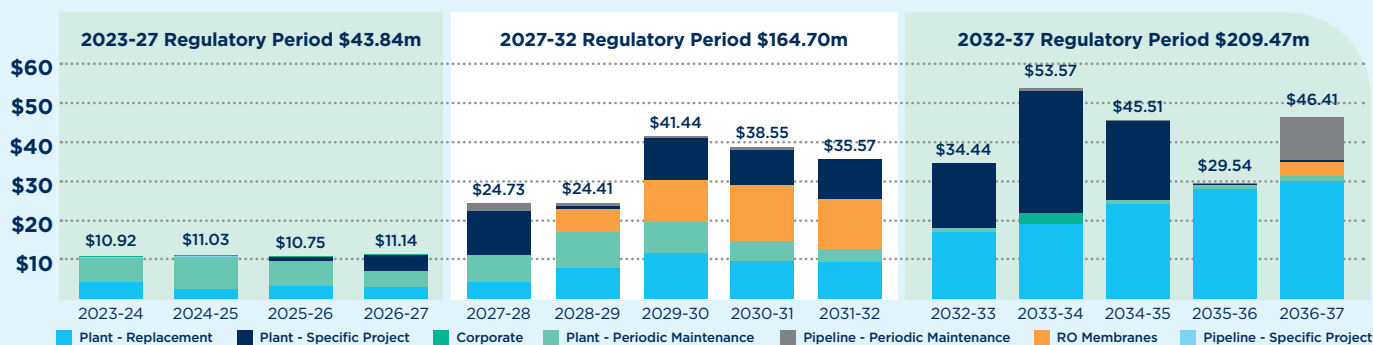
Stakeholder feedback was integral to the Plan's development

We undertook an 18-month multi-stage engagement program that directly shaped this Plan. We engaged with our only direct customer, Sydney Water, NSW Government and our Customer Advisory Panel (CAP). We considered the long-term role of desalination in the Greater Sydney water supply system as set out in the Greater Sydney Water Strategy. We also considered our current Operating Licence conditions and the level of service we need to provide, and the role of the Plant in Sydney Water's Long-Term Capital and Operational Plan. Our Asset Management Systems and Asset Class Strategies provide the foundation for our long-term expenditure forecasts. This detailed information helps to ensure assets are renewed at the right time – to balance reliability, safety and cost. We engaged closely with the Plant's Operator and commissioned an independent review of the Plan to ensure it is robust and deliverable.

Replacing critical assets will increase capex over the next 10 years

The Plant is entering a phase in its lifecycle where critical assets need to be renewed and replaced. This will increase our capital investment (capex) to around \$374 million over the next 10 years (Figure 1).

Figure 1: Key asset replacements drive investment over the next 10 years



Key investments include replacement of reverse osmosis membranes, Energy Recovery Devices (ERDs), pipework, pumps and other electrical components as well as ongoing periodic maintenance of our assets. Based on feedback from stakeholders, we will defer investment in some assets, including a second drinking water tank until 2032-33.

The level of production from the Plant is a key driver of capex. Our forecasts assume that this will be 38 GL/year. This is consistent with forecast Plant production in Sydney Water's 2025-30 final price determination. We estimate investment could be around 10% higher if the Plant were to operate at full capacity (91.25 GL/year) over the next 10 years. This is because operating at full capacity brings forward renewal and refurbishment requirements. Similarly, if we were at minimum production (20 GL/year) over the next 10 years our capex could fall by around 13% compared to operating at 38 GL/year.

After 10 years we expect investment will stabilise

After this 10-year period of renewal, we forecast capex for the following 15-years will reduce as the asset base moves into a more stable lifecycle stage. We have established a process to regularly review and update this Plan. We will continue to engage with stakeholders and publish regular updates.

¹ Greater Sydney Water Strategy, NSW Department of Planning and Environment, August 2022

1. HOW WE DEVELOPED THIS PLAN



1.1 Considering the Plant's long-term role

SDP's external environment, stakeholders, and strategic, regulatory, and environmental drivers shape our planning and influence how the Plant and Pipeline are operated, maintained, and renewed.

1.1.1 Operating Licence and planning reports

Our first step in developing this Plan was to consider the long-term role of desalination in the Greater Sydney water supply system. Section 2 of this Plan outlines the role of the Plant under the Greater Sydney Water Strategy as well as our current operating rules and the level of service we need to provide.

To support consistent and risk-informed decision-making, SDP has developed asset management guidance based on Sydney Water's Decision Framework (outlined in Section 2.4) and the production requirements (levels of service) associated with each operating scenario, as determined by Sydney's combined dam storage levels. The guidance is summarised below:

Dam storage levels above 90% – SDP will undertake asset management activities in a lower-production environment, where asset risk is reduced and planned outages or downtime can be accommodated. In this scenario, delivery cost optimisation is prioritised over minimising outages.

Dam storage levels between 75% and 90% – SDP will actively prepare for the possibility of a

sustained high-production period. This may require bringing forward increased volumes of capital works and maintenance activities, including works that involve planned outages or temporary reductions in available capacity, to ensure assets are positioned to support future operational requirements.

Dam storage levels below 75% – SDP will plan and prioritise asset management activities to maximise production capability and system resilience. In this scenario, minimising outages and downtime takes precedence to maintain the highest possible level of available capacity and reliability.

We have also considered the role of the Plant alongside other water supply sources as set out in Sydney Water's Long-Term Capital and Operational Plan (LTCOP).

Sydney Water's LTCOP outlines the intent to increase the use of the Plant by around 20 GL/year over the 25-year period of this Plan. Sydney Water will also continue planning for new rainfall independent supply options including an expansion of the Plant within the next 10 years. We have incorporated these considerations into our Plan.

1.1.2 Incorporating stakeholder feedback

Customer and stakeholder preferences have directly informed our Plan. We engaged with our Customer and Stakeholder Engagement workshop participants on our proposed capex program, including key investments such as the second drinking water tank, reverse osmosis (RO) membranes and ERDs (see Box 1).

Box 1: Stakeholder Engagement

SDP undertook extensive customer and stakeholder engagement leading up to submitting our 2027-32 pricing proposal to IPART. This included extensive engagement with our only direct Customer, Sydney Water.

We engaged through an 18-month multi-stage engagement program that shaped our pricing proposal. Workshop participants included representatives from Sydney Water, NSW Government and our Customer Advisory Panel (CAP).

We sought input from our workshop participants on our capex plan and key elements of the proposal including our proposed membrane expenditure, decision to replace the ERDs and build a second drinking water tank now.

We received feedback from our CAP on the things SDP should consider when developing short and long-term investment plans which we have incorporated into this proposal. This feedback is summarised further in this section.

We developed the Plan in consultation with our Plant Operator, drawing on their expertise to refine and enhance our long-term planning approach.

As part of our engagement process, we also provided Sydney Water with a detailed copy of our capex forecast and responded to and incorporated their feedback.

As part of our Customer and Stakeholder Engagement Program, we received recommendations about our capex forecast from the CAP and Sydney Water. CAP Recommendations 2, 3, 7 and 9 and Sydney Water's responses are directly relevant to our capex forecast and were incorporated into this proposal. Table 1 outlines how recommendations were incorporated into our Plan.

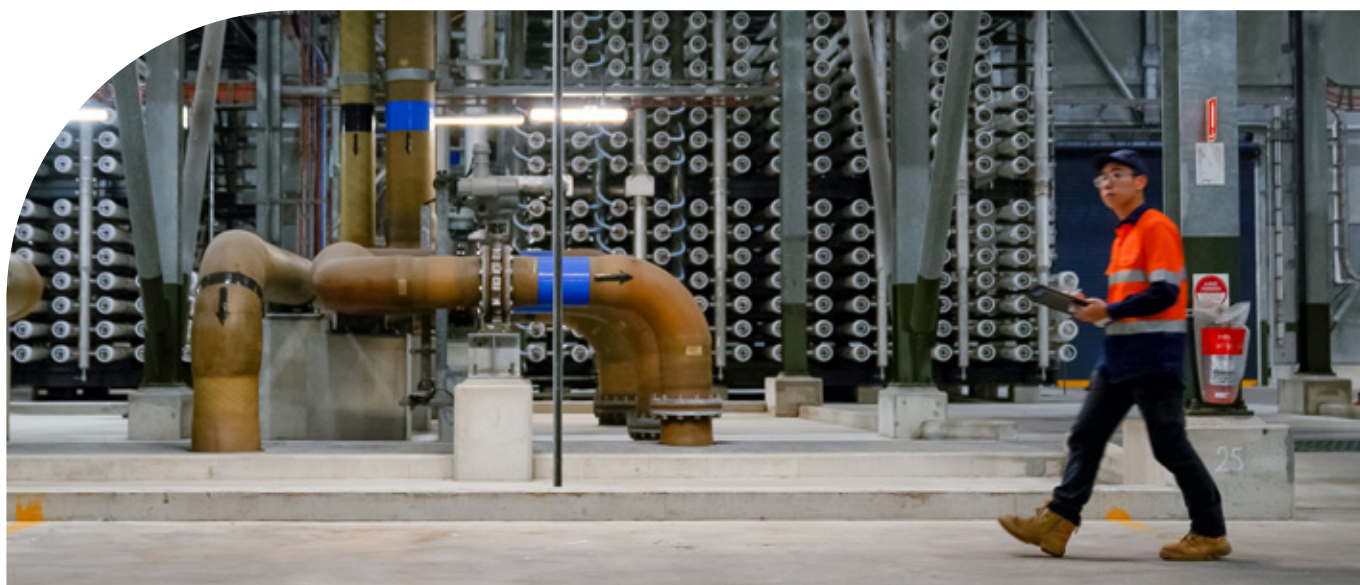


Table 1: How we incorporated Recommendation 2 into our capex proposal

Customer Advisory Panel recommendation	Sydney Water's response
<p>2. In developing its proposal, SDP should:</p> <ol style="list-style-type: none"> recognise that end-users prioritise fair and affordable bills, and identify opportunities to defer or delay non-essential expenditure that does not contribute to optimising its efficient operation within the regulatory period, consistent with its Operating Licence. 	<p>Sydney Water notes that customers told us that they value 'maintaining clean and safe drinking water' and affordability during the Our Water, Our Voice program. Any reduction to service levels, including deferral of nonessential expenditure that may impact service levels, must carefully consider the potential increased risk to water supply, customer impacts and system resilience.</p>
<p>How we incorporated this recommendation</p> <p>We have incorporated these recommendations by including a challenging efficiency target of 0.7% per year (cumulative) over the regulatory period. We have challenged ourselves to find efficiencies and this has reduced our capex forecast by \$3.8m over the regulatory period.</p> <p>We reviewed our entire capex forecast to identify opportunities to prudently defer \$41.8m of expenditure. We identified three projects that could be deferred and delivered beyond the 2027-32 regulatory period, including building a second drinking water tank (\$37.7m), installation of solar and batteries on site (\$2.7m) and the pilot plant project (\$1.4m). In addition, we have re-profiled our RO membrane expenditure towards the end of the regulatory period based on the latest available data that supports the re-profiling.</p> <p>We have carefully considered the risks of deferring or delaying projects and we are confident that the deferred expenditure will not materially impact service levels or system resilience.</p>	

Table 2: How we incorporated Recommendation 3 into our capex proposal

Customer Advisory Panel recommendation	Sydney Water's response
<p>3. Any expenditure or project that enhances or improves SDP's services, including its ability to respond to other production requests, needs to be well justified – with benefits to the people of Sydney clearly outweighing costs.</p>	<p>Sydney Water agrees with the CAP's draft recommendation that any improvements to SDP's service levels must be clearly justified and balance costs and system-wide benefits. In particular, we consider that there is a strong case for expenditure on detailed design development for the expansion of the plant over the upcoming regulatory period, to ensure a resilient and reliable water supply across Greater Sydney. This is discussed further in our response to the CAP's 12th draft recommendation.</p>
<p>How we incorporated this recommendation</p> <p>We have carefully considered our capex forecast and only included projects that maintain but don't enhance the service levels we are required to meet in our Operating Licence.</p> <p>For all major projects in our forecast, we have included well justified and robust business cases and cost estimates that clearly articulate the balance between costs and system-wide benefits. This includes for project to replace DWEERs that are failing and could impact our ability to sustainably meet higher production orders</p>	

Table 3: How we incorporated Recommendation 7 into our capex proposal

Customer Advisory Panel recommendation	Sydney Water's response
<p>7. SDP's expenditure decisions align with customer values and preferences and have regard to the following:</p> <ul style="list-style-type: none"> a. clean, safe drinking water is expected, b. expenditure must demonstrate material benefits and be undertaken no sooner than prudent, c. expenditure that efficiently improves flexibility and emergency response effectiveness is a priority, d. SDP decisions should minimise impact on the local environment and support emissions reduction, e. Innovation should seek to improve the plant's efficiency and reduce costs to end customers over predictable timeframes. 	<p>Sydney Water generally supports the CAP's recommendation around key considerations for expenditure decisions. The need for expenditure should also carefully consider trade-offs amongst cost, performance, and risk, while delivering the services valued by end-use customers. This includes any impacts on SDP's operational flexibility in meeting Sydney Water's Emergency and Fixed Production Day production requests.</p> <p>Sydney Water also supports IPART conducting a case-by-case assessment of innovation expenditure as required under the 3Cs framework, with benefits for customers to be demonstrated, and findings to be shared with Sydney Water.</p>
<p>How we incorporated this recommendation</p> <p>We have incorporated both of these recommendations into our proposed capex forecast. Our proposal sets out the investment required to align with customer values and preferences and meet the expectations of our direct customer Sydney Water in relation to operational flexibility and meeting Emergency and Fixed Production Day production requests.</p> <p>Our forecast recognised the need to balance asset maintenance, operational readiness and prudent investment with affordability for customers.</p>	

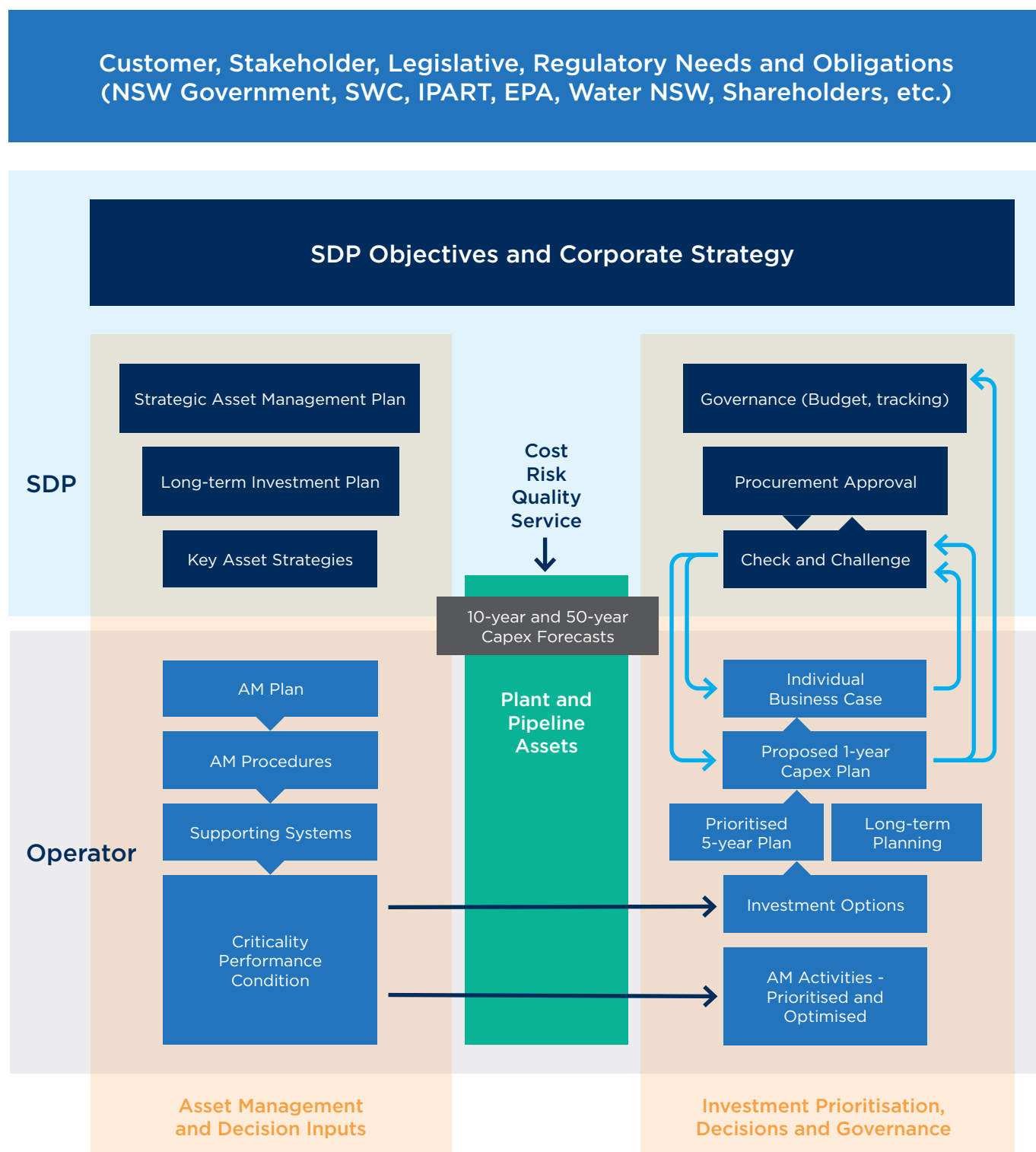
Table 4: How we incorporated Recommendation 9 into our capex proposal

Customer Advisory Panel recommendation	Sydney Water's response
<p>9. The second drinking water tank be included in the pricing proposal only if SDP can clearly demonstrate its benefits exceed its costs. The CAP considers the tank should not proceed if expansion planning is the main or only material benefit.</p>	<p>As a standalone investment targeted at providing additional routine storage during normal operations, Sydney Water does not currently consider the higher levels of service reliability through investment in a second drinking water tank as a high priority.</p> <p>However, Sydney Water acknowledge that there is a range of benefits that could be derived from investing in a second drinking water tank including response time, production during emergencies, expansion programming, increased efficiency, reduced wear and tear on assets, plant maintenance and availability during drought and these could be sufficient to demonstrate the project is a prudent and efficient investment.</p> <p>Sydney Water considers that a material benefit of building a second drinking water tank would be if it is part of a tranche of investments that would substantially reduce build time and derisk the expansion of SDP.</p>
<p>How we incorporated this recommendation</p> <p>Based on the feedback from both Sydney Water and the CAP we have decided to defer the proposed timeline for delivery of the second drinking water tank. This provides SDP with an opportunity to undertake further investigations to better understand the costs and benefits of the tank over the 2027-32 regulatory period before seeking approval for this investment as part of the 2032-37 regulatory period.</p> <p>We have proposed limited expenditure on prudent preparatory planning works for the second drinking water tank in 2031-32.</p>	

1.2 Drawing on our asset management plans and strategies to forecast lifecycle costs

SDP's Asset Management Plan and Asset Class Strategies provide the foundation for the Plan by establishing the lifecycle management framework, asset condition assessments, risk evaluations and intervention criteria used to forecast future capex over a 25-year horizon.

Figure 2: Our asset management system within the broader governance framework



Our forecasts assume production of 38 GL per year on average over 2027-32 regulatory period. This Plan also incorporates analysis of different production levels to better understand the sensitivity of our capex forecast to changes in production levels.

1.2.1 Drawing on our asset management systems

The Plan is based on detailed information from our asset management systems which draw from our extensive database of around 27,000 individual assets.

An important initial step was to define the boundary for our Plan by defining the assets and activities that meet our criteria for capital works. The boundary is defined with reference to our Capitalisation Policy and our contractual arrangements with our Plant Operator. In general, lower valued assets are treated as routine asset maintenance which is classified as operating expenditure (opex) rather than planned capital works.

For each asset in the Plan, we have information including asset installation dates, asset condition, criticality, expected asset lives, exposure ratings and operating history data, to identify when individual assets are likely to require renewal or replacement. For assets affected by Plant utilisation (production levels), we applied production-based adjustments to asset lives so that future investment

needs reflect expected operating conditions.

The Plan is underpinned by SDP's Asset Management Plan, which is prepared in accordance with ISO 55001 principles and focuses on managing assets on a whole-of-life basis. Asset replacement and periodic maintenance forecasts are informed by condition monitoring, asset performance data, lifecycle cost analysis, Original Equipment Manufacturer (OEM) guidance and updated asset replacement values. This helps ensure that investment is targeted at the right assets, at the right time, based on condition, risk and whole-of-life cost rather than on fixed replacement intervals.

While the focus of the Plan is capex, our lifecycle approach is designed to optimise trade-offs between opex and capex (see Box 2).

Box 2: Optimising opex/capex trade-offs

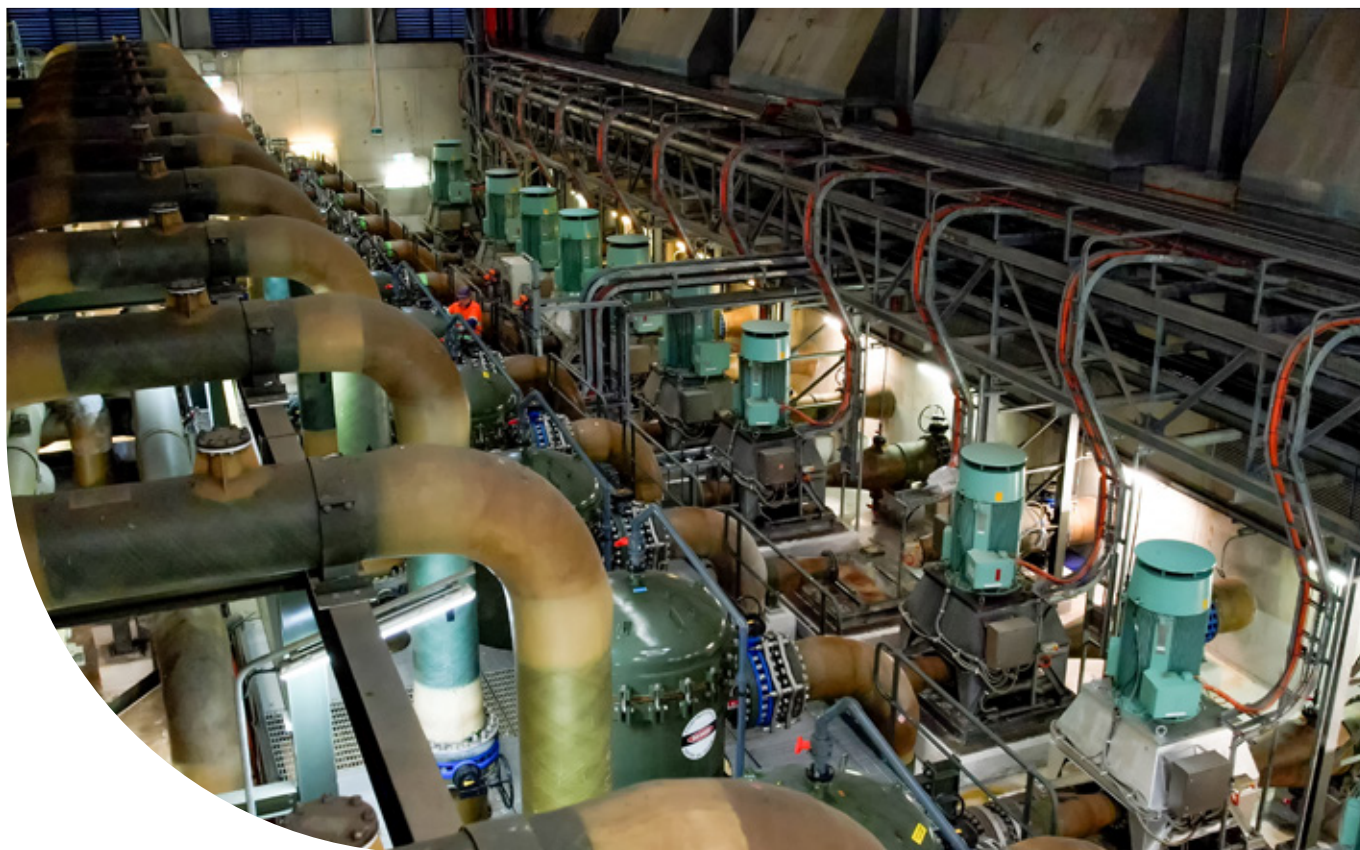
SDP optimises opex and capex trade-offs through a risk-based, whole-of-life asset management approach. Asset condition, performance, criticality, utilisation and lifecycle cost information are used to determine whether maintenance, refurbishment or replacement represents the most efficient intervention.

Planned maintenance is undertaken where it can cost-effectively extend asset life and defer capital investment, while replacement is pursued when ongoing maintenance no longer represents value for money or creates unacceptable service risks. Through lifecycle modelling, whole-of-life cost analysis and rigorous business case evaluation, SDP seeks to minimise the combined cost of operating and maintaining the Plant while maintaining reliability, water security and customer service outcomes.

1.2.2 Drawing from our asset class strategies

SDP's Asset Class Strategies provide a further layer of long-term planning by defining lifecycle and maintenance strategies for critical asset classes. Examples of asset class strategies include for RO membranes and ERDs.

These strategies identify the key risks, performance requirements, replacement drivers and preferred intervention approaches for major assets such as pumps, transformers, pipework and storage infrastructure. In doing so, they help justify the timing and scope of future capital investments included in the Plan.



1.2.3 Enhancing cost estimates

Our recent review and update of our Asset Replacement Value (ARV) database improved the accuracy of forecast expenditure in the Plan by ensuring that future asset renewal expenditure is based on up-to-date and asset-specific replacement costs. The updated ARV data is incorporated into SDP's lifecycle modelling. We also incorporated the latest actual cost data to forecast the cost of future

periodic maintenance activities.

This strengthens the reliability of long-term expenditure forecasts, supports more accurate whole-of-life cost analysis, and provides greater confidence that forecast investments reflect the efficient cost of maintaining asset performance and service outcomes over time.

1.2.4 Optimising the expenditure profile

Unlike opex which tends to be relatively stable over time, capex is often characterised by peaks and troughs. Based on average Plant production of 38 GL per year, our initial forecast of when assets are likely to require major intervention or replacement sometimes resulted in peaks of capital works (e.g. in a particular year).

To manage these peaks, we looked for opportunities to optimise the expenditure profile within available timeframes while ensuring critical assets are replaced before reliability, safety or operational performance is compromised. This helps to support more efficient resource planning, reduces the risk of deferred maintenance creating future cost shocks

and supports more stable and predictable prices for Sydney Water and its customers.

It is important to note that the investments identified in this Plan are subject to SDP's established Capital Works Procedure. This includes business case development, option assessment, risk evaluation, cost and schedule review, and approval through the relevant governance and delegation processes. This means that investment decisions will be based on the best available information. The Capital Works Procedure therefore provides an important control mechanism to validate the need, scope, timing and affordability of individual projects before funding commitments are made.

1.3 Considering production scenarios

We have assumed annual Plant production of 38 GL to develop our long-term capex forecasts for the Plan. However, production higher or lower than 38 GL can materially affect future capex needs because the rate at which many assets deteriorate is linked to how intensively they are used.

Higher production generally results in greater wear and tear, increased operating hours and more frequent use of critical equipment, which can accelerate asset deterioration and bring forward replacement and maintenance requirements. Conversely, lower production may extend the life of

some assets and defer the timing of future capex.

We developed two alternative production scenarios to examine the impact on capex:

- **Low production**, where the Plant operates at minimum production (20 GL per year) for 10 years, and
- **High production**, where the Plant is assumed to operate at maximum production (91.25 GL per year) for 10 years.

We present capex forecasts under these two scenarios in Appendix B.

1.4 Validating our assumptions and ability to deliver

Our Plan was developed and refined in close collaboration with our Plant Operator to provide investment forecasts that are grounded in operational realities and the latest information on asset condition, performance and maintenance requirements.

The Plant Operator's detailed knowledge of the Plant and Pipeline, gained through day-to-day operations, preventive maintenance activities and asset inspections, provides a critical input into the development of long-term asset strategies and investment needs. Proposed capital projects, asset lives, timing assumptions and risk assessments were reviewed and challenged to ensure they remain appropriate and supported by operational evidence.

This collaborative approach helped validate the Plan's underlying assumptions and helps ensure

that forecast investments reflect prudent lifecycle management practices.

As part of the validation process, we also worked with the Plant Operator to determine whether proposed capital projects are realistic given:

- outage windows, operator capability,
- specialist contractor availability,
- procurement lead times,
- potential supply chain constraints, and
- the need to maintain readiness to meet Sydney Water's production requests.

Where any deliverability challenges were identified we worked together to stage, defer or re-sequence projects to help ensure the investment program remained practical while preserving safety, reliability and long-term value for customers.



1.5 Setting a challenging efficiency target

Our Plan complements SDP's Cost Efficiency Strategy by including a challenging efficiency target of 0.7% per year that compounds over time.

Below we summarise how we determined this target with more information in our Cost Efficiency Strategy.

1.5.1 Engagement feedback

We heard from Sydney Water and our CAP that we should consider affordability and challenge ourselves to become even more efficient over time. Therefore, we have set out to challenge ourselves to be even more efficient over the next regulatory period and beyond because it will lower our costs and deliver savings for customers.

During our engagement workshops we asked workshop participants if SDP should invest more and become an innovation leader in desalination technologies or if we should continue to be a 'innovation taker' and only look to deliver projects

that have tangible benefits that will likely save costs in the future. Workshop participants told us that becoming more efficient is important and SDP should look to improve its processes over time, but that it was not as important that SDP be an innovation leader in desalination technologies. Consistent with this feedback, we have only included targeted innovation and efficiency related expenditure rather than broad-based innovation that may or may not ultimately deliver benefits for customers.

1.5.2 Internal assessment

We tested the proposed efficiency target through an internal assessment process that combined bottom-up opportunity identification with top-down challenge. We reviewed opportunities across Plant operations, energy and treatment processes, maintenance, capital delivery, asset management, digital systems and corporate functions. We drew on input from SDP's corporate team, our Operator and external specialists, and prioritised opportunities by considering materiality, deliverability, whole-of-life cost, risk and alignment with our Operating Licence and service obligations.

We also considered the operating challenges that could affect delivery, including climate variability, energy market uncertainty, workforce constraints, the age of the Plant, production variability and technical limits on further optimisation. These factors do not remove the need for a challenging target, but they helped us calibrate a target that is ambitious without creating incentives to defer prudent maintenance, compromise reliability or

shift unacceptable risk to Sydney Water and its customers. The result is a target that stretches SDP to continue improving while remaining grounded in our operating context and long-term value for customers.

SDP is already operating efficiently and the scope within our operations to find significant savings is narrowing. For this reason, our target relies not only on known initiatives, but also on the continuing uplift of our asset management systems, better use of data and technology, disciplined capital planning and sustained operational improvement. To achieve our target, we will also need to find savings from initiatives that are yet to be identified.

As part of our Cost Efficiency Strategy, we identified several areas to prioritise for the 2027-32 regulatory period. The areas that we will investigate and the potential size of the savings over the next 5-years are summarised in Table 5.

Table 5: Cost efficiency initiatives in the 2027-32 regulatory period

Process area	Efficiency initiatives	Potential savings	Priority
Operations	Energy efficiency	High	High
	Chemical and treatment optimisation	Medium	High
Asset management	Strategic asset management	Medium	Medium
	Digital and technology strategy	Medium	High
Capital expenditure and long-term investment strategy	Improved forecasts	Low	Low
	Prioritising delivery	Medium	Medium
	Capital delivery	Medium	Low
Corporate costs	Digital and AI implementation	Low	High

Orange box Potential savings >\$1m over period Blue box Potential savings \$0.5m to \$1m over period Green box Potential savings <\$0.5m over period



1.6 Commissioning an independent review

To provide additional assurance over the robustness of our Plan, SDP commissioned an independent review by Sequana, a specialist adviser with expertise in water and infrastructure asset management.

The aim of Sequana's review was to test the model underpinning our Plan and confirm it reasonably estimates the capex required for the ongoing operation of the Plant in compliance with our obligations and what would be typical for a large-

scale desalination plant of its age and utilisation. Sequana's findings are summarised in Box 3.

This external scrutiny strengthens the credibility of our Plan and provides assurance to stakeholders that forecast investments have been subjected to rigorous review. The process has helped identify opportunities to refine assumptions, improve prioritisation and ensure that long-term expenditure remains efficient and justified.

Box 3: Independent review of our Plan

Sequana were commissioned to review the model underpinning our Plan and confirm it reasonably estimates the capex required for the ongoing operation of the Plant in compliance with our obligations and good industry practice.

Sequana found that our model was robust, noting that:

- The assets included are consistent with our Capitalisation Policy and Schedule 9 to the Operations and Maintenance Deed which defines the boundary between capital renewal, funded by SDP and operator maintenance funded within the Plant Operator's repairs and maintenance allowance.
- Asset replacement values are realistic and consistent with current market rates.
- Every asset is valued on its full delivered cost, including labour and installation, project management and not procurement alone.
- Maintenance is modelled as discrete frequency-and-cost streams, with intervals drawn from OEM-recommended servicing schedules and the Plant's maintenance history, rather than applied as a flat percentage of replacement value.
- Asset life is aligned to its operating duty and applied selectively rather than uniformly.
- While forecast capex represents a significant and sustained increase in delivery activity, it is achievable with the planning SDP is currently undertaking. The near-term years provide sufficient time for SDP to build capability before the highest forecast investment periods.

Sequana also made some recommendations on how the modelling can be enhanced in future periods. SDP will consider these recommendations when we next update the Plan.

2. OUR ROLE AND OPERATING CONTEXT

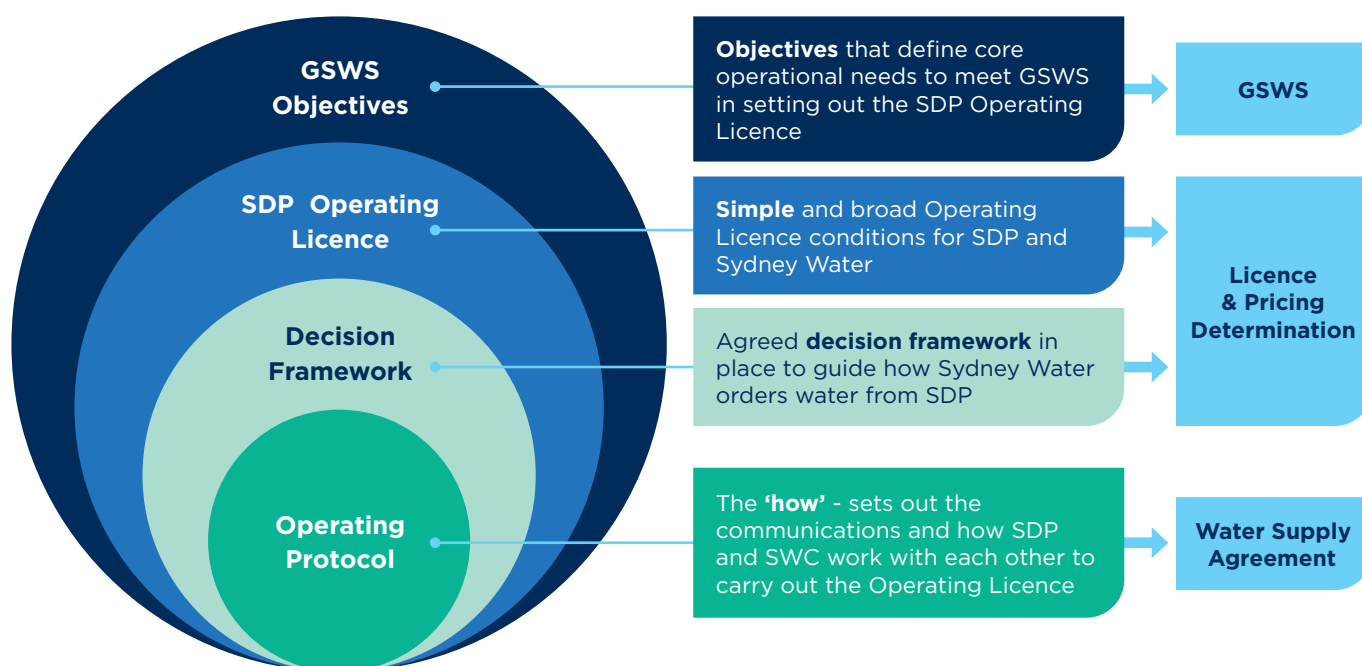
This section provides important context for our Plan by describing the evolving role of the Plant and our operating environment. As summarised in Figure 3, after a brief summary of the Plant this section describes:

- The objectives and role of the Plant in the Greater Sydney Water Strategy;
- The Operating Licence, associated operating framework and Sydney Water's Decision

Framework that shape how we operate; and

- The detailed operating protocols and other requirements in place with Sydney Water under the Water Supply Agreement designed to meet both NSW Government's objectives, SDP's Operating Licence commitments as well as the more specific needs of our customer – Sydney Water.

Figure 3: Overview of our operating context



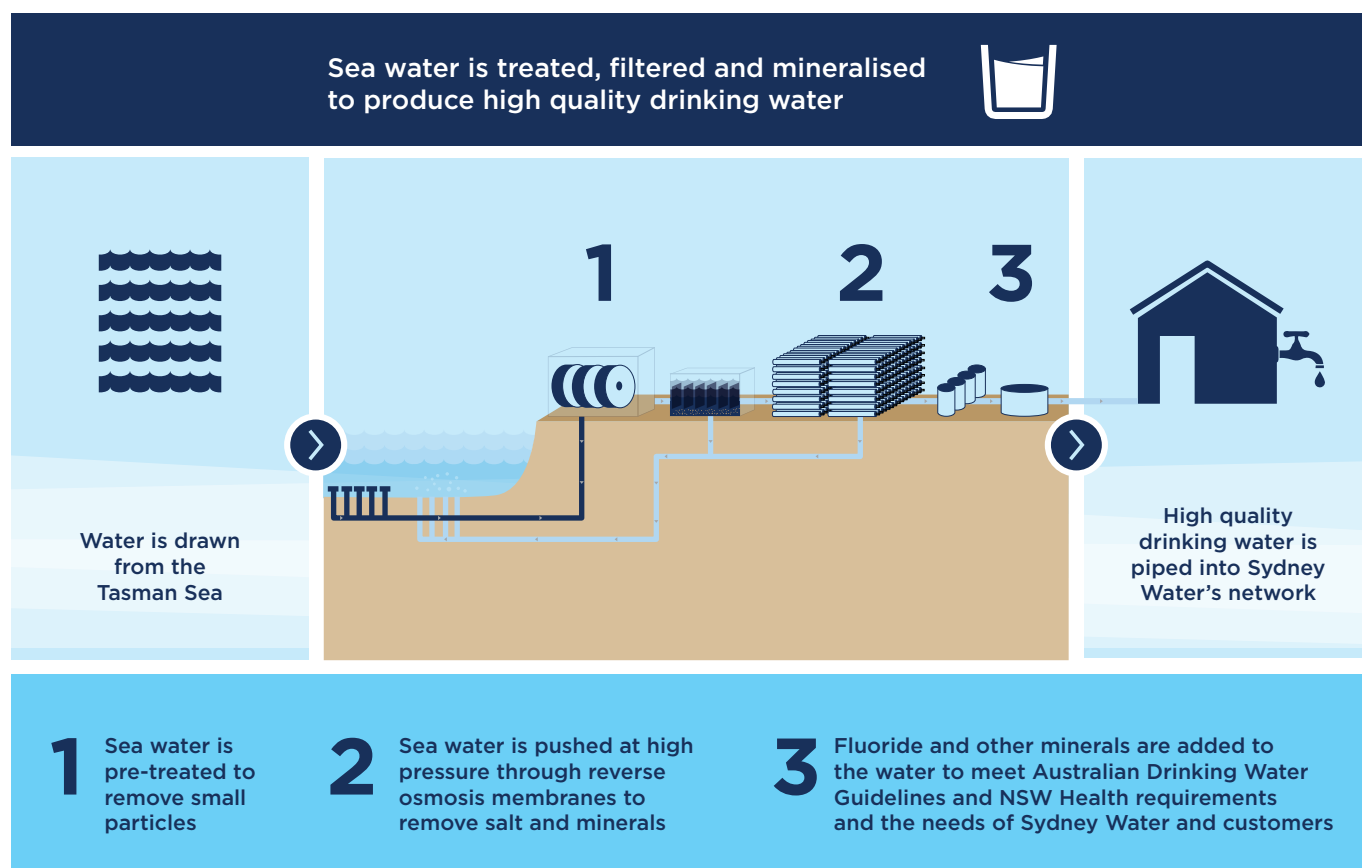
Source: Sydney Desalination Plant

2.1 Providing Sydney's only non-rainfall dependent drinking water supply

Commencing operation in 2010, the Plant is Sydney's only large-scale non-rainfall dependent drinking water supply.

Located at Kurnell, the Plant uses RO membrane technology to turn seawater into fresh clean drinking water (Figure 4).

Figure 4: The Plant produces high-quality drinking water from seawater



Source: Sydney Desalination Plant

The Plant can produce up to 91.25GL per annum of high-quality drinking water, which could supply up to 15% of Sydney's average drinking water needs.

Drinking water produced at the Plant is transported via an 18km pipeline to Sydney Water's network at Erskineville. The water is distributed into the network and delivered to homes and businesses

across the Greater Sydney region.

The Plant's Operator, Veolia Water Australia (Veolia), is contracted by SDP for the operation and maintenance of the Plant and Pipeline under a 20-year contract competitively tendered and executed by Sydney Water as an integral part of the Plant design and construct process.

Box 4: Veolia Water Australia (VWA) – our Plant Operator

- Veolia are a multi-national company with 170 years of global experience and nearly 220,000 employees worldwide, providing global expertise in water and ecological services.
- Veolia technologies support 18% of global desalination capacity and VWA manages key local assets such as our Plant and the Gold Coast Desalination Plant, as well as many other Australian water and wastewater treatment facilities.
- Veolia's deep local presence in Australia, with over 600 Australia-based Operators and Engineers, ensures that it understands the unique challenges we face and can provide world-class solutions with local accountability, networks and purchasing power.

2.2 The Plant's role has evolved over time

The Plant was designed and constructed as a drought response asset that is able to ramp-up to full production in an eight month period and operate during droughts.

The Plant has evolved through three distinct phases:

- **Drought-response (2010-2018):** Initial commissioning and operation as Sydney's first large-scale source of rainfall independent drinking water supply. The Plant was a drought-response asset and after a two-year proving period remained in Water Security mode (long-term shutdown) to only operate at times of drought or other emergencies.
- After several years in Water Security mode from 2012-2018 the Plant was re-commissioned in 2019 for drought-response operation at full-production, with asset operation consistent with initial design intent.
- **System-wide emergency response (2020 – 23):** After drought ended and full production ceased in early 2020, this period was characterised by low production (or low flow) to keep the Plant fully operational and ready to ramp-up production quickly and respond to water quality challenges following bushfires and floods, and manage system security risks posed by the pandemic.
- The Plant increased to full production several times over this period and SDP had to work through numerous challenges to operate the Plant in a stop-start manner inconsistent with its

original design and construction.

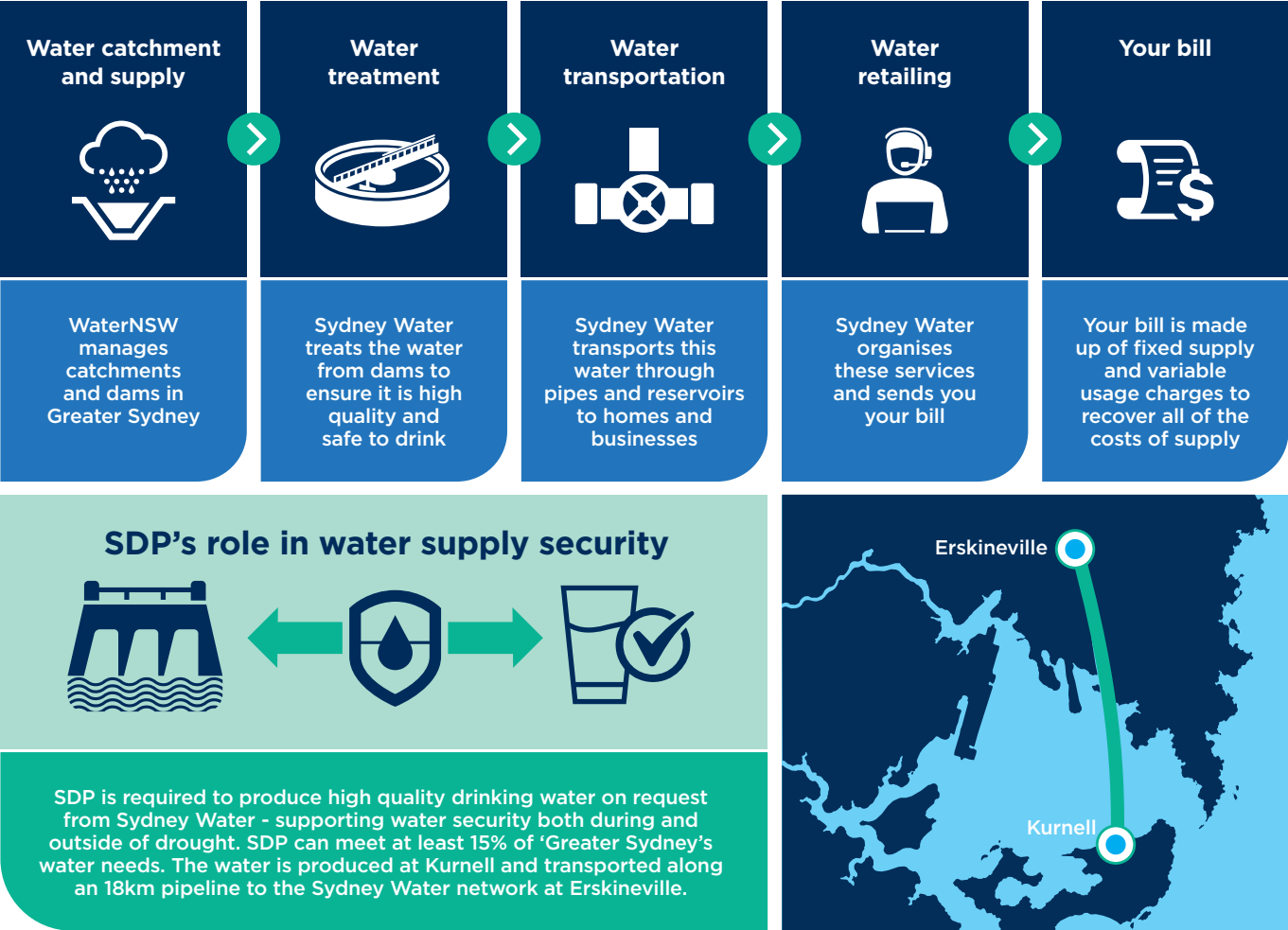
- **Flexible full-time operation (2023 – present),** where, following changes to SDP's Operating Licence in 2023 the Plant is now considered always operational, with the daily operating hours of Plant assets and systems varying depending on daily water production requirements.
- SDP continues working on how to manage operational reliability, asset efficacy and deliver efficiency in its new mode of operation.

The Greater Sydney Water Strategy (GSWS) set out the need for a more flexible operating model for the Plant that increased utilisation by changing its operation from “drought response” to “flexible full-time operation”. With the Plant now being always available it:

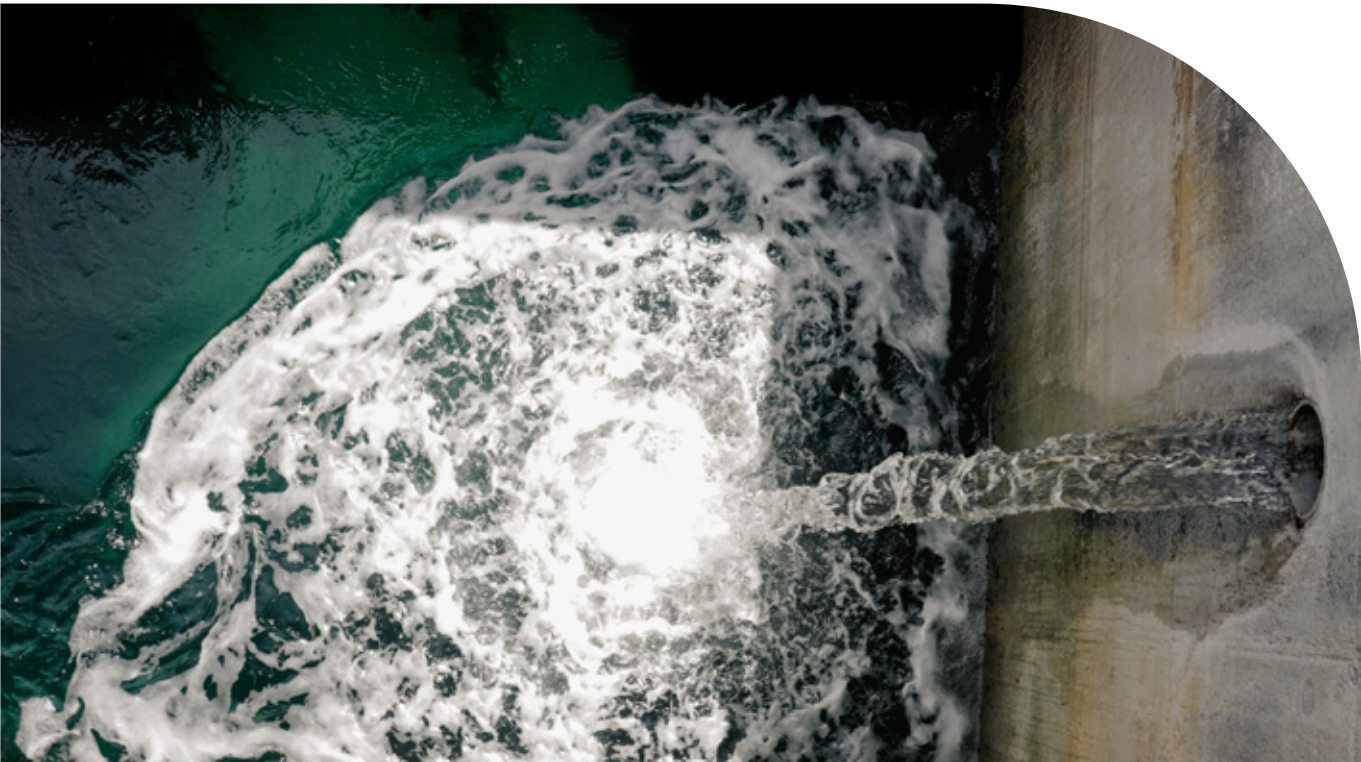
- Increases long-term average available drinking water supply by approximately 20 GL/year,
- Can extend supply for up to four months during severe drought by giving more time to implement drought supply measures, and
- Can assist in managing water quality and other asset risks, including responding quickly to water quality emergencies and system shocks as well as providing back-up, or supplementing system supply due to system maintenance.

SDP plays a broad and integral role in securing Greater Sydney's drinking water supply (Figure 5).

Figure 5: SDP’s role in meeting Sydney’s water security needs



Source: Sydney Desalination Plant





2.3 Our Operating Licence aligns with the Greater Sydney Water Strategy

SDP's Operating Licence reflects the GSWS, requiring the Plant to remain operational and responsive to production requests issued by Sydney Water under the Water Supply Agreement and consistent with its Decision Framework.

This framework enables coordinated use of rainfall-independent supply to enhance water security while delivering value to Sydney Water and its customers.

Under SDP's Operating Licence we must respond to several types of production requests:

1. Annual Production Requests (APR)

APRs are made for supply for each financial year from 1 July (notification by 1 May), under which Sydney Water can request a production amount between the minimum (20GL per year) and maximum capacity of the plant (91.25GL per year). SDP must comply with this request within a +/-10% 'tolerance' band. The APR must be consistent with the Decision Framework.

2. Fixed Production Day (FPD)

FPDs can be notified by Sydney Water at any time, where a specific volume of drinking water

will be requested on a specific day. These requests are typically made well in advance, to support the network during major maintenance activities conducted by Sydney Water. SDP must use its best endeavours to comply with these requests.

3. Other requests made by Sydney Water

Sydney Water can make other requests in accordance with SDP's Operating Licence, consistent with its Decision Framework and the WSA. SDP must use its best endeavours to comply with these requests, which could include:

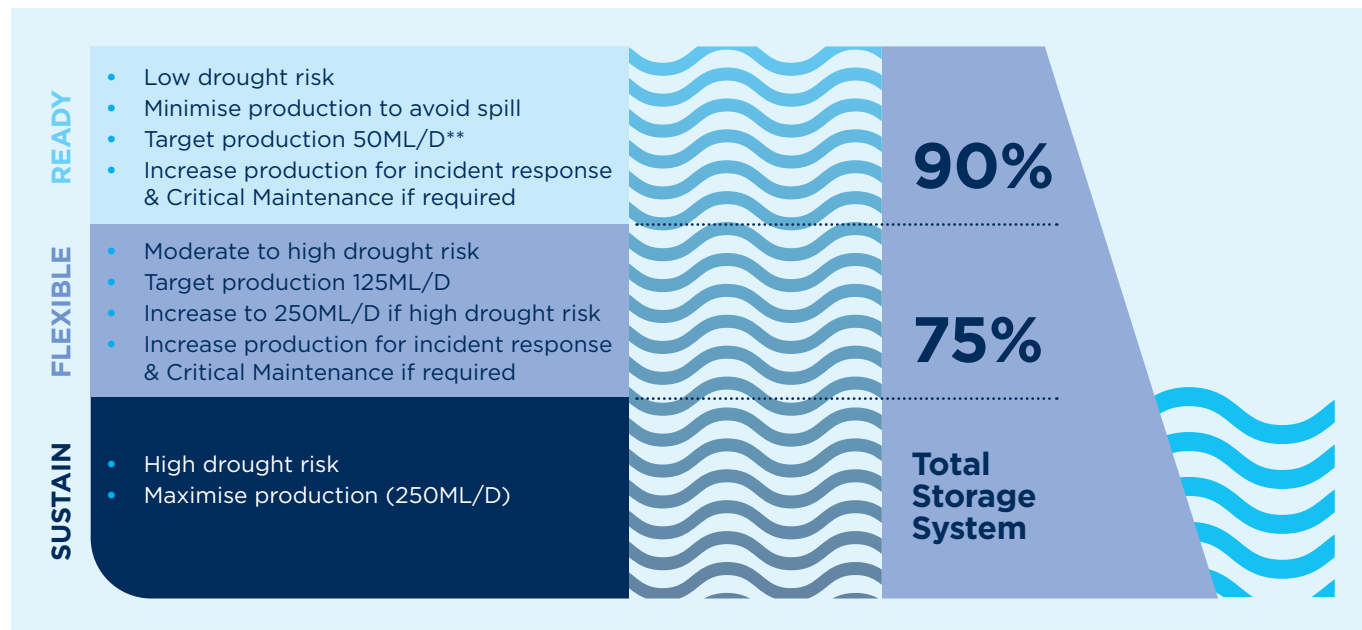
- An emergency response request to produce an agreed volume of water in an agreed timeframe (likely at short notice)
- A monthly production request to produce an agreed volume of water over a month
- A weekly production request to produce an agreed volume of water over a week.

2.4 Decision Framework

Sydney Water's Decision Framework endorsed by the NSW Government provides a clear and transparent framework for Sydney Water to make production requests to SDP. The Decision

Framework is designed to satisfy the objectives of the GSWS, reflect the Plant's Operating Licence objectives, and deliver value for customers. It is illustrated in Figure 6.

Figure 6: Decision Framework for the SDP operation under flexible full-time operation



** Target production during Ready mode = 50ML/D plus or minus changes to maintain efficiency and performance requirements under the Water Supply Agreement over a calendar year. Source: Sydney Water, Decision Framework for Sydney Desalination Plant Operation, September 2025

Under the Decision Framework, the primary focus of water production requests are:

- Minimising spills when storage levels are greater than 90%:** When total storage is above 90% the Plant will be in the state of readiness to quickly respond to production requests such as assisting to manage short-term emergencies such as raw water quality risks, however maintenance work (particularly requiring planned outages) is prioritised to occur during these periods. The minimum 'baseline' APR of 20 GL per year is required over the financial year to maintain a state of readiness to respond to emergency requests (including any demonstration of capacity or ramp-up 'tests'), in line with the defined level of service.
- Maintaining flexible operations when storage levels are between 75% and 90%:** In this situation modelling suggests production of 125 ML per day from the Plant is optimal. This could involve an APR between 40GL – 60GL per year and SDP is expected to reliably meet these requests and avoid significant over- or under-production over the financial year. However, between these storage levels, there is flexibility to vary (increase or decrease) monthly or 7-day production phasing from the Plant due to considerations such as significant changes in planned maintenance and responding to emergencies.
- Sustaining water security when storage levels are less than 75%:** Sydney Water is expected to issue an APR set to 91.25GL per year to slow the depletion of dam storage levels, with limited exceptions to reduce production to manage critical planned or unplanned maintenance or outages at SDP and within Sydney Water's network.

The key challenge for SDP with the potential production requests from Sydney Water that are consistent with their Decision Framework is that asset management objectives, strategies and risk mitigation measures must adapt to changing dam storage levels and forecast production requirements. Depending on the operating context, SDP may need to vary its approach to planned outages, temporary reductions in capacity, the timing of capital expenditure (including the deferral or acceleration of investment), and the optimisation of disruptive works for either lowest cost or fastest delivery.

2.5 Water Supply Agreement

A Water Supply Agreement (WSA) is in place between SDP and Sydney Water provides further guidance on general requirements and the detailed operating protocols between the two parties.

SDP engaged extensively with Sydney Water to develop levels of service that meet both the NSW Government's objectives for Greater Sydney's

water supply security and the more specific needs of Sydney Water. The level of service is summarised in Figure 7.

Figure 7: Defined level of service in the 2027-32 regulatory period

Sydney Water production requests	Notice period to respond to production request	Volume of water requested	Duration of water supply
Annual Production Request (APR) <ul style="list-style-type: none"> Monthly phasing of production Weekly phasing of production Fixed Production Days 	Notification by 1 May each year	From 20 GL to 91.25 GL/pa	12 months, supply from 1 July to 30 June
Other Production requests including: <ul style="list-style-type: none"> Emergency response request Changes to / additional Fixed Production Days Any demonstration of capacity 	Notification and response by agreement — timing and volume	Up to 250 ML/day, additional to the APR Note: the total requested volumes under the APR and any other request do not exceed 91.25 GL p.a. or 250ML/day.	For emergency — as agreed likely to be short-term

Source: Sydney Desalination Plant

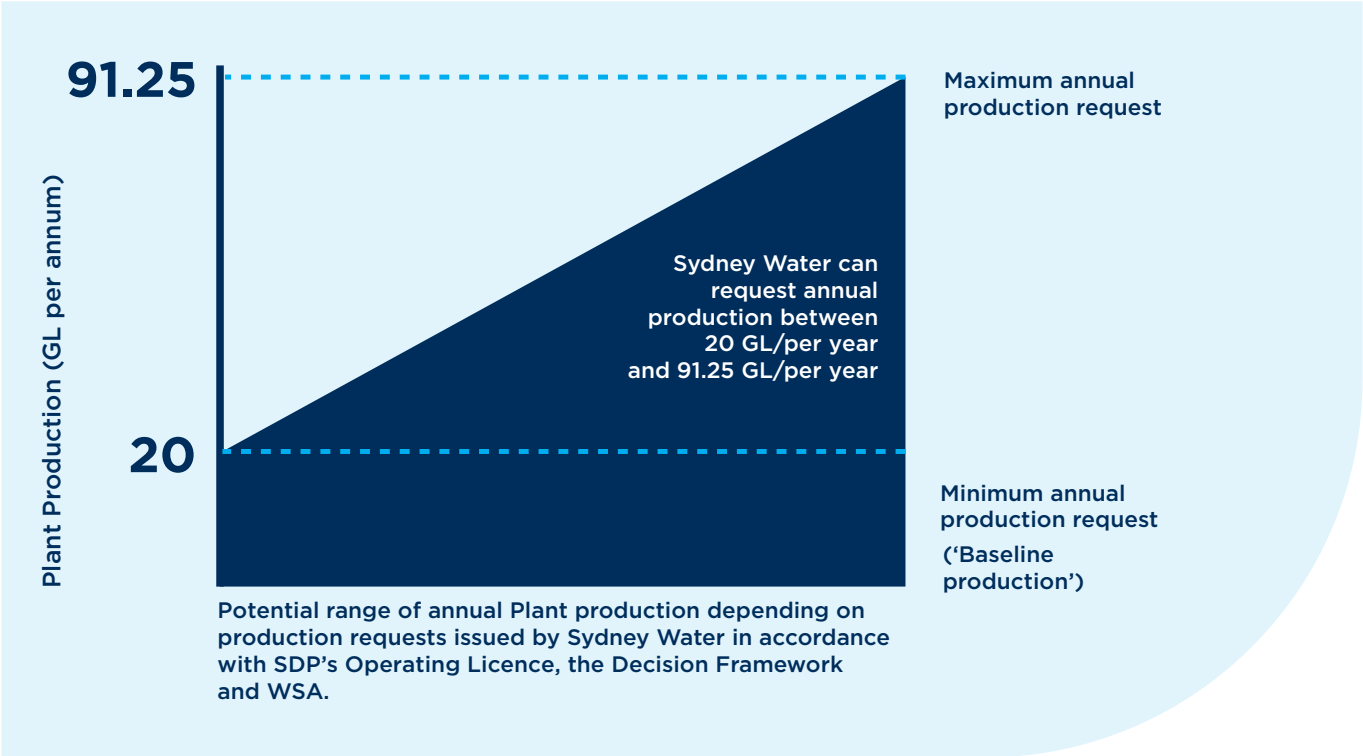
An implication of the Operating Licence and defined level of service is that the Plant will remain operational with Sydney Water to request a:

- Minimum APR of 20GL per year (scheduled at SDP discretion through consultation with Sydney Water including 'ramp-up' tests) and;
- Maximum APR of 91.25GL per year in line with the design parameters of the Plant (equivalent to average production level of

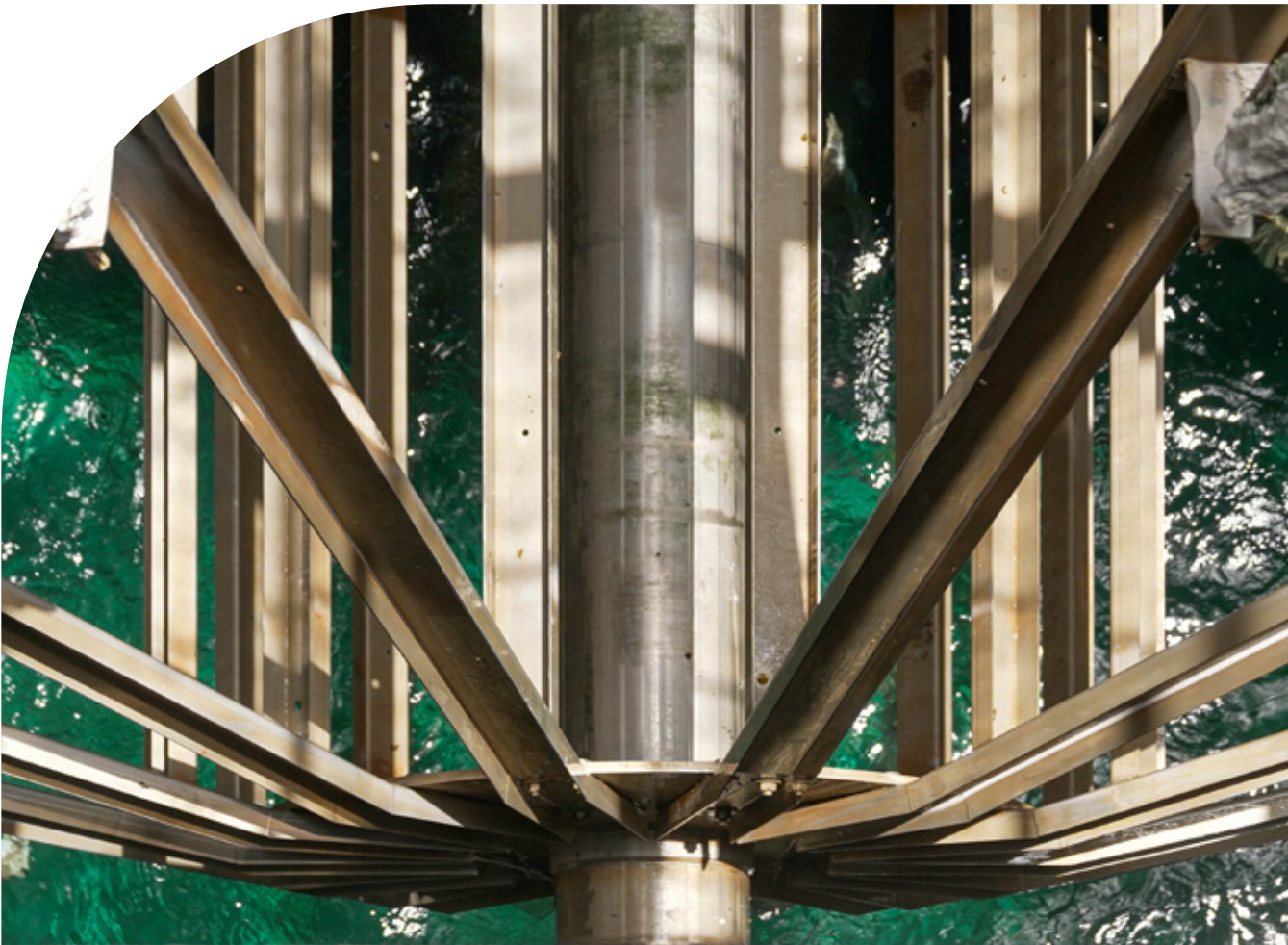
250ML per day). SDP is expected to meet, and where possible to beat, this request by maximising water production over the financial year in drought conditions.

Annual production from the Plant could range anywhere between this minimum and maximum, depending on production requests from Sydney Water (Figure 8).

Figure 8: Minimum and maximum annual production of the Plant



Source: Sydney Desalination Plant



3. EMERGING TRENDS AND CHALLENGES

In 25 years from now, Greater Sydney will be a very different place and SDP's operational context will have materially changed.

This section describes five key trends and challenges we have identified which will affect our future operations and service delivery.

3.1 Major asset renewals and replacements

The Plant has reached an age where assets are nearing their design end-of-life and major investment is needed over the next 5 to 10 years. Investment needs are thus shifting from predominantly periodic overhauls, planned routine maintenance and reactive maintenance, to planned

major renewals and replacements. Key investments over the next two regulatory periods include RO membranes, ERDs, power distribution assets, pipework and variable speed drives. These are discussed further in section 4.2.

3.2 A continuously evolving role for the Plant

Looking forward, Sydney Water's needs are likely to continue evolving towards a greater emphasis on system resilience, reliability and adaptability. Climate change, population growth, changing demand patterns and the NSW Government's long-term water security objectives are key drivers of future water supply needs.

As Sydney's water system becomes more complex and exposed to extreme weather events, SDP is expected to play an increasingly important role as Sydney's only major rainfall-independent water source, helping Sydney Water manage both

drought risks and non-drought supply disruptions.

As climate variability increases and Greater Sydney's population grows, SDP may increasingly be expected to provide not only drought security, but also a dependable source of water that complements dam storage, recycling and other future supply options. In this environment, SDP will need to continue to focus on maintaining a flexible, reliable and resilient water supply system capable of responding to a wider range of future risks and community expectations.



3.3 Potential Plant Expansion

The Plant was originally constructed with expansion in mind, with the expectation that in the future it could produce up to 500 million litres of high-quality drinking water a day – double its current capacity.

There is enough land to accommodate an expansion, with major infrastructure including seawater tunnels, inlet structures and the delivery pipeline already constructed for an increased capacity. SDP also has planning and environmental

approvals in place to deliver the expansion.

An agreement governing the key regulatory and commercial aspects of the expansion between SDP and the NSW Government is also in place.

3.4 A changing climate

It is anticipated that climate change will increase the frequency and severity of natural hazards including bushfires, storms, floods, heatwaves, and rising sea levels – across Greater Sydney.

- **Climate change creates a dual challenge for SDP:** The Plant is likely to become more valuable as Sydney Water seeks reliable, rainfall-independent water supplies,
- but it may also face increasing exposure to extreme weather events, changing seawater conditions and other climate-related system shocks.

This reinforces the importance of maintaining high asset reliability, investing in long-term climate resilience, and ensuring the Plant remains capable of responding rapidly to both drought and non-drought emergencies across Greater Sydney's water network.

On the demand side, climate change is expected to reduce the reliability of Greater Sydney's rainfall-dependent water supplies through lower rainfall, reduced runoff, higher evaporation, higher demand from Sydney Water's customers and potentially longer and more severe droughts. Climate change could result in reduced inflows to dams, lower storage levels and more frequent periods where Sydney Water requires non-rainfall dependent water supplies. As a result, SDP is expected to

play an increasingly important role in supporting Sydney's water security and meeting Sydney Water's future supply needs.

However, climate change also creates risks for SDP's operations. While desalination is independent of rainfall, the Plant remains exposed to changing ocean and weather conditions. SDP's asset planning and RO membrane strategies identify future changes with seawater temperature and seawater quality being key uncertainties that could affect Plant performance, RO membrane life and future operating costs. The Plant was designed to operate within defined seawater quality parameters and future climate conditions may increase the frequency of operating conditions outside historical experience.

History demonstrates that extreme weather can affect the Plant directly. A Storm Event damaged the Plant in December 2015 and required significant repair works to return it to its pre-storm condition. The repairs and recommissioning works undertaken following this event subsequently aided the successful 2019 restart of the Plant.

3.5 Emerging technology

Emerging technology will affect the Plant in several ways. First, advances in RO membrane technology, ERDs, variable speed drives, sensors and process control systems can improve the Plant's efficiency and reliability over time. These technologies can reduce energy consumption, improve treatment performance, extend asset life, increase operational flexibility and support more targeted maintenance. For SDP, where energy use and critical mechanical and electrical assets are major drivers of lifecycle cost, even incremental technology improvements can create material long-term benefits for Sydney Water's customers.

Technology change affects when and how SDP renews major assets. As assets reach the end of their economic life, we need to consider whether like-for-like replacement remains prudent, or whether newer technologies provide better whole-of-life outcomes. In some cases, adopting

newer technology may involve higher upfront capital costs but lower operating costs, improved reliability or reduced obsolescence risk. In other cases, the most prudent approach may be to defer adoption until the technology is sufficiently proven, commercially mature and cost-effective.

Digital and operational technologies are likely to improve the way the Plant is monitored, operated and maintained. Better asset data, advanced analytics, condition monitoring and digital decision-support tools can help SDP and the Plant Operator to identify emerging performance issues earlier, optimise maintenance timing and improve the evidence base for capital planning. This can support a more predictive approach to asset management, reducing the risk of unexpected failures and helping forecast investments to be based on condition, risk and lifecycle cost rather than fixed replacement intervals alone.

3.6 Our plan to meet these trends and challenges

SDP will respond to these emerging trends and challenges through a disciplined, long-term approach to asset management, operational flexibility and continuous improvement.

This will involve prioritising renewals and replacements where they are justified by asset condition, risk, lifecycle cost and service outcomes; maintaining the Plant's readiness to respond to Sydney Water's evolving production requirements; and progressively strengthening resilience to climate-related risks, including extreme weather events and changing seawater conditions.

We're investing to meet our increased obligations under the Security of Critical Infrastructure Act and recently enhanced Critical Infrastructure Risk Management Program rules. This expenditure supports the implementation of an enhanced critical infrastructure and cyber security risk posture in response to an increasingly complex threat environment and more stringent regulatory requirements.

We'll continue to monitor technology developments closely, test opportunities where they are likely to deliver value, and adopt new

technologies only where they are justified by robust business cases. This disciplined approach is aligned with feedback from the CAP and recognises that not all emerging technologies will be suitable for SDP's operating environment or deliver value for Sydney Water and the customers it serves. It also supports future technology choices remaining aligned with SDP's core objectives: maintaining safe and reliable drinking water production, preserving operational flexibility, managing whole-of-life costs and supporting Sydney's long-term water security.

We have developed a Digital and Operational Technology Roadmap and strategy to chart a course in the next regulatory period and the longer term as outlined in Box 5.

Together, these actions will help ensure the Plant remains a reliable, flexible and cost-effective source of rainfall-independent drinking water as Greater Sydney's water security needs continue to evolve.

Box 5: Digital and Operational Technology Roadmap

- SDP has recognised that the process of pulling together information and tailoring it for decision-making is complicated, often includes manual steps and is dependent on key personnel.
- There is an opportunity to improve how information is captured, checked, retained and used. By automating processes, we can use data to provide more insights quicker to improve decision making.
- We have mapped our processes in detail, and identified a short-, medium- and long-term roadmap of initiatives in the following areas: Reporting and assurance; Asset readiness, Condition and history; Capital planning and close-out; and Plant evidence and readiness.
- One enabler we are investigating is the use of AI. However, our approach is deliberately staged, so we only implement AI solutions when it adds value to processes. Our first step is to strengthen data quality and reporting to build the evidence of AI's useful implementation.
- We will rely on digital initiatives to reach our efficiency targets by identifying challenges and target outcomes, even though we have not always identified the specific solution or saving attributed to each initiative. We are taking a programme approach, backed by a general industry and economy-wide trend of utilising technology and artificial intelligence (AI) to realise gains.

3.7 Our culture of continuous improvement

SDP's culture of continuous improvement is central to how we manage the Plant and Pipeline over the long term.

It reflects a commitment to continually challenge how we operate, maintain and invest in our assets so that we can deliver safe, reliable and efficient drinking water production at the lowest sustainable whole-of-life cost. This is particularly important as the Plant moves into a phase of major renewals, more flexible operation, changing climate risks and emerging technology opportunities.

Continuous improvement is embedded in SDP's asset management and planning processes. We regularly review asset condition, performance trends, maintenance outcomes, operational experience and new information from the Plant Operator to refine our forward investment program. This helps ensure that renewal and replacement decisions are based on evidence, risk and lifecycle cost, rather than fixed timeframes alone. It also allows us to identify opportunities to extend asset life where it is prudent to do so, or to bring forward investment where performance, reliability or safety risks justify earlier intervention.

SDP also works closely with our Operator to identify practical improvements in day-to-day Plant performance. This includes reviewing opportunities to optimise energy use, chemical dosing, RO membrane performance, maintenance scheduling, process control and operating procedures. These improvements may be incremental, but over

time they can make a meaningful contribution to reliability, efficiency and value for Sydney Water and its customers. A strong feedback loop between operations, maintenance, asset planning and governance means that lessons learned from actual plant performance are reflected in future decisions.

The same approach applies to capital delivery and technology adoption. We'll continue to test whether new technologies, digital tools and alternative delivery approaches can improve outcomes before committing to material expenditure. Where opportunities are identified, they will be assessed through robust business cases that consider deliverability, risk, lifecycle cost, benefits to Sydney Water and its customers and alignment with SDP's long-term role in Greater Sydney's water system. This disciplined approach helps to ensure that innovation is pursued where it creates value, while avoiding unnecessary cost or operational risk.

By embedding continuous improvement into our governance, asset management and operational practices, we can keep the Plan current and responsive to change. This supports more transparent, prudent and efficient investment decisions, and helps ensure the Plant remains ready to meet Sydney Water's evolving needs while continuing to deliver value.



4. OUR LONG TERM INVESTMENT PLAN



4.1 Asset replacements are the focus for the next 10-years

This section provides a summary of the first 10-years of the Plan, followed by a high-level overview of the following 15-years.

Figure 9 summarises actual and forecast capex for the Plant and Pipeline between 2023-24 and 2036-37. Over the next two regulatory periods (i.e. next 10 years) we forecast total capex of \$374.2m based on 38 GL annual production and incorporating our 0.7% per annum continuing efficiency target. This includes:

- \$164.7 million for the 2027-32 regulatory period,
- \$209.5 million for the 2032-37 regulatory period.

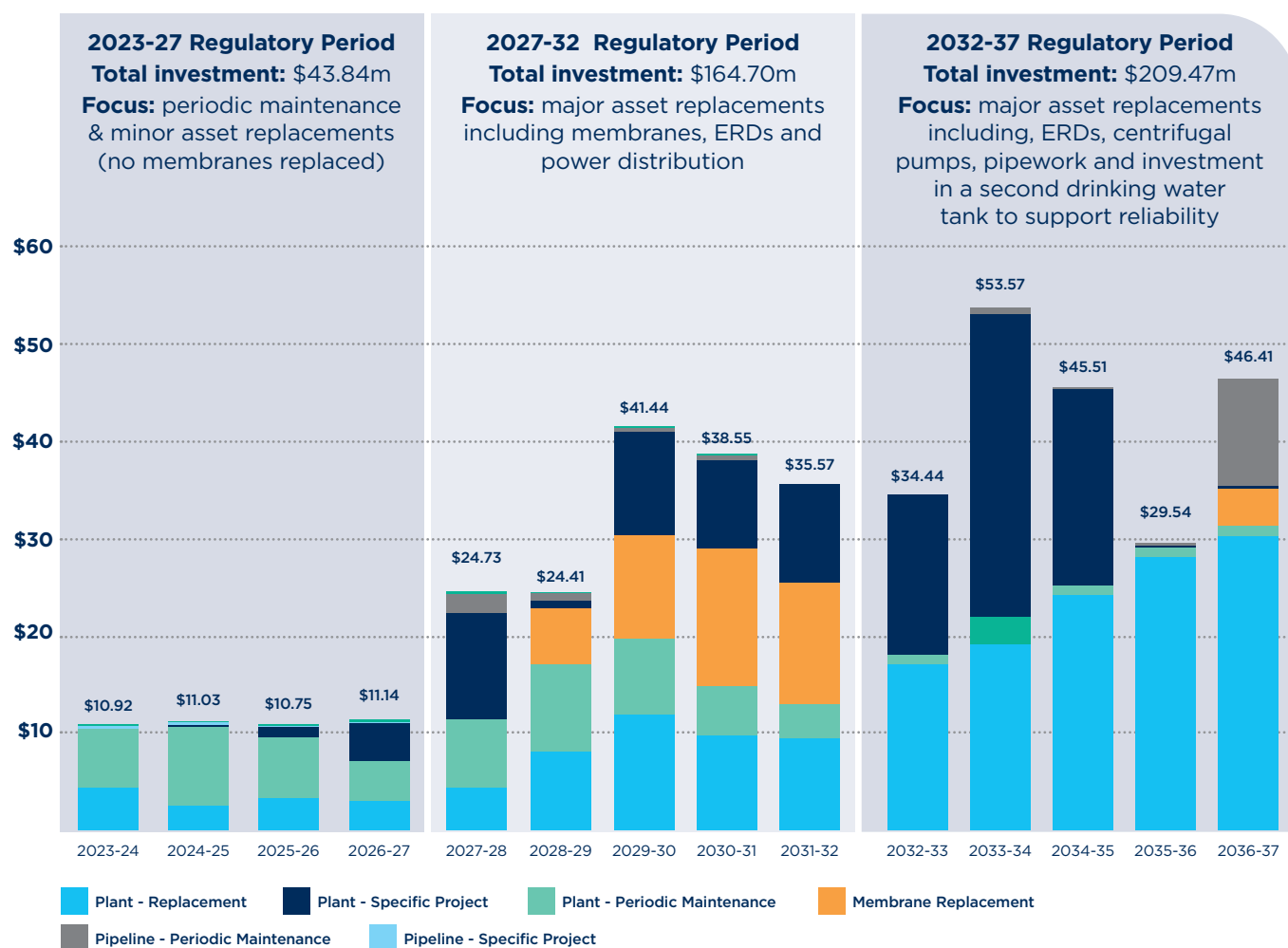
One of the reasons that capex is increasing in the 2027-32 regulatory period is because there were no RO membrane replacements in the

2023-27 regulatory period. As water production levels were lower than forecast in the 2023-27 regulatory period and the existing RO membranes have continued to perform effectively, we made a prudent and efficient decision to defer RO membrane replacement capex to the 2027-32 regulatory period.

Over the next two regulatory periods we will also undertake other important asset replacements, including of the ERDs, power distribution systems, pipework, variable speed drives, and centrifugal pumps. These and other key investments are discussed in Section 4.2.



Figure 9: Actual and forecast capex for the Plant and Pipeline 2023-24 to 2036-37 (\$2026-27, \$ million)



Source: Sydney Desalination Plant

4.2 Key investments over the next 10 years

This section summarises our major investment areas over the first 10-years of the Plan.

More information, including business cases and investment strategies, have been provided to IPART as part of our 2026 pricing proposal.

4.2.1 Replacement of RO membranes

The ongoing maintenance and replacement of RO membranes is critical for ensuring overall Plant efficiency and the reliability of the water treatment process. As RO membranes age there is a gradual increase in the feed pressure required to achieve the same permeate flow rate (rate of water that passes through the RO membranes), and an increase in the amount of salt and other chemicals that pass through the RO membranes, reducing permeate quality.

Eventually one of several potential drivers will trigger the need to replace RO membranes. These include performance-based drivers such as increased salt passage that can breach drinking water standards, and economic drivers, or where rising feed pressure increases energy consumption to a point where it is more economical to replace the RO membranes. With the Plant under a flexible full-time operating regime, RO membrane

replacement needs to be undertaken progressively, rather than all-at-once. Replacing all RO membranes at once would not allow SDP to meet its service level obligations of its Operating Licence and to Sydney Water through the WSA.

A complete replacement of RO membranes is a significant investment (around \$50 million). Our Membrane Replacement Strategy was developed incorporating current performance and condition under flexible full-time operation, lifecycle costs, performance criteria for ongoing monitoring and performance thresholds to prompt action (replacement or other actions). Our Strategy aims to maintain compliance and Plant availability at the lowest lifecycle cost and for an acceptable level of risk. If we did not replace RO membranes, we would eventually either not meet drinking water quality guidelines and/or produce water at an inefficiently high cost.



4.2.2 Energy Recovery Device (ERD) upgrades

An ERD captures the high-pressure energy remaining in the Plant's reject brine stream (saltier seawater that does not pass through the RO membranes) and transfers that energy back into the processing of the incoming seawater feed stream to the RO membranes. This significantly reduces the amount of power required by the high-pressure pumps, which are among the Plant's largest energy users. By recovering and reusing energy that would otherwise be wasted, ERDs improve overall Plant efficiency, reduce operating costs, and help make desalinated water more affordable for Sydney Water's customers.

Our proposed capex for ERD replacements is based on our ERD Strategy. This Strategy assesses the costs of maintaining, refurbishing and/or improving the existing Dual Work Exchanger Energy Recovery (DWEER) ERDs, compared to replacement with newer, more reliable and more efficient technologies.

There is a general industry trend to move away from DWEER technology, with safety being a key driver. Other drivers include that the DWEER technology is becoming obsolete and less supported, and that it is complex and very difficult and costly to maintain. The DWEER Original Equipment Manufacturer (OEM) no longer stocks spare parts, increasing some part delivery times

out to almost a year. This poses a major operational risk to the Plant if multiple unexpected breakdowns occur, potentially reducing overall Plant capacity for several months if not longer. Not investing in ERDs would therefore put our workers at risk of injury, risk our existing technology becoming obsolete and risk the Plant being unavailable for an extended period.

Our ERD Strategy found that the optimal position that balances risk and lowest lifecycle cost is to replace six DWEER units in the 2027-32 regulatory period, and the remaining seven units in the following regulatory period. This replacement schedule will be complemented by continuation of our 5-yearly refurbishment of the existing DWEER units until they are progressively replaced with rotary pressure exchanger technology. Our ERD Strategy shows that this approach is required so that the Plant can continue to comply with our Operating Licence requirements to maintain the availability of the Plant to respond to emergencies and prepare for drought conditions if they were to occur in Greater Sydney.

If we did enter drought during the 2027-32 regulatory period, it is likely that we would need to replace more than six DWEERs as the reliability risk of the remaining seven units would be too high when operating at full production.

4.2.3 Replacing power distribution components

The Plant's power distribution system is critical because it provides the reliable and continuous electricity needed to operate energy-intensive processes, including high-pressure pumps, treatment systems and control equipment.

Failure of key power distribution assets can interrupt the Plant's water production, create safety risks and increase the likelihood of unplanned outages, making timely maintenance and replacement essential to maintain reliable water supply.

In the 2023-27 regulatory period, IPART approved the installation of a second 132kV feeder to provide greater resilience for the Plant and reliability of supply for customers. An additional benefit of installing a second 132kV feeder is to futureproof the Plant for an expansion, minimising the downtime of the existing Plant during the 132kV feeder installation. The project commenced in November 2023 when

a connection request was issued to Ausgrid as part of the preliminary Expansion planning process requested by the NSW Government in 2023 (currently on hold), and will be completed in the first year of the 2027-32 regulatory period.

Over the next 10 years, replacement of power distribution assets are primarily driven by obsolescence, compliance requirements and vendor support limitations. Replacement of electrical distribution assets is challenging when the Plant is operating and hence the most prudent time to undertake renewal of power distribution assets is when the Plant is operating at less than full capacity.

4.2.4 Replacing pipework

Our pipework conveys seawater, chemicals, process water and drinking water throughout the Plant. Assets such as pipework and expansion joints form part of the water conveyance system, enabling the safe and reliable transport of water between treatment processes and ultimately to Sydney Water's customers.

As pipework ages, the risk of leaks, bursts and service interruptions increases. Replacement is

typically driven by localised deterioration from UV exposure, material ageing, gasket degradation and mechanical damage. Our projected expenditure is based on assets within our pipework asset group approaching later-life stages, and the anticipated replacements needed from deterioration or damage during the 2027-32 regulatory period. Not replacing the pipework would pose a material risk to the Plant's reliability.

4.2.5 Replacing Variable Speed Drives (VSDs)

VSDs are a foundational control technology that regulates the speed of large motors. The motors in turn provide a force to operate critical pumps, blowers, conveyors, fans, etc, at the Plant. Being able to vary the speed of the motor enables the equipment to be operated efficiently.

Over time, key electronic components deteriorate, reliability declines and equipment can become obsolete and more difficult to support. We need to replace VSDs as the existing drives are obsolete,

with some units already at end of life and others nearing the end of service support. These drives are critical to Plant production, and failures can reduce RO membrane train capacity, seawater intake, backwash capability, or potentially stop production. A staged replacement program is proposed to reduce operational risk, addresses long OEM lead times, and allow removed modules to be retained as critical spares until the remaining drives are replaced.

4.2.6 Replacing centrifugal pumps

Centrifugal pumps are used to move large volumes of seawater and process water through the desalination process, ensuring water flows reliably between key treatment stages. The performance of these pumps therefore directly affects the Plant's ability to produce drinking water efficiently and continuously. This is why they are subject to regular condition monitoring, servicing and periodic overhauls to maintain reliability and minimise the risk of operational disruptions.

Asset replacement for centrifugal pumps is required because, over time, key pump

components such as bearings, seals, pump impellers and wear parts degrade through continuous operation and exposure to demanding operating conditions. While routine maintenance and periodic overhauls can extend asset life, replacement becomes necessary when condition monitoring indicates that the pumps are approaching the end of their useful life or when the risk of failure, reduced efficiency and unplanned outages increases. We forecast the majority of these replacements will be needed in the 2032-37 regulatory period.



4.2.7 Constructing a second drinking water tank

Currently, desalinated water is stored in a 40ML Drinking Water Tank (DWT) before being transferred via the pumping station and Pipeline to Sydney Water's distribution network.

There is an area set aside at the site for an additional storage tank to incorporate any expanded production capacity from 250ML/day up to 500ML/day.

In developing this pricing proposal, SDP consulted with stakeholders on the installation of a second DWT to effectively double potable water storage capacity on site to 80ML. Relevant feedback from our CAP included:

Recommendation 2: In developing its proposal, SDP should:

- a. recognise that end-customers value fair and affordable bills, and
- b. identify opportunities to defer or delay non-essential expenditure that does not contribute to optimising its efficient operation within the regulatory period, consistent with its Operating Licence.

And Recommendation 9:

The second drinking water tank be included in the pricing proposal only if SDP can clearly demonstrate its benefits exceed its costs. The CAP considers the tank should not proceed if expansion planning is the main or only material benefit.

The feedback from Sydney Water showed support for SDP building the tank under certain circumstances.

The business case we developed to support the DWT shows that under certain circumstances the benefits of building the tank now before the Plant's expansion exceed its costs. We have balanced the findings of this business case with the feedback from the CAP and Sydney Water and decided to defer construction of the tank into the 2032-37 regulatory period.

We intend to further establish the investment case for the DWT and investigate its delivery feasibility, with our Plan including some expenditure in 2031-32 to further progress planning for this project. This approach balances enhancing reliability of water supply to meet Sydney Water's needs with affordability during the 2027-32 regulatory period.

4.2.8 Continuing periodic maintenance

Periodic maintenance is forecast to remain broadly steady and in line with previous years.

Key focus areas for periodic maintenance in the next two regulatory periods include:

- **Centrifugal pumps** – To maintain reliability, efficiency and production capability, SDP undertakes periodic condition monitoring, planned servicing and lifecycle overhauls, including vibration analysis, lubrication, seal and bearing replacement, performance testing and major refurbishments. These activities reduce the risk of asset failure, minimise whole-of-life costs and support the prudent and efficient operation of the Plant.
- **RO Membrane housing** – The RO membrane housing asset group are critical assets that house the RO membranes and associated high pressure pipework. The pressure vessels and pipework must remain correctly supported, aligned and sealed to maintain RO membrane performance, hydraulic integrity and safe operation. Our proposed expenditure on components including pressure vessel saddles, coupling bolts and gaskets is required given their deterioration after approximately 15 years in service. Degraded saddles can compromise vessel support and alignment, while aged couplings and gaskets increase the risk of leaks, coupling failure and uncontrolled high-pressure release. These issues create safety, reliability and production risks, including potential RO membrane train shutdowns and reduced Plant capacity. The proposed integrated renewal will replace degraded components, restore asset integrity, align with OEM recommendations, reduce future failure risk and support continued reliable operation of the Plant.
- **ERDs**– this relates to the ongoing maintenance component of our ERD Strategy outlined above and relates to individual vessel repairs and maintenance. SDP undertakes ongoing ERD maintenance and refurbishment activities, including vessel repairs, lubrication system maintenance, actuator servicing, condition monitoring and periodic refurbishment. These activities maintain reliability, support safe operation and help ensure the Plant continues to achieve efficient energy recovery throughout the asset lifecycle.
- **Gravity Media Filters** – Gravity Media Filters remove suspended solids and organic matter from seawater before it enters the RO process. By protecting RO membranes from fouling and damage, they help maintain water quality, plant reliability and operational efficiency. We undertake sampling of our filter media to provide an overview of their condition. This assessment, together with operational data about turbidity, head-loss and filter run times, dictate when filter media will need to be replaced. The current media has never been replaced or ‘topped-up’. Our analysis indicates the media will need replacing in the near future. If the Plant’s production increases, filter media degradation is likely to accelerate and this is a key consideration for our planning given the logistics and time required to progressively take filters offline to replace them.



4.3 After 10-years the level of capex will stabilise

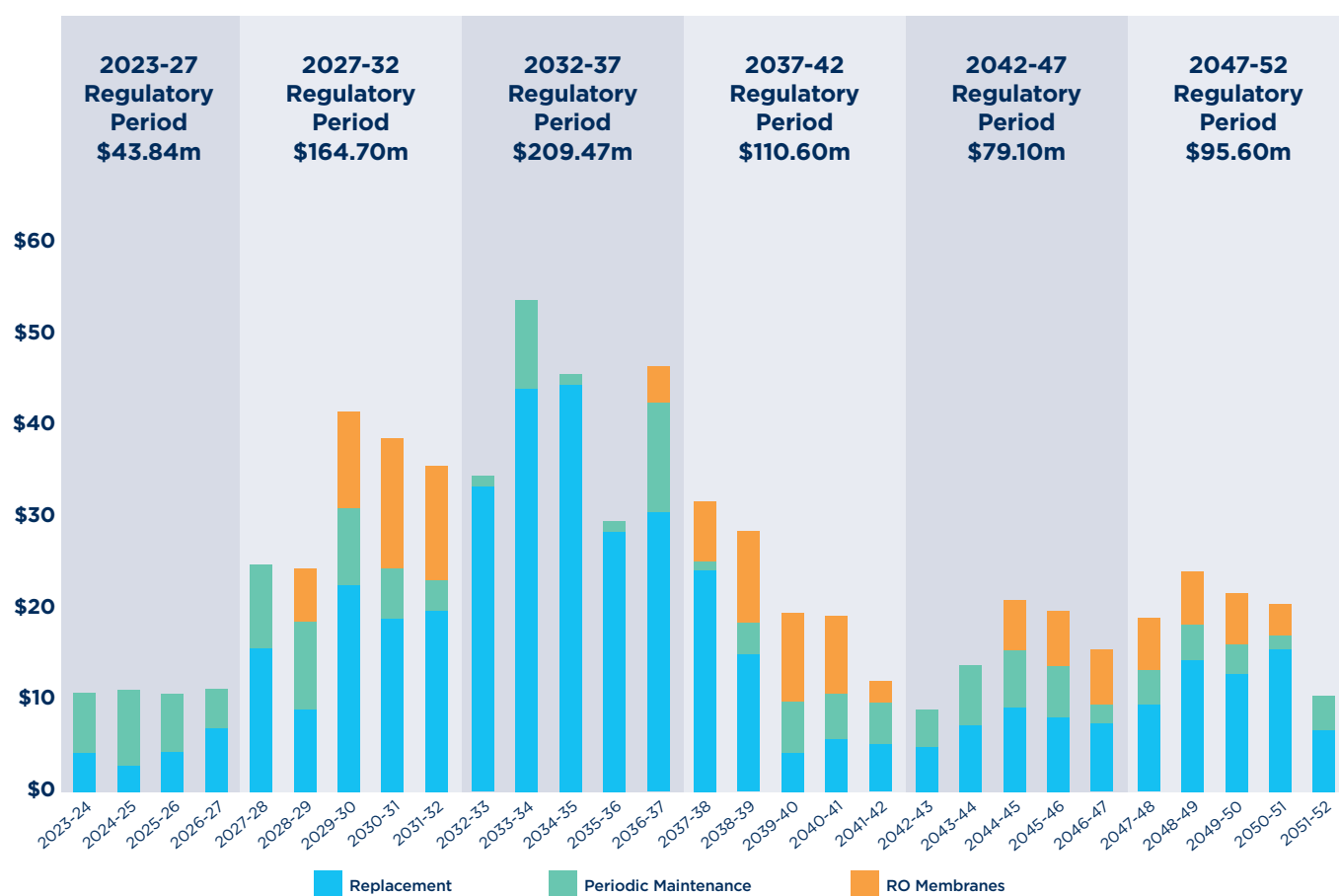
The elevated 10-year capex profile is principally driven by major asset replacements and renewals. These investments are necessary to manage ageing and obsolescence risks, preserve Plant availability and avoid higher whole-of-life costs that could arise from deferring works beyond the efficient replacement window.

After this initial replacement and renewal phase, forecast expenditure over the next 15-years reduces as the major replacement cycle is completed and the asset base moves into a more stable

lifecycle stage. This is shown in Figure 10 which shows a longer-term forecast of our capex over six regulatory periods out to 2052. Periodic maintenance will remain an important ongoing component of the program, supporting the continued performance of assets between major renewal events.

The capex profile reflects our objective of investing at the right time: not prematurely, but before asset condition or performance risks compromise service outcomes.

Figure 10: Actual and forecast capex for the Plant and Pipeline 2023-24 to 2051-52 (\$2026-27, millions)



Source: Sydney Desalination Plant

4.4 How we'll keep the Plan up-to-date

To keep the Plan up-to-date, evidence-based and aligned with the long-term interests of Sydney Water and its customers, we maintain a structured governance and review framework that integrates strategic asset planning with annual investment decision making.

The Plan is reviewed annually through a process that reassesses and refines asset renewal timing and investment priorities. This review focuses on managing short-to-medium-term exposure (1 to 5 years) arising from asset deterioration, performance issues and emerging risks. During the review, long-term theoretical renewal intervals are validated and “smoothed” by adjusting strategies forward or backward in time based on observed asset condition, performance trends and the actual operating life of comparable assets.

The annual review process includes:

1. Reviewing asset criticality assessments.
2. Conducting asset condition inspections and performance reviews.
3. Calculating asset exposure based on condition and criticality.
4. Analysing assets with high and extreme exposure ratings.
5. Developing targeted management and renewal strategies to address identified risks.

Management also reviews key planning assumptions, including asset condition, production scenarios, regulatory requirements, climate risks, technology developments and cost forecasts. A cross-functional asset planning committee challenges and validates proposed updates,

ensuring decisions are supported by sound technical and operational evidence.

Major revisions to the Plan would be supported by updated asset management strategies, business cases and lifecycle cost assessments, with independent technical or assurance reviews undertaken for significant investment decisions.

Amendments to the Plan are reviewed and endorsed by the SDP Executive Team before being presented to the Board, which provides strategic oversight and approves periodic updates to the Plan. Once approved, the short term (1 year) asset renewal plan feeds into the Capital Works Procedure, ensuring that projects are developed and delivered in a prudent, efficient and transparent manner.

To support continuous improvement, completed projects are subject to post-implementation reviews and ongoing performance monitoring. The lessons learned from these activities are incorporated into future planning cycles, creating a feedback loop that continually improves forecasting accuracy, investment timing and asset management outcomes.

Through this approach, the Plan will remain a living document that adapts to changing circumstances while supporting prudent, efficient and transparent investment decision-making.



APPENDIX A – MODELLING PARAMETERS & ASSUMPTIONS

Table 6: Key modelling parameters and assumptions

	Base assumption	Low production	High production
Modelling period	25 years	10 years	10 years
Expenditure scope	All capex		
Modelling year basis	\$2026-27		
Annual water production	38 GL	20 GL	91.25 GL
Productivity target (p.a.)	0.7%		
Asset replacement overheads	35% (project management, margin, % contingency)		
Periodic replacement overheads	15%		
Asset lives			
RO membranes	11 years		
ERDs	23 years		
Second drinking water tank	100 years		

APPENDIX B – SENSITIVITY ANALYSIS

Production volumes are a key uncertainty

As outlined in section 2, the Plant must be maintained in a highly available state with production ranging between 20 GL and 91.25 GL per year. Our production levels can and do change frequently at the request of Sydney Water, which means production levels over the next 10 years are uncertain.

We have assumed annual Plant production of 38 GL to develop our long-term capex forecasts for the Plan. However, production higher or lower than 38 GL can materially affect future capex needs principally because the rate at which many assets deteriorate is linked to how intensively they are used.

We examined how capex might change over the next 10 years in the event of low production, where the Plant operates at minimum production (20 GL/ annum) for 10 years, and high production, where the Plant is assumed to operate at maximum production (91.25 GL/ annum) for 10 years.

The results show that over the 10 years:

- Capex under the low production scenario is forecast to be \$325.6m (around 13% lower than production at 38GL per year), and
- Capex under the high production scenario is forecast to be \$410.4m (around 10% higher than production at 38GL per year).

Higher capex under the high production scenario is principally driven by production-sensitive asset groups, including ERDs, reverse osmosis membranes, high-pressure pumping systems, power distribution infrastructure and other major mechanical assets.

Sustained operation at higher production levels increases asset utilisation, accelerates deterioration and brings forward renewal and refurbishment requirements, resulting in higher capex over the 10-year planning horizon. In contrast, under the low production scenario some capital works can be deferred for the same reason by production-sensitive asset groups.

Impacts of a decision to expand the Plant's capacity

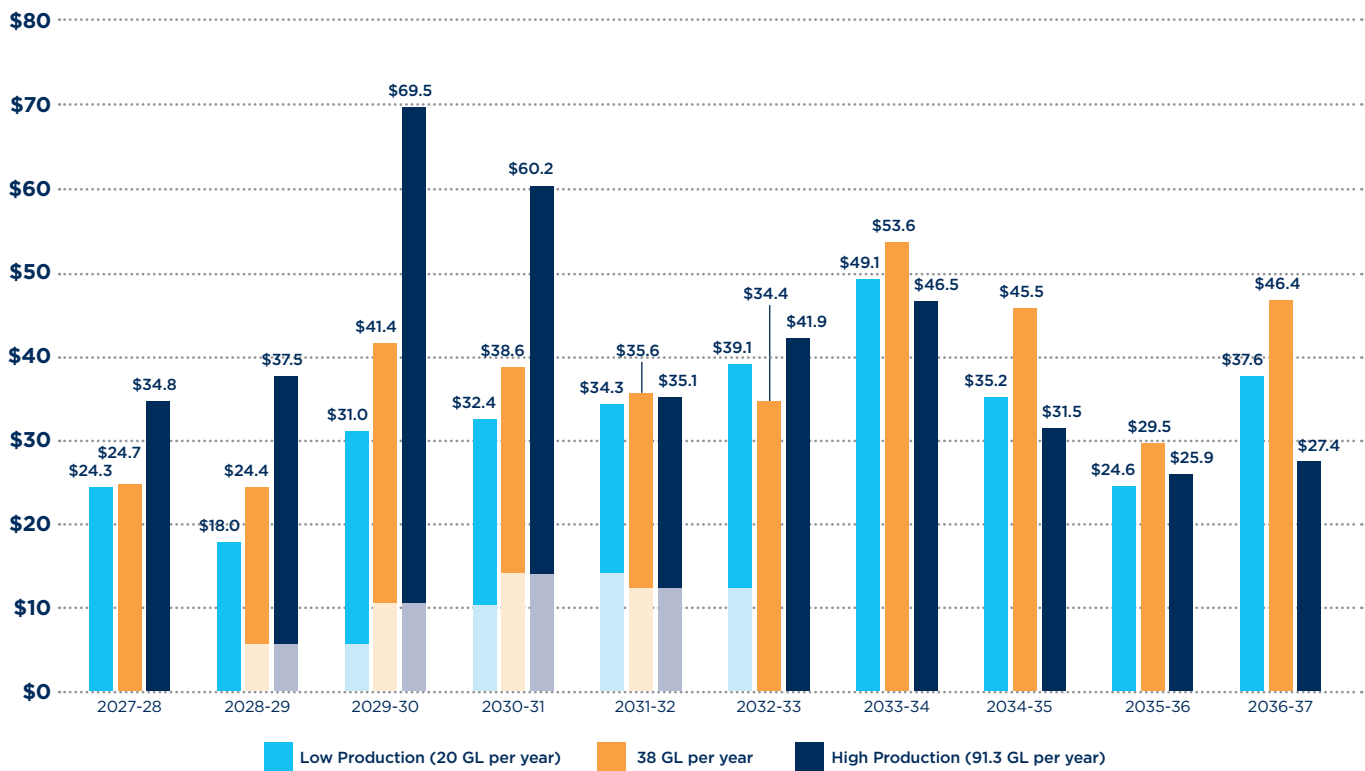
Should the NSW Government decide to direct SDP to double the Plant's capacity it would require substantial investment in new production assets, supporting infrastructure and network interfaces, resulting in a material increase in the value of assets used to provide our regulated services.

We have not modelled the expenditure impacts of a Plant expansion on our expenditure because it's too early to understand these changes with any confidence. However, from an asset management perspective, doubling capacity would alter the Plant's long-term expenditure profile. A capacity expansion would add a further layer of expenditure by creating new assets that themselves would require ongoing maintenance, renewal and eventual replacement throughout their lifecycle. As a result, the level of ongoing capital expenditure would increase, reflecting the greater scale of assets used to provide our service.

If we received a request to begin planning for the Plant's expansion during the next regulatory period it would not have a material impact on our forecast capex for the existing Plant. The Plant's expansion process may however provide some limited opportunities for SDP to identify asset replacements that may be more efficiently delivered as part of the scope of the expansion project. For example, as part of the 2023 expansion planning process, we paused development of the third drinking water pump station project and second high voltage 132kV feeder project to better understand if the projects could be delivered at a lower overall cost as part of the expansion.

If expansion occurs during the regulatory period, we will again look for opportunities to deliver projects more efficiently to reduce total cost to Sydney Water and its customers.

Figure 11: Sensitivity of forecast capex to production levels (\$2026-27, millions)



Note: Light shaded sections of columns show RO membrane replacement components. Source: Sydney Desalination Plant

APPENDIX C – GLOSSARY

Term	Definition
APR	Annual Production Request
ARV	Asset Replacement Value
Board	The Board of Directors
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CFO	Chief Financial Officer
DWEER	Dual Work Exchanger Energy Recovery
DWT	Drinking Water Tank
ERD	Energy Recovery Device
FPD	Fixed Production Day(s)
GFC	Group Financial Controller
GL	gigalitre
GSWS	Greater Sydney Water Strategy
IPART	Independent Pricing and Regulatory Tribunal
ML	megalitre
OEM	Original Equipment Manufacturer
OPEX	Operational Expenditure
O&M	Operation and Maintenance
RO	Reverse Osmosis
SDP	Sydney Desalination Plant Pty Limited
SWC	Sydney Water Corporation
VAMS	Veolia Asset Management System
VSD	Variable Speed Drive
WSA	Water Supply Agreement