Our Water, Our Voice

Strategic Customer Engagement Program

Phase 4 Final Report

Updated 24.9.24

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Welcome to Sydney Water's Customer Engagement Program: *Our Water, Our Voice*

Sydney Water is serious about listening to customers and planning for the future with customers at the heart of the process.

Starting in July 2022 and spanning 24 months, Sydney Water has been undertaking a thorough listening exercise to understand customer expectations and priorities, and customer willingness to pay for investments that align with these expectations. The program was named by customers: *Our Water, Our Voice* and runs alongside a wide range of other customer research currently being undertaken by Sydney Water.

This report summarises the findings from the fourth phase of the customer engagement program, including conversations with over 4,500 residential customers (both homeowners and renters) and more than 50 stakeholders, including Major Business Customers (Service Critical High), Major Developers, Value Makers, local, state and other government stakeholders, small and medium enterprises, between September and December 2022.

This is a detailed document, designed for an internal Sydney Water audience, and an interested external audience. It is not intended to be distributed at a community level beyond those with a keen interest.

This report follows the customer engagement structure of Phase 4. Five deliberative forums were held, drawing on population from across Greater Sydney, including the Blue Mountains and Illawarra. Each forums lasted three hours in duration and included a mix of age groups (aged 16+), gender, location, homeowners, renters, financially vulnerable, customers living with a disability, culturally and linguistically diverse and Aboriginal and Torres Strait Islander people. The deliberative forums were conducted face-to-face at locations easily accessible to customers.

Accompanying these forums was additional qualitative research with key audiences such as customers living with a disability (n=10), people from culturally and linguistically diverse backgrounds (n=30) and First Nations (n=10), major developers (n=6), service critical high businesses (n=6), owners and managers of small and medium sized enterprises (n=24), local council stakeholders (n=7) and value makers (n=6).

To supplement this document, a shorter summary-style version will be prepared – designed to be published and promoted to keep customers informed of the knowledge gathered to date, how it is being used, and where it fits in the broader regulatory process.

Our Water, Our Voice aims to involve customers actively and genuinely in Sydney Water's decision-making process. Customers have selected the name for the program, and in Phase 1 they actively shaped the focus for Sydney Water's Regulatory Proposal.

Sydney Water has the target of reaching an 'Advanced' level for this customer engagement

program, resulting in a customer-led and customer-supported Price Proposal.

I hope you find this an enjoyable and informative read and that it sets the scene for the remaining phases of the *Our Water, Our Voice* customer engagement program.

Ash Moore

Co-Chief Executive Officer, Kantar Public Asia Pacific

Acknowledgement of Country

Sydney Water and Kantar Public respectfully acknowledge the Traditional Custodians of the land and waters on which we work, live, and learn.

Their lore, traditions and customs nurtured and continue to nurture the waters (bulingang or saltwater and muulii ngadyuung or sweetwater) in Sydney Water's operating area, creating well-being for all. We pay our deepest respect to Elders, past and present. We acknowledge their deep connections to land and waters. In the spirit of reconciliation, we remain committed to working in partnership with local Traditional Owners to ensure their ongoing contribution to the future of the water management landscape, learning from traditional and contemporary approaches, while maintaining and respecting their cultural and spiritual connections.

Executive Summary

Introduction

Sydney Water is Australia's largest water utility, providing safe, high-quality drinking water to nearly 5.3 million people in and around Greater Sydney every day, along with providing wastewater, stormwater, and recycled water services to many homes and businesses.

Recently, the Independent Pricing and Regulatory Tribunal (IPART) introduced a new regulatory framework for water businesses in NSW, which requires demonstration of pricing submissions being in the long-term interests of customers, evidenced by customer preferences and willingness and to pay for water services.

The *Our Water, Our Voice* program is a six-phase program conducted between (2022–24) that provides critical input to understanding customer preferences for these regulatory submissions.
Phase 1 aimed to capture customer priorities and expectations of outcomes, understand the relative importance of each outcome, as well as customers' willingness-to-pay for these outcomes.
Phase 2 focused on the design of performance metrics to guide the evaluation of Sydney Water's service delivery. It also evaluated the current measures and settings of Sydney Water's existing service performance standards and how these align with customer expectations and priorities.
Phase 3 explored different ways Sydney Water might deliver outcomes to align with the customer priorities from Phase 1 including potential levels of service. This phase also asked customers whether they were willing to pay for improvements in service levels or whether there were any areas where they might be willing to see a reduction in service levels.
Phase 4 [the focus of this report] introduced the possibility of Sydney Water needing to significantly increase water bills to fund responses to key challenges facing Sydney Water. It assessed whether customers are willing to pay more than this to fund discretionary investments on top of this bill increase. It also explored in greater detail what is important to customers when investing in areas such as waterway health, cool green spaces and water resilience and what Sydney Water need to consider when prioritising investment in these areas.
Phase 5 will investigate how Sydney Water can best provide the services that customers want and need while managing costs, both now and in the future?

Methods

The purpose of Phase 4 was to introduce the possibility of Sydney Water needing to significantly increase water bills to fund responses to key challenges facing Sydney Water. It then assessed whether customers are willing to pay more than this to fund discretionary investments on top of this bill increase. Another purpose was to explore proposed investment areas with customers, and to understand and identify the principles they expect Sydney Water to apply as decisions are made over the next 5-10 years.

An in-depth exploration of customer expectations and preferences took place over 53 sessions of qualitative research, including five in-person deliberative forums, 14 online focus groups, and 34 individual in-depth interviews. Sessions were tailored to ensure ease of participation of different

groups. For example, customers from culturally and linguistically diverse (CALD) backgrounds were offered in-language groups and customers living with a disability had the option of inviting a carer to help with the interview.

Following the qualitative research, a 20-minute online Discrete Choice Experiment survey was conducted with 4,003 customers which is representative of the general population of Greater Sydney, including the Blue Mountains and Illawarra regions. The purpose of the Discrete choice experiment was to help with setting price that are fair and efficient. To achieve this Sydney Water needs to understand and determine customer preferences and willingness to pay for different water service investment options.

Table 1 Number of customers engaged

Engagement	Location / Engagement type	Number of engagements	Number of participants (n)
Customer Forums	Penrith, Wollongong, Sydney CBD, Hornsby, Parramatta	5	449
Online Survey		1	4,003
Focus Groups	CALD, First Nations, SME	14	64 (CALD n=30, First Nations n=10, SMEs n=24)
In-Depth Interviews	Customers living with a disability, Business Customers, Major Developers, Government Stakeholders, Value Makers	34	35 (Customers living with a disability n=10, Service Critical High Business Customers n=6, Major Developers n=6, Government Stakeholders n=7 Value Makers n=6).
Total		**45**	**n=4,551**

Findings Summary

A summary of findings from the qualitative and quantitative research are presented below.

Water bill increase

Sydney Water raised with customers the possibility of bill increases being needed over the next ten years to fund and maintain services at current levels. Much of this need is driven by increasing operational costs and the need to invest in infrastructure upgrades to support a growing population in the face of challenges such as climate change.

While the potential for a bill increase was seen as unpleasant news, it was not a surprise for customers and overall, there was general acceptance of it. Many saw a bill increase as inevitable, largely due to recent experiences of other rising costs in their daily lives such as power bills, rent, petrol, interest rates and inflation, all of which were points of reference that influenced their reaction to this news. “I’m not surprised everything else is going up” was a common response from customers.

While the fact bills could increase is not surprising, the extent of the increase (4.5% per year on average on top of inflation over the next 10 years, as presented to customers in research stimulus) was seen to be substantial by many customers. This led some to question what would happen if they were unable to afford the new pricing and how Sydney Water would approach such cases. There were also questions around why Sydney Water hadn’t invested more, and earlier, to avoid such a large, sudden increase.

Many residential customers (including value makers, CALD, First Nations people, and customers living with a disability), were unaware that Sydney Water’s only source of funding is customer bills. Upon learning this, there was even greater acceptance of the need for a bill increase. This sentiment was partly driven by an acknowledgement that Sydney Water cannot go without funding as it is an essential service along with a realisation that limited government funding is available. Customers also responded positively to the news that bills are used to deliver outcomes to customers rather than deliver profits to private investors. Customers also question the need for water utilities to deliver profits at all.

When discussing how additional revenue might be spent, most customers felt that the costs of servicing new growth areas should be covered by new customers, developers and Government rather than existing customers. This was a common theme across most customer groups although it is worth noting that new customers were not represented in the engagement as they do not currently exist. This is also an easy generalisation to make without knowing the true impact, “I don’t want to pay, let someone else pay”. If the true individual impact of making new customers and developers cover this cost was presented, it is possible that customers would not agree with such an arrangement. Further research may be needed to determine whether it is fair for all customers to cover this cost.

Businesses expressed more concern than the general public about having to bear a bill increase. This was because many were concerned that they would not be able to pass this additional expense on to customers, especially businesses with fixed price, contract arrangements in place.

Areas of investment

Customers were shown a proposed example of how additional revenue collected could fund a range of proposed investment areas. They were largely accepting of this example and how funding would be shared across these areas. Some also mentioned that they were not experts in this area and would defer judgement to Sydney Water around what areas require investment.

This notion held for many of the investment areas, although many customers questioned the high proportion of funding allocated towards 'enabling Sydney's growth' (at 45% of expenditure). They also wondered if Sydney Water had underinvested in this area in the past. Additionally, the comparatively small proportions allocated towards environmental issues and tackling climate change felt insufficient to many, however some also noted that 1% was likely to represent hundreds of millions of dollars of investment. When spoken about in this way the allocations seemed more reasonable to some.

Reactions to support programs provided to financially vulnerable customers

Customers were shown a range of initiatives that are in place to support those who are financially vulnerable; and overall, they were pleased that these are available. Many customers felt that more could be done to promote the availability of such options as very few customers were aware that these options exist. They expressed that the current process is not customer-friendly in that it is difficult to find the necessary information and/or understand how these support options are applied. Ultimately, customers would like Sydney Water to improve communication that this kind of assistance is available and simplify access for customers who need it.

Waterway Health

Throughout each phase of Our Water, Our Voice, customers have placed considerable value on maintaining the health of Greater Sydney's waterways. Phase 4 was no different and customers again reiterated the importance of this priority. They stated that Greater Sydney's waterways are elemental to life in the region, regardless of whether they are active users of them or not. Given the large number of waterways in the region, prioritisation of effort is also important. In Phase 4 Sydney Water sought to understand what to prioritise when looking to improve and maintain the region's waterway health.

Prioritisation of waterway types

Many customers agree that the first priority should be to improve waterways that are highly disturbed and fear that these might continue to deteriorate if left alone. There was also concern about the potential for these sites to have negative effects on other waterways if left in a bad state, particularly when there is bad weather.

Prioritisation of waterway values

Customers were presented with a list of values that can be applied when considering investment in waterway health. 'Creating a place for plants and animals to thrive' was the most important value that customers wanted to prioritise. The general sentiment is that flora, fauna, and people must coexist, and doing so has a positive effect on communities and biodiversity. There was also recognition that if Sydney Water focused on ensuring that waterways are healthy enough for plants

and animals to thrive then other values, such as the ability to enjoy recreation would also be enhanced as an indirect benefit.

Investment considerations

Customers were asked to identify the key investment considerations that were important to them regarding maintaining and improving waterway health. Customers felt that 'the potential benefits to the community' and 'the effort required to improve current waterway conditions' were the most important considerations for Sydney Water when investing in waterway health. They also want Sydney Water to prioritise positive public health outcomes (both physical and/or mental) and ensure that social and tangible benefits to the community and ecosystems are maximised for the greatest number of people.

Customers also had preferences for specific actions when it comes to improving waterway health. Customers were strongly in favour of actions such as 'Reducing wastewater pollution and litter'. Driving this was an assumption that fixing issues related to these has the biggest impact on restoring waterway health.

Based on the Discrete Choice Experiment (DCE), customers who pay a water bill were willing to pay an additional $21 on top of their quarterly bills (over and above the proposed 36% increase in bills over the next 10 years) to see 200 identified urban waterways improved. Renters were willing to see their monthly rent increase by $11.20 to achieve the same outcome.

Distributing the costs of complex stormwater systems

An important question for Sydney Water to understand is whether customers prefer that the costs of operating the more complex stormwater systems across Greater Sydney should be distributed across the entire customer base or isolated to customers in areas where those systems are located. Responses to this question were mixed and there were groups of customers who argued both for and against both approaches.

A 'we're all in this together' sentiment underpinned arguments for spreading costs across the entire customer base. 'User pays' arguments and concerns about 'double paying' for stormwater underpinned arguments against spreading the cost over the entire customer base.

For others, equitable distribution is more practical, and they argued that it can be a 'slippery slope' if people are allowed to opt in/out of what public services they do and don't pay for. There were discussions about equity and fairness in this regard, with some customers pointing out that many of the areas with more complex stormwater systems were also more affluent, and some argued that people who choose to live in more expensive areas should absorb such costs (as they are more able to do so).

Cool, Green Spaces

Throughout each phase of Our Water, Our Voice customers have placed considerable value on increasing the amount of recycled water that is made available for irrigating public green spaces. Despite this, delivering more recycled water for irrigation is an expensive undertaking. In Phase 4 Sydney Water wanted to understand more about customer's appetite for more recycled water and what considerations to prioritise when making investments in these areas.

Use of existing and proposed open spaces.

Most customers were surprised to learn that 95% of irrigation is sourced from potable drinking water (sourced from dams), and there was vast agreement that this is too high and that alternative sources of water need to be found if green spaces are to be kept green. As a result, customers expressed a willingness to pay more to ensure that public green spaces are irrigated using stormwater or recycled water. This benefit was more important to many customers than the cooling benefits achieved through maintaining green spaces in dry conditions. Some customers felt the cooling benefits of maintaining greenspaces was a somewhat abstract concept and difficult to imagine; however, others with recent memories of COVID lockdowns place considerable value in having access to green spaces nearby.

Prioritisation of investments into cool, green spaces across Greater Sydney.

Many customers suggested that projects to deliver cool, green spaces should be spread across Greater Sydney in an equitable way, that ensures the greatest number of people benefit.

In contrast to residential customers, council and government stakeholders had stronger opinions on how to prioritise investment in cool green spaces. Council and Government stakeholders often spoke about the equity and fairness around which projects should be prioritised, e.g., they argued that more recycled water should be delivered to spaces in less affluent suburbs as these locations typically have 'the lowest green canopy cover'. They also mentioned that they could help Sydney Water with the delivery of such projects, given that they have good expertise, and that Sydney Water could benefit from such a collaboration.

Customers were shown the spaces in Greater Sydney that are currently receiving recycled water for irrigation. Many noted that these places were in locations that they do not to visit regularly if at all. This often meant that customers did not have strong opinions about them. There was, however, some frustration about the number of golf courses benefiting from investments in recycled water. This frustration was due to golf courses not being freely accessible to the general public. In other words, customers felt such investments should benefit the entire community not just those who play golf.

Preferred water sources for keeping spaces green and cool.

Customers are not in favour of continuing to rely on rainfall captured in dams as the primary water source for maintaining green public spaces. They were much more positive about the use of 'Water recycled from wastewater' and 'treated stormwater/rainwater' for this application. These options were preferred as they allow potable water to be reserved for essential uses in times of drought. Customers are in favour of recycled water being used for non-drinking purposes and value the fact its availability is independent of rainfall. Customers also like the idea of harvesting

stormwater for this purpose, many see stormwater as a wasted opportunity. It is often perceived to be a plentiful and readily available source of water that is underutilised.

Considerations for investment decisions around cool, green spaces

Consistently, customers want Sydney Water to consider projects and initiatives that 'have the largest positive impact', followed by 'projects that help those who are most in need' (when making decisions about investments in cool, green spaces).

During this discussion, customers considered the benefits of an enlarged urban tree canopy. They often talked about places in the West of the city being more prone to extreme heatwaves and that they need more greenery than they currently have. A larger population also meant that considerable numbers would be set to benefit if this area was to receive investment. This sentiment held across much of Sydney, although customers in the Illawarra were more inclined to prioritise their local area.

The DCE showed that customers who pay a water bill were willing to pay an additional $6.20 on their quarterly bills (over and above the proposed 36% increase in bills over the next 10 years) in order to supply 6.5 billion litres of recycled water to support 1,300 hectares of open green space. Renters were willing to see their monthly rent increase by $2.70 to achieve the same outcome.

Water Supply Resilience

Greater Sydney's current water supply is often exceeded by the region's demand meaning that Sydney Water is vulnerable to drought. Sydney Water were interested in how they can ensure that the region's water supply is greater than water demand when there are extreme conditions. During Phase 4 customers were asked about the water resilience question from both sides. Firstly, customers were asked how willing and able customers they are to reduce their demand when there is drought and for how long. Next customers were asked about their preference for how Sydney Water approach the challenge of increasing Greater Sydney's water supply and what considerations should underpin investment and spending decisions.

Reducing water use

Most customers accept that, even outside of drought, they have a responsibility to save water and reduce their usage. Most indicated that the biggest challenge was their awareness of how much water they are using. Many don't know how much water they currently use at any given time; and would like Sydney Water to provide more information, education and support to help them understand and manage their usage. Reasons for this low understanding include manual meter reads every quarter which customers feel are to infrequent and make it hard to understand the difference that individual actions can have. This affirms findings from other research conducted by Sydney Water which has shown that notable proportions of the population have limited knowledge about how much water they use or how they could reduce their usage from current levels.

If required, many customers felt they could reduce their personal usage and, if needed, could do so for 'a long time'. In contrast, business customers felt it would be difficult to significantly reduce their water usage. Some worried it might impact their viability if they were required to reduce usage by too much. Some business customers believed the best option to reduce their daily water usage

would be to use recycled water as much as possible, although most were unsure whether this was a viable option.

Investment considerations regarding new types of water supply infrastructure

Customers were also given the opportunity to discuss their preferences as well as the pros and cons for different water supply options. Overall, there was a rough consensus around the idea that 'no one solution was a silver bullet' and that no solution was perfect, as each option has its drawbacks. For example, customers were most hesitant about Purified Recycled Water for drinking, but most people were positive about desalination and recycled water for non-drinking purposes. We should note that while this sentiment was common, it was not unanimous, with some pockets of customers expressing strong support for PRW while others were opposed to the use of desalination (due to reservations about its cost, environmental impact and efficacy).

With regards to PRW customers appreciate that it is independent of rainfall, but there were concerns about the quality of the water produced and whether it could be made safe to drink. Much of the discussion around PRW reflected feedback received as part of Sydney Water's Water Literacy research (that has been running for approximately two years).

Customers were generally very positive about dams and valued them highly, however; they also recognised significant obstacles with building new dams or extending existing dams. This included a recognition that there is a lack of suitable locations close to Sydney to undertake such projects.

There was also reasonably strong consensus among customers that desalination is the best option for securing the region's water supply. This was partly due to people's familiarity with it and its ability to produce safe potable drinking water that is independent of rainfall. Many however, recognised that this is not a perfect solution, as it has considerable environmental and financial impacts.

Overall, customers are positive about the use of recycled water for non-drinking purposes. It is seen as a way of reserving potable water (collected in dams) for essential purposes (such ask drinking). The major drawback for customers is the cost of building, especially because a separate pipe network is needed although most were not previously aware of this cost.

For many customers harvested stormwater for non-drinking purposes feels like a good idea that should be pursued. Underpinning this sentiment is the view that when it rains, significant amounts of water is lost as stormwater. As mentioned above, customers often view this as a missed opportunity; however, their understanding of the costs involved in capturing stormwater vs the current cost of dam water seemed very limited.

Overall, the DCE showed that there is an appetite amongst customers to pay more in their quarterly bills to reduce the likelihood and frequency in which severe restrictions are required and experienced (to 8 years from the current service level which is 5 years). For example, if everything else remained the same, customers (homeowners) would be willing to pay an additional $13 per quarter on top of their existing bills and a 36% proposed bill increase. Renters would be willing to pay an additional $2.80 in their monthly rent for this service enhancement.

Considerations for decision-making around new water supply options

Customers agreed that 'being independent of rainfall' was one of the most important considerations when investing in water resilience solutions. In contrast to residential customers, business customers felt the 'cost to build' was not as important as other considerations, some felt this could lead to cost cutting which might compromise quality and safety.

Who should pay for new water infrastructure was also a consideration and there were no true consensus about who should be responsible for this. Some customers felt everyone in the community should contribute and that paying through water bills was a good way to ensure this, while others felt the government should harbour more of the responsibility as it is an essential service that society cannot do without.

Some customers doubted the efficacy of water restrictions or the ability of the community to conserve water and believed that investing in new supply was critical. They argued that ignoring restrictions was easy and that it is too hard to police. Some also argued that high water users would not reduce their water usage. Some customers also described a false economy with water conservation where greatly reducing their individual water usage would be more costly for the community in the long run. For example, if customers and councils were unable to water gardens for an extended period, the cost of bringing them back to life would be substantial. They suggested that spinoff impacts such as these need to be carefully considered in any usage reduction strategy explored by Sydney Water.

The DCE showed that customers who pay a water bill were willing to pay an additional $13 on their quarterly bills (over and above the proposed 36% increase in bills over the next 10 years) in order to see the frequency in which restrictions are experienced reduced. Renters were willing to see their monthly rent increase by $2.80 to achieve the same outcome.

WTP for individual attributes

The results of this WTP study provides insight into the preferences of customers, including which attributes of Sydney Water's service are most important for customers and should be prioritised over the next 5 to 10 years.

Discrete Choice Experiment (DCE) was the methodological approach used to study choice behaviour. DCE analysis involves estimating utility functions for the included alternatives. Utility in this context is a term used in economics which refers to the overall benefit or well-being customers derive from services and initiatives delivered by Sydney Water. Utility is a measure of the value that a customer places on this service and its ability to improve people's lives through economic benefits, social and environmental outcomes. It reflects the subjective preferences of customers, can be both positive and negative, and can vary from person to person, and from situation to situation. Ultimately, Sydney Water is seeking to maximise customer utility from its services and investment offerings.

Using the data from the survey scenarios (the DCE component of the survey) the model estimates the parameters for each attribute level. These parameters describe the magnitude and direction of influence of each of the attribute (levels) in the choice context. The econometric methods employed recognise that preferences may vary across participants, even after controlling for

observed characteristics like age and gender. The latent class models (LCM) used in this study allow for variation in these preferences and group customers based on their likeness in responses.

The final attributes used in the DCE were:

1. Cost (Owners: increase to quarterly water bill; Renters: Increase to monthly rent).
2. How long our water supplies will last before severe restrictions are enforced.
3. Number of urban waterways improved.
4. Amount of recycled water provided for green spaces.
5. Target date to achieve net zero carbon emissions.
6. Time to replace water meters with digital smart meters.
7. Chance of an unplanned interruption to a customer's water service for five hours or greater
8. Chance of a wastewater (sewage) overflow.
9. Chance of low pressure.

Between three and six realistic levels were applied to each attribute.

Across homeowners and renters, cost increase was the most important attribute, followed by the number of urban waterways improved, and the length of time until severe restrictions are enforced. The three least influential attributes in driving customer utility amongst both homeowners and renters were – the time to replace water meters with digital smart meters, the chance of low water pressure and the chance of wastewater overflow.

For some of the attributes, WTP was not linear over the range of levels tested. For some attributes customers were more sensitive to a decrease in service level than an improvement. So more sensitive to a loss in service than a gain in service.

A dashboard accompanies this report, which can assist with the visualisation of the model results and allows users to perform 'what if' scenarios based on different combinations of water service attribute levels.

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1 Introduction: About Sydney Water and the regulatory process

1.1 About Sydney Water

Sydney Water is Australia's largest water utility, a world-class organisation delivering essential services to Greater Sydney. Sydney Water provides safe, high-quality drinking water to nearly 5.3 million people in and around Greater Sydney every day, along with providing wastewater, stormwater, and recycled water services to many homes and businesses.

Sydney Water has a long-term strategy and vision: 'Creating a better life with world-class water services'. The strategy has been built from customer insights and provides the foundation of Sydney Water's work every day.

1.2 Customer voices, supporting Sydney Water's Regulatory Submission

Sydney Water is a statutory corporation, wholly owned by the NSW Government. Sydney Water's Operating Licence is regulated by the Independent Pricing and Regulatory Tribunal (IPART), which sets minimum standards for customers and government expectations in key performance areas. IPART also regulates what Sydney Water can charge customers for water, wastewater and stormwater services, sets Sydney Water's system performance standards, and monitors compliance against those standards.

IPART has recently introduced a new regulatory framework for regulating water businesses in NSW. This framework puts the onus on water businesses to demonstrate that the services and outcomes proposed in their pricing submissions are in the long-term interests of customers, as evidenced by customer preferences, along with willingness to pay for the services they receive. It is important that Sydney Water engages meaningfully with customers to explore their values and preferences for outcomes and uses these insights to inform its pricing submission and long-term business strategy.

IPART's requirements in relation to customer engagement highlight the need for tailored and supportive engagement to assess the outcomes that customers expect, preferences for how the outcomes will be delivered, and overall willingness to pay for those outcomes and service levels. Research and engagement are to include, at a minimum, topics such as: changes to service standards, changes to price structures, and any proposal for expenditure on customer agreed outcomes (i.e., to achieve outcomes not covered by regulation).

IPART's expectation is that Sydney Water run an industry-leading customer engagement. The *Our Water, Our Voice* customer engagement program provides the insights needed to develop Sydney Water's Enterprise Plan, which is a precursor to the regulatory submissions to IPART. These regulatory submissions specifically incorporate the revised Operating Licence and

Customer Contract, to be issued by IPART by 1 July 2024, and the price proposal, due in September 2024. These submissions will help shape customers' water bill prices for the 2025-2030 period.

Sydney Water's submissions to IPART for changes to prices and the Operating Licence will be aligned with the Sydney Water strategy and plans at all levels. The *Our Water, Our Voice* program is a critical input to these regulatory submissions.

This one-year (2022-23) program of customer engagement covers a wide range of topic areas and gives customers an opportunity to tell Sydney Water what is important to them.

Customers are already at the heart of everything Sydney Water does. Sydney Water continually engages with customers to understand their experiences, through research studies tracking customer sentiment and satisfaction with products and services. Sydney Water also reviews customer interactions through their website and Customer Hub and are committed to continual customer engagement as these activities form an integral part of the enterprise planning process.

The *Our Water, Our Voice* customer engagement program takes a long-term view. The insights gathered from this program will help shape Greater Sydney, including the Illawarra and Blue Mountains, for generations to come.

Customers, moderators, Sydney Water staff and stakeholders attending a customer forum in Wollongong on Tuesday 4th July 2023 & in the Sydney CBD on Thursday 13th July 2023

2 Engaging our customers in the regulatory process: program overview

***Our Water, Our Voice* is a multi-phase program divided into six distinct phases of customer consultation. This report summarises the findings from Phase 4 of the program.**

PHASE 1: Capturing customer priorities.
Phase 1 aimed to capture priorities and the outcomes that customers expect Sydney Water to focus on over the next five to ten years. It also aimed to understand the relative importance of each outcome and customers' willingness to pay for these outcomes. The research measured customer appetite for engagement with the decision-making process, including what their expectations were regarding their role in assisting Sydney Water to reach decisions.

PHASE 2: Capturing customer service expectations.
Insights from Phase 2 will help design performance metrics that can guide the evaluation of Sydney Water's service delivery. This includes measuring customer satisfaction and understanding customer expectations of Sydney Water's future targets (over the next 10 years and beyond). During this phase, we tested the current measures and settings of Sydney Water's existing service performance standards and how these align with customer expectations and priorities. When different service expectations were raised by customers, we discussed how the desired outcomes impacted them, how they should be measured, and how they impact existing performance standards.

PHASE 3: Customer insight for better strategic planning.
This phase explored customer sentiment towards Sydney Water's key strategic direction and business plans. The research captured customer insights to inform the development of Sydney Water's Operating Licence and Price Proposal submissions, as well as core elements of the Customer Contract.

PHASE 4: Customer recommended Customer Contract and Price Proposal.
This phase explored key areas of potential investment in 'customer priority areas. A package of potential options for investment was presented to customers to discuss their preferred performance settings, key investment considerations and their willingness to pay for new investments.

PHASE 5: Customer recommended Customer Contract and Price Proposal (Part 1).
This phase is to further explore key areas of potential investment in 'customer priority areas. This included a particular focus on preventing pollution and delivering higher levels of water resilience for Greater Sydney.

PHASE 6: Customer recommended Customer Contract and Price Proposal (Part 2).
This phase is to explore key areas of the pricing structure for Sydney Water customers and customer commitment performance targets. This includes a particular focus on the future tariff structure and pricing control Sydney Water creates and whether Outcome Delivery Incentives (ODIs) are implemented in Sydney Water's strategic business plan.

Our Water, Our Voice timeline

3 How we listened: Phase 4 approach and methods

3.1 Objectives

The primary objective of Phase 4 was to explore proposed investment areas with customers, and to identify and understand what Sydney Water should consider and prioritise during decision-making over the next 5-10 years.

This meant conducting an in-depth exploration of customer expectations and preferences regarding:

- Minimum service levels and obligations, including reactions to a water bill increase
- The health of our waterways, experiences, and priority areas
- Cool, green spaces, including use and improvement principles, and
- Water supply resilience.

To achieve this, a multi-method approach was used, with qualitative and quantitative elements.

3.2 Methodology – Qualitative

As part of Sydney Water's journey to becoming a highly customer centric organisation, it seeks to engage customers on what is most important to them by using a range of approaches. These approaches include:

- Seeking a deeper engagement by involving customers in setting the priorities that matter to them the most.
- Choosing effective methods to provide all customers (including more difficult-to-reach customers) with an opportunity to have a say around how services are delivered. This included triangulating and testing responses against other information Sydney Water routinely collects as part of a wider customer research program.
- Providing clear explanations of different approaches Sydney Water could take (including price differences and any potential trade-offs) so that participants are able to offer meaningful and relevant feedback on the development of future plans.

Where possible, Sydney Water also aims to:

- Collaborate with customers (and/or customer representatives) to develop solutions that are in their long-term interests.
- Continually seek to improve engagement methods and explore innovative new methods of obtaining customer input.

Phase 4 qualitative research comprised 53 sessions, including in-person customer forums, standard focus groups (conducted online) and individual in-depth interviews. There was also an option of paired in-depth interviews for customers living with a disability that were conducted either online or over the phone.

Target recruitment screeners were designed in consultation with recruitment partners, Q&A and Cultural Partners, and approved by Sydney Water prior to their use. These are provided in Appendix A. The recruitment screeners were co-designed with recruitment partners and Sydney Water to ensure inclusivity of the customer base, incorporating both hard-to-reach and underrepresented audiences, and ensuring the communications methods recognised the ways in which customers prefer to engage in research. For example, and as noted in further detail below, the qualitative research incorporated tailored sessions for customers living with a disability, with the offer of a paired interview with a carer or support worker, and in-language groups with culturally and linguistically diverse (CALD) customers to ensure ease of participation. Furthermore, achieving good geographic representation is very important to Sydney Water and to ensure all regions of Greater Sydney are represented customer forums were held in five different regions of Greater Sydney. These locations included Southern Sydney and the Illawarra, Central Sydney, Northern Sydney, Western Sydney and Far Western Sydney and the Blue Mountains.

Discussion guides for all qualitative sessions were designed by Kantar Public and approved by Sydney Water prior to their use. They were also reviewed by Sydney Water's Customer and Community reference group with their feedback incorporated within the design. These are provided in Appendix B.

All research was conducted in accordance with ISO20252:2019 standards.[1]

Customer forums

A total of five, three-hour customer forums were facilitated in-person and were attended by residential customers. Again, these took place across Greater Sydney and included the Blue Mountains and Illawarra regions. Additional details on dates, locations, location coverage, and number of customers is provided in Table 1.

Each customer forum included a mix of age groups (all customers aged over 16 years old), genders, locations, homeowners, renters, financially vulnerable people, customers living with disability, people from culturally and linguistically diverse backgrounds, and First Nations.[2]

Appendix C includes a demographic breakdown of all forum participants, including detail on age, gender, location, and status as financially vulnerable, customers living with disability, culturally and linguistically diverse, and First Nations.

[1] Please note, the ISO20252:2019 standards are the international best practice standards established by SAI Global for service providers conducting market, opinion and social research, including insights and data analytics and used internationally to certify research suppliers who engage in legally compliant and independently audited market and social research methods.

[2] In this report, First Nations refers to people of Australia who associate as being a person of Aboriginal and/or Torres Strait Islander origin

In line with standard practice in this type of research, customers received an incentive of $180 as a 'thank you' for their participation.

Forums were conducted by a team of experienced moderators from Kantar Public, with the session plan following the structure below:

- Welcome and introductions (Kantar Public and Sydney Water)
- Review of customer priority outcomes and relative importance from Phase 3
- Plan to meet minimum service levels and obligations
- Waterway Health
- Cool, green spaces
- Water supply and resilience
- Close.

Table 2 Residential customer deliberate forums

Date and Time	Location	Location coverage	Number of participants
Tuesday 4 July 2023 5:30PM – 8:30PM	Wollongong	Southern Sydney (including the Illawarra)	n=91
Wednesday 5 July 2023 5:30PM – 8:30PM	Penrith	Far Western Sydney (including the Blue Mountains)	n=90
Thursday 6 July 2023 5:30PM – 8:30PM	Hornsby	Northern Sydney	n=88
Tuesday 11 July 2023 5:30PM – 8:30PM	Parramatta	Western Sydney	n=86
Thursday 13 July 2023 5:30PM – 8:30PM	Sydney CBD	Inner Sydney	n=94
			n=449

Sydney Water staff, the regulatory body, IPART, Sydney Water's Customer and Community Reference Group (CCRG), NSW Health, NSW Department of Planning and Environment, and the NSW Environmental Protection Authority were invited to observe each session in person.

Data collection, for the purposes of analysis included notetaking by moderators and workbooks completed by customers. The self-complete workbooks enabled customers to individually mark their initial choice and final choice for each of the topic areas presented. Customers were also encouraged to write down additional questions and provide feedback or comments, which was collected in addition to their contributions in discussions at each table.

Following the forums, Kantar Public moderators participated in a series of analysis sessions to identify and analyse the key themes that emerged. This process included individual reflection, followed by extensive group discussions and thematic brainstorming.

Customer feedback was provided via feedback forms at the end of each forum, as part of their completed workbook. This feedback is being used to improve engagement practices for the

remaining research phases. The feedback form is provided in Appendix B – 1.2.2. A selection of aggregated feedback is provided below along with direct quotes from customers:

Figure 1 Customer feedback, on a five-point scale (combined results from five forums)

Mean score out of five – using an agreement scale. Base: Deliberative forum participants who completed feedback sheet, note that some respondents didn't fill in the sheet or didn't respond to all questions (n=390).

> "It was great to be involved. I am hopeful our impact is heard and implemented."
>
> **Residential customer** | Wollongong Workshop

> "Great forum, good cross [section] of people. I enjoyed listening to other point of views."
>
> **Residential customer |** Hornsby Workshop

> "I really enjoyed learning new things and the activities that were done were fun, interesting and engaging. Absolutely loved the way this workshop was structured."
>
> **Residential customer** | Parramatta Workshop

In-depth interviews and focus groups

In addition to the customer forums, online qualitative research was conducted with key audiences:

- n=6, 90-minute focus groups with culturally and linguistically diverse (CALD) customers
- n=2, 90-minute focus groups with First Nations customers
- n=10, 60-minute interviews with customers living with disability, with the option of a paired interview (with carer or support worker – see glossary)

- n=6, 90-minute focus groups with owners of small and/or medium enterprises (SMEs) with medium and high criticality of water to business
- n=24, 45–60-minute interviews with stakeholders; Business/ Service Critical High Business customers, local and state government representatives ('Government Stakeholders'), Major Developers and Value Makers[3].

In line with standard practice, CALD and First Nations customers and customers living with a disability received an incentive of $80 as a 'thank you' for their participation. SME customers received an incentive of $140, and Value Makers received an incentive of $120. These incentives are aligned to industry standards and consider factors such as time commitment to the research, requirements for in-person vs. virtual participation, and difficulty in recruiting specialised audiences. The final amounts were determined in consultation with our fieldwork partners, who liaise with participants directly.

Service Critical High Business Customers, local and state government representatives, and Major Developers were recruited from contact lists provided by Sydney Water and were not provided an incentive for their participation.

Customers living with a disability self-reported their diagnosis and/or health concern in recruitment. Of those customers who participated in the interviews, they reported living with mental health conditions (n=4), sensory disability (e.g., vision or hearing impairment) (n=1), physical disability (n=2), mobility concerns (n=3), and breast cancer (n=1).

Sessions with owners/ managers of SMEs, customers living with disability, stakeholders and business customers, local and state government representatives, Major Developers and Value Makers were conducted by a team of experienced moderators from Kantar Public.

Focus Groups held with CALD and First Nations audiences were recruited and moderated by our specialist research partner, Cultural Partners, via panel and community networks. Groups with CALD audiences were conducted in-language, specifically in Korean, Vietnamese, Mandarin, Cantonese, Greek, and Arabic. These moderators also contributed to the analysis and interpretation of findings and reporting of results. These cultural groups were selected as they are the top six languages spoken (other than English) in the Greater Sydney region, by population, as per the ABS 2021 Census.

Within the CALD groups, a total of 30 customers attended. The majority of the Arabic, Greek, Mandarin, and Vietnamese customers were born in Australia to migrant parents, while all Cantonese and Korean customers were migrants born overseas.

Within the First Nations groups, a total of 10 customers attended.

Appendix C includes a demographic breakdown of all additional qualitative participants. Please note, this demographic breakdown excludes Service Critical High Business Customers, local and

[3] A value maker is a business/person interacting with Sydney Water regarding products and services to create valuable things for residents, businesses or developers – see glossary.

state government representatives, Major Developers, Value Makers, and SMEs as these participants were not recruited based on demographic characteristics.

This additional qualitative research was conducted using telecommunications platforms Microsoft Teams and Zoom, and telephone.

All sessions were conducted between Thursday 27 July and Thursday 31 August 2023.

3.3 Methodology – quantitative

Discrete choice Experiment (DCE)

Following the qualitative research, a 20-minute online survey of n=4,003 customers representative of the general population of Greater Sydney, including the Blue Mountains and Illawarra regions. A DCE survey adds value by collecting quantitative data to help Sydney Water with setting prices that are fair and efficient. It does this by allowing Sydney Water to understand and determine customer preferences for different water service investment options.

It helps Sydney Water to identify the relative feature preferences of customers for different water service option and the willingness to pay for the difference options.

Key details of the DCE survey include:

- The survey was conducted from Thursday 24 August – 19 September 2023.
- Total sample size was 4,474 and the cleaned sample used for modelling was 4,003 respondents.
- Two separate models were estimated: One for homeowners (n=2,884; who pay a quarterly water bill), and one for renters (n=1,119; who see a commensurate increase in monthly rent to account for increases in their water services).
- The survey instrument was designed by CaPPRe in collaboration with Kantar Public and approved by Sydney Water prior to fieldwork. The instrument is provided in Appendix E.
- The survey completion time was approximately 20 minutes.
- Broad non-interlocking quotas were set for demographic variables, as noted in Table 2.
- Raw data was not weighted and obtained at the level of individual respondents. However, weighting has been applied to WTP values in the dashboard (post-model estimation) to improve interpretability of results by age, income, location, and self-reported financial hardship. All data was post-weighted to align with ABS 2021 data (based on age, gender, location, language other than English and whether respondents identified as Aboriginal

and/or Torres Strait Islander (First Nations) Australian)4. Weighting was conducted by rim weighting technique. The final sample composition is shown in Table 2.

- The data has a total sample margin of error (at the 95% confidence level) of ±1.54%.

A much more detailed description of The DCE Methodology can be found in the DCE dedicated section of this report. All research was conducted in accordance with ISO20252:2019 standards.

Table 3 Quota targets and sample breakdown

Variable	Target (%)	Target (n)	Achieved (%)	Achieved (n)	Quota
Total	100%	4,500	89%	4,003	Hard
Gender					
Male	50%	2,250	46%	1,841	Soft
Female	50%	2,250	54%	2,152	Soft
Other / prefer not to say	*As falls*	*As falls*	0%	10	Soft
Age					
18-29	12.5%	563	19.5%	784	Soft
30-39	20%	900	24%	961	Soft
40-49	20%	900	17%	680	Soft
50-59	20%	900	13.7%	550	Soft
60-69	15%	675	15%	599	Soft
70+	12.5%	562	10.8%	429	Soft
Location					
Northern Sydney	20%	900	16%	658	Soft
Inner Sydney	25%	1,125	32%	1,275	Soft
Southern Sydney and Illawarra	20%	900	11%	441	Soft
Far Western Sydney and Blue Mountains	15%	675	15%	602	Soft
Western Sydney	20%	900	26%	1,027	Soft

[4] Please note, references to language other than English and Aboriginal and/or Torres Strait Islander reflect that of the Australian Bureau of Statistics, which was used in determining and managing quotas. All other mentions of these demographic groups in this report are referred to as culturally and linguistically diverse (CALD) and First Nations, respectively.

Cultural and language diversity					
Language other than English	35%	1,575	26%	1,055	Soft
Primarily English speaking	62%	2,790	74%	2,948	Soft
Aboriginal and/or Torres Strait Islander	3%	135	2.4%	95	Soft
Financial hardship					
Experiencing financial hardship	20%	900	17%	677	Soft
Other					
Customers living with a disability	15%	675	13%	518	Soft

3.4 Reporting notes

- Any mention of Greater Sydney includes the Blue Mountains and Illawarra regions.
- Direct quotes from the qualitative research have been included to reflect findings in the report where relevant, with quote source provided.
- In reporting the qualitative research findings, unless otherwise stated the findings are consistent between subgroups reported in that chapter and the general population.
- If required, significance testing is carried out at the 95% confidence level. This means that there is a less than 5% probability that a difference occurred due to random chance alone. Where sample sizes allow (minimum n =30), significance testing is undertaken between the total sample and subgroups such as male/female or within location. Subgroup analysis of key demographics, including gender, age, and location, have been reported in text, only where significant. Additional analysis of key demographic subgroups is attached in Appendix F data tables.

In interpreting quantitative data throughout the report, readers should note the following:

- Some percentages do not add up to 100%. This may be due to rounding (percentages are represented to the nearest integer), the exclusion of answers such as “don’t know” or “not applicable” or multiple response questions.
- The base size below each figure describes the respondents who were eligible to answer the question and indicates the actual number (n) who responded to the question (unweighted). Where the base is a subset of the total response, due to unique questionnaire ‘pathways’, the meaning of the base is explained.
- In order to facilitate analysis, all charts and tables have been presented using percentages (as opposed to number of mentions).

Table 4. Number of customers engaged by demographic.

Engagement	Number of engagements (n=54)	Number of participants (n=4,551)	CALD (n=1,164)	First Nations (n=113)	Financial Hardships (n=827)	SME (n=24)
Customer Forums	5	449	70	8	130	NA
Online Survey	1	4,003	1,055	95	677	NA
Focus Groups and In-Depth Interviews	48	99	39	10	20	24

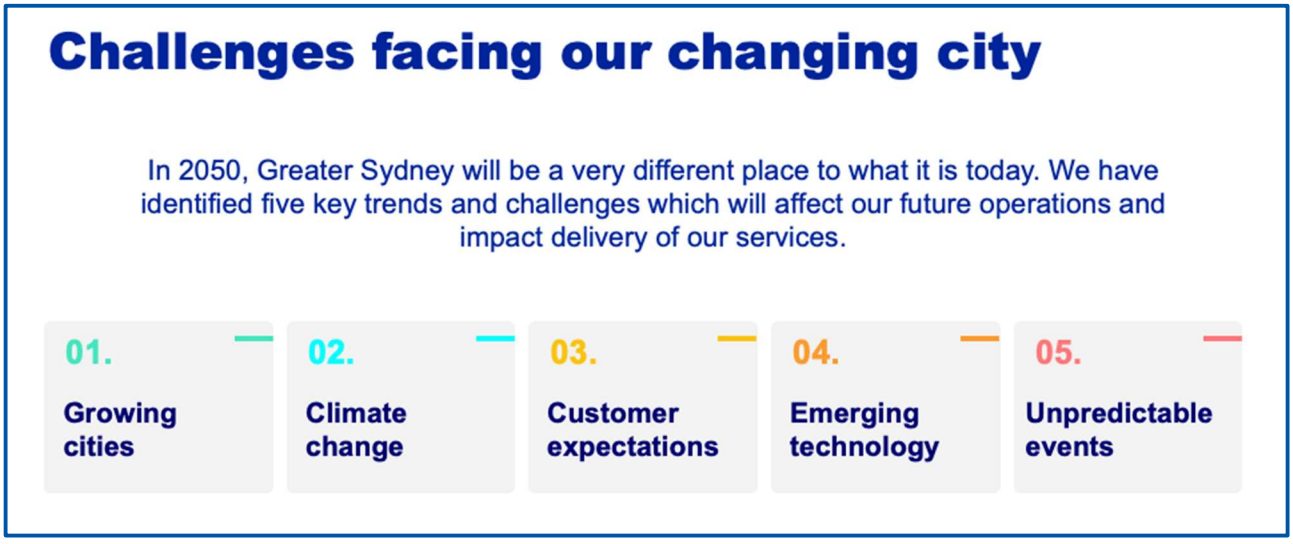
4 What we heard: customer led themes shaping Sydney Water's Plan to meet minimum service levels and obligation

4.1 Context

This section outlines key contextual factors that influenced or underpinned the choices customers made in relation to plans to meet minimum service levels and obligations.

Ahead of the discussion about the water bill increase, customers were shown a 10-minute presentation to provide background information to help with the discussion. The presentation referenced learnings from prior phases on what customers want to see Sydney Water focus on, basic statistics about Sydney Water, and some of the future challenges facing the city. This information centred around how these challenges might impact Greater Sydney, its residents and the water and wastewater networks operated by Sydney Water, including the different ways they would impact the delivery of Sydney Water's services.

Figure 2 Slide content from customer forums – Challenges facing our changing city.

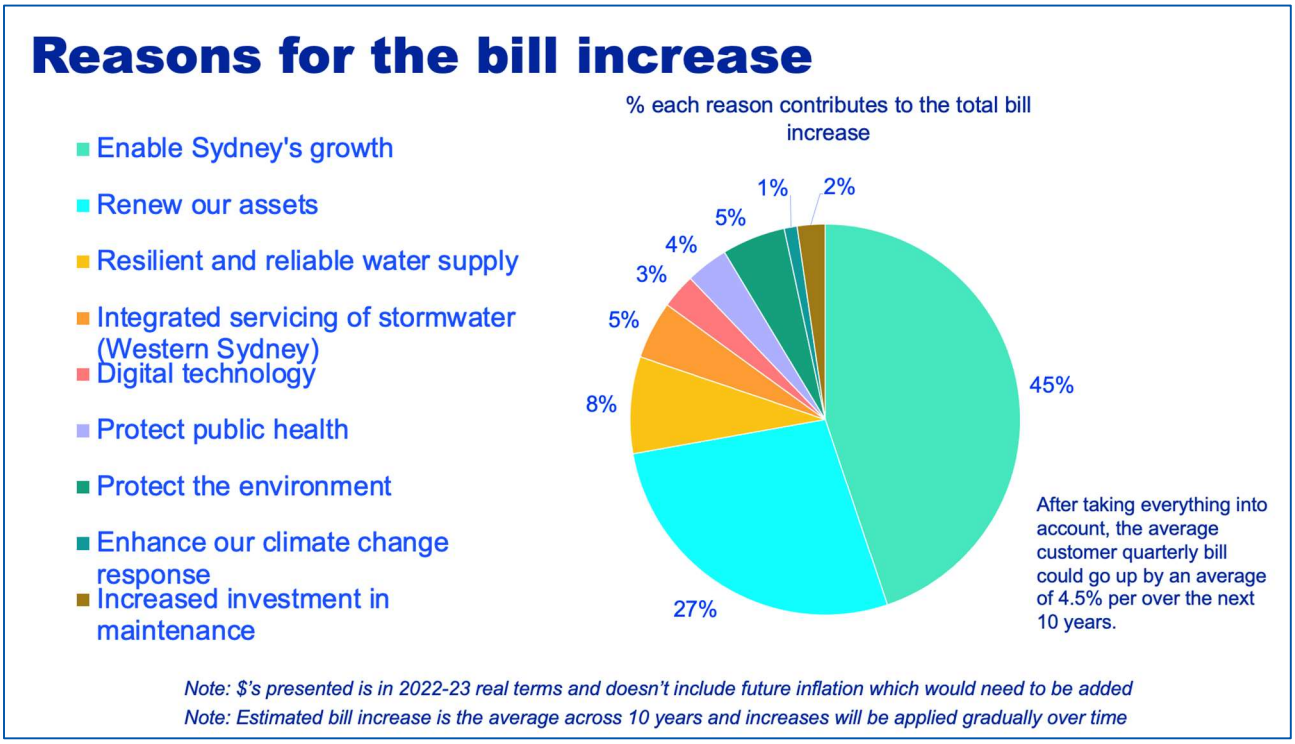


4.2 Increased water bills

Sydney Water expects that it in order for it to meets its future obligations to the people of Greater Sydney it will need to raise water and wastewater bills notably over the next 10 years. During Our Water, Our Voice, customers were told that an increase of 4.5% per year, over the next 10 years

was a possible scenario. They were also shown a pie chart which mapped out the proportion of the bill increase that each area of investment would contribute to in such a scenario. Specifically, customers were shown a pie chart outlining the areas that would receive additional investment due to the bill increases. Overall, a bill increase was not a surprise for most customers and was largely met with a sense of inevitability.

Figure 3 Slide content from customer forums – Reasons for the bill increase.



Many who were more accepting of the bill increase compared it to other inflationary increases they are currently faced with. Cost of living pressures such as power bills, rent, petrol and interest rates that have all increased in recent times, were used as a point of reference, with Sydney Water's increase feeling comparatively realistic.

That being said, the size and magnitude of the bill increase was alarming to some which led to stronger unfavourable reactions to the amount of the increase [4.5% per year over the next 10 years above inflation], and some wondered what would happen if they were unable to afford the new pricing. Others expressed concern as to whether the funds would be used "fairly".

Similar to Phase 3 findings, there were those who suggested the government and developers (who are seen to be encouraging the growth that is driving this increase) should bear more of the costs associated with the region's growth. This sentiment was mostly directed toward developers who are seen to profit from Greater Sydney's growth.

While acknowledging that a bill increase is inevitable, many wanted more specific detail about what would happen to water bills in the future beyond the 10 years discussed. They said this information could help them feel better about the impending increase if there was reassurance that bills would not continue to increase at this level once key investments are made.

There were a few who acknowledged the increase may be appropriate given the scope of works required to sustain Greater Sydney. It was also not surprising that reactions to bill increases varied by location and personal financial circumstances, with the more affluent customers often being more accepting than others.

> "What happens at the end of 10 years? Does it [bill increases] stop?"
>
> **Residential customer** | Customer Forum

> "How much has it [bills] increased in the past? Is this normal?"
>
> **Residential customer** | Customer Forum

> "Where do the Sydney Water profits go?"
>
> **Residential customer** | Customer Forum

> "How much are the developers paying?"
>
> **Residential customer** | Customer Forum

> "How come wages don't go up with all these increases?"
>
> **Residential customer** | Customer Forum

4.3 The source of Sydney Water's funding

In Phase 3, we learned that customers do not fully understand how Sydney Water is funded: Many were surprised to learn that its products and services are fully funded by customer water bills and that the full cost of delivering Sydney Water's services must be recovered through these bills.

Many had assumed that more funding came from Government sources, and this was partly due to the status of Water and Wastewater's as an essential service. There were customers who believed that water bills should not have to pay for certain things such as building and delivering new infrastructure projects [e.g., in response to population growth].

Upon learning that Sydney Water is primarily funded through customer bills, these customers were more accepting of a bill increase (than in Phase 3) as additional funds would be used to benefit customers rather than go towards profit for private investors.

> "If they [Sydney Water] were privatised, I'd be more outraged about the [bill] increase."
>
> **Residential customer** | Customer Forum

4.4 Amounts allocated for each investment.

With a few exceptions, customers were largely accepting of the amounts allocated to each area of investment (as shown in the pie chart above).

Most customers recognise that they are not experts in this area and were willing to accept Sydney Water's estimates around what is needed. There was some surprise that enabling growth [45%] and renewing assets [27%] made up such a large proportion of the bill increase, though most customers were resigned to the fact that such costs are unavoidable if the growth of the city is to be managed sustainably.

Some customers questioned whether the high proportion to 'enable Sydney's growth' (at 45%) was because Sydney Water had underinvested in the past which, if true, they would find disappointing. Again, this led them to question why developers and those who benefit from growth do not contribute more to these costs. In response to this feedback, Developers said that any additional costs would be passed on to end customers and may restrain development growth and exacerbate housing affordability issues.

The most common concern with how revenue is allocated related to protecting the environment and climate change, where customers felt that the relative share of the overall increase (5% and 1% respectively) seemed low. It is worth noting that the framing of the conversation is important. Many customers initially based their assessment on the % of total spend over 10 years, rather than absolute dollar values. When told that 1% is likely to represents hundreds of millions of dollars in investment, customers were less concerned about the smaller proportions allocated to specific investment areas.

There was also some initial confusion regarding spending digital technology [3%]. Customers had many questions about what this is and how the spending would be allocated. When it was explained that this might be used for rolling out smart meters to allow customers to track their water usage in real time, customers often agreed that these were worthwhile initiatives given that they currently struggle to keep tabs on their water usage. That being said, (as discussed later in this report) the DCE shows little appetite for investing in smart meters before 2035.

With regards to other applications such as enhancing cybersecurity, the challenges and vulnerabilities facing Sydney Water were not well understood. When the risks were explained (potentially running out of water in 2months if Warragamba Dam or the prospect reservoir are targeted by a cyber-attack) customers seemed more open to additional investment in this area.

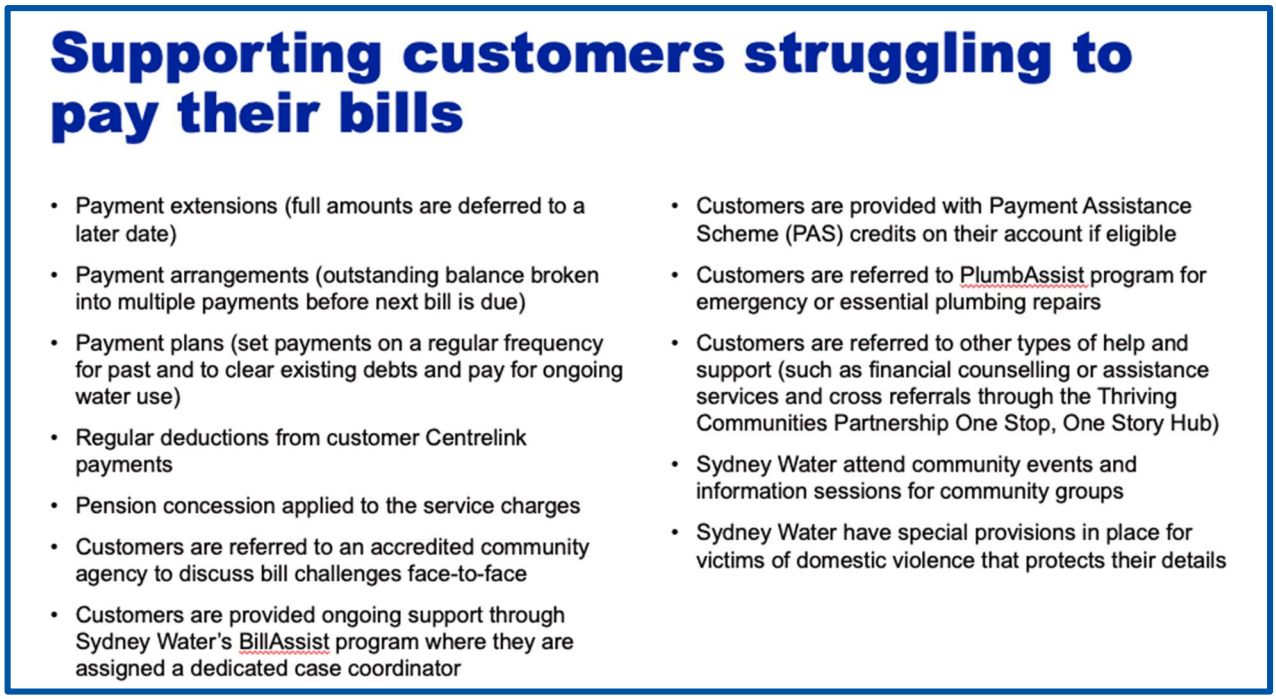
> "It looks like asset maintenance and repairs have gotten out of Sydney's control Why is Sydney Water playing catch-up?"
>
> **Residential customer |** Customer Forum

> "If developers are making all this profit, why aren't they contributing more towards this?"
>
> **Residential customer |** Customer Forum

4.5 Support for Financially Vulnerable Customers

Customers were pleased to learn that there are initiatives in place for customers who are financially vulnerable, although many also felt more could be done to promote the fact that such options are available if needed.

Figure 4 Slide content from customer forums – Supporting customers struggling to paying their bills



As living without water is not an option, many suggested that it is important for customers to know that Sydney Water offers such support for those in need. Most customers were impressed by the extensiveness of the list, despite being unaware that these options were available.

The few customers in this forum who were aware that Sydney Water has these options noted that the process is not customer-friendly in that it is difficult to find the necessary information and/or understand the application process.

Despite the positive feelings generated through learning that Sydney Water helps financially vulnerable customers, it also raised the question for many as to what proportion of customers actually receive this support given that it is not widely publicised and what the eligibility criteria was for accessing such support. These questions extended to calls for more transparency around this.

Some customers raised questions about whether Sydney Water can or would ever actually turn off a customer's water for non-payment. They were concerned about this given that it is an essential service.

> "I wasn't aware of this [Financial support]. They need to be more proactive in letting people know that support is available."
>
> **Residential customer** | Customer Forum

> "What can they really do if some isn't able to pay? It would be inhumane to turn off water."
>
> **Residential customer** | Customer Forum

4.6 Key sub-groups

The reactions to Sydney Water's proposed bill increase to meet minimum service levels and obligations amongst key sub-groups are summarised below, along with any differences, when compared to the findings in the residential customer workshops.

Aboriginal and Torres Strait Islanders [First Nations] Customers

Water is regarded as not only being an important resource but one which is essential to life. The cultural significance of water and waterways to First Nations customers was of particular importance.

The overwhelming majority expressed concern about bill increases due to existing high levels of pressure on household incomes and general cost of living increases. Similar to other residential customers, there was a general understanding of the need for repairs and equipment upgrades, though this did not always mitigate the strong feelings of concern about cost implications and budgetary stress.

For some, the cost impacts were viewed as severe, some already rely on support in the form of electricity vouchers and worried about this being extended to water. Financial support and subsidies from government were repeatedly raised as potential solutions to bill shock given the challenging financial times.

There was a significant level of surprise and some anger elicited by the 45% growth component. Even amongst those who were generally more understanding of the need for a price increase. They had assumed the that repairs, and maintenance of existing supply would have been the priority. Almost all queried why existing customers were expected to subsidise the services of new customers. There was genuine concern about whether this was equitable given current financial pressures.

Some were aware that assistance is offered for financial hardship, though there was surprise to learn about the protection afforded to clients experiencing Domestic Violence as this was both new to them and considered very important. Again, First Nations customers would appreciate more information and communication about the support available to those struggling to pay their bills.

> "Water is very significant culturally to us as Aboriginal people, as it's part of the land on which we live, and work and our ancestors have lived."

First Nations customer | Focus group

> "Everything is going up in prices and it's hard to survive sometimes. No one wants to be charged more, but it's the way things are now. I just expect it."

First Nations customer | Focus group

> "I didn't expect to see that they can protect clients in DV situations so that was something I didn't expect to be that they could or would do."

First Nations customer | Focus group

Culturally and Linguistically Diverse [CALD] Customers

Like all other residential customers [i.e., non-business, non-professional], the proposed water bill increase was not a surprise to CALD customers though the 4.5% - 5.5% per year for 10 years above inflation received a negative reaction. There was also a desire for full transparency about why bills are increasing and what the revenue is being spent on.

Many CALD customers were unhappy that a big proportion of their bill increase that would be used to support growth of Greater Sydney – as they believe this is what their taxes were for and that if the government wants to expand Sydney, it should use taxes to fund it. Some also felt that it should be the responsibility of people moving into those areas to pay for the infrastructure.

> "I feel shocked and disappointed [at bill increase]. It's overwhelming to think that this is going to be the case on top of everything else we're going through right now, like with interest rates and all that sort of stuff.

Cantonese-speaking customer | Focus group

> "If we already contribute to taxes, why is it our responsibility to pay extra for new growth areas?"

Vietnamese-speaking customer | Focus group

Business Customers

Similar to the general population, business customers felt resigned to a bill increase and were not surprised. They understand the reasons for the bill increase and are more accepting of it than the general population. They mentioned that given current cost-of-living pressures across the economy that it makes sense for costs related to Sydney Water to increase as well.

Nevertheless, a common concern was how and whether they would be able to pass these new costs on to customers. Many customers have pre-existing contracts that span several years, meaning that the amount customers pay is already set. Business can't rewrite existing contracts to reflect the new costs of the bill increase, so they would have to bear it.

Some wanted more transparency regarding the details of the 45% allocated to growth: They would like to understand how it is split and, in particular, what Sydney Water is paying for and what are developers paying for? Some believed that growth should be paid for by developers and the government, while acknowledging that some or all of these costs should also be paid for in taxes. There was a general belief amongst these customers that growth should be paid for by new customers but not existing customers.

Business customers wonder if Sydney Water can offer better financial hardship assistance to businesses. For example, there is no government assistance for non-industrial businesses to offset the costs of water treatment plants or recycled water, raising the question as to whether Sydney Water can assist businesses with the use of recycled water?

> "Probably not a great impact in the first couple of years but I guess it [bill increases] is on going for the next 10 years. That's like an almost 100% increase over the next 10 years which is substantial for our business."

Service Critical High Business Customer | In-depth interview.

> "It's gonna be hard to pass on to our customers. That's the problem we have. Our customers are usually signed on for 3 years. And our contracts are linked to CPI so we would virtually have to wear that. That's directly affecting our bottom line and our ability to invest in other things, new technology."

Service Critical High Business Customer | In-depth interview.

> "Water is not one of the most significant no-cost drivers for our business. It probably would drive us to look at things we could do to minimise that offset by being more efficient in the use of water or reuse of water."

Service Critical High Business Customer | In-depth interview.

> "They could look for opportunities to use recycled water, to help make the opportunity for businesses to be more energy efficient to offset those increases. They could probably be more proactive in that area."

Service Critical High Business Customer | In-depth interview.

Value Makers

Like other customers, Value Makers were not surprised about the water bill increase. Much discussion focused on how 45% of the budget is allocated to growth, with the primary sentiment being that this is more than it should be and that developers should pay for it, not customers. Some value makers believe that the cost of any new infrastructure should be borne by those who live there, and not all customers.

For these customers, maintenance and renewal of existing infrastructure was a major concern that should be elevated as a priority. These customers discussed the challenge of maintaining exiting pipe networks and felt Sydney Water had a large task ahead of them if they are going to keep the city in its current state let alone support the Growth of the city. Ultimately, they felt a greater proportion of funding should be allocated towards renewing assets and supporting the current network. Finally, like residential customers, they also believed that allocating 1% towards tackling climate change was insufficient and that this should be higher.

With regards to bill impact, there was agreement that broader education is needed for everyone on "how to use water better", thereby lessening all water bills. A few value makers wondered if water tanks should be mandatory on all houses to help people use less water.

> ""Look…as long as there are figures to back up why it [bill increase] is needed, it sounds reasonable...I want to understand where the money is going to, but it makes sense as costs increase."

Value Maker | In-depth interview

> “I would have thought there'd be probably more with renewing the assets, 27%, because that's pretty ongoing. I've seen all the pipes, especially out West, they've got leaks in them all the time."

Value Maker | In-depth interview

> “I’m surprised about 45% for growth. I just think the ageing assets and the old areas would need more money. Also, usually the developer pays for water when it comes to new growth areas. And 1% for climate change response, this seems like a very small amount as Sydney Water is a big consumer of power.... probably the largest power consumer."

Value Maker | In-depth interview

> ““But I would want the cost for new infrastructure to be passed on to those people going to live there, rather than everyone.”

Value Maker | In-depth interview

Customers living with a disability.

Reactions from customers living with a disability were largely aligned with residential customers.

One way in which some of these customers differ is they feel they use more water because their disability slows down how quickly they can shower. They felt they needed special exemptions or concessions as a result of this.

They also believe it is important for the public to be educated on how to use less water in order to decrease the cost of their bill. There was some discussion around whether individuals are able to reduce their water bills by reducing their usage. These concerns were primarily held by those living in rented units where the water bill is pooled and doesn’t reflect individual use.

These customers tended to have additional concerns about the overall affordability of their water bills. This often related to the fact customers living with disability typically have tighter personal budgets or less discretionary income. They did however appreciate that financial support is available if needed. Some also suggested that the option to pay a fixed amount every month was desirable as a way to help manage finances.

> “I like the idea of being able to budget and set fixed payment for fixed frequencies, so you don’t have to worry about bill?”

Customer living with a disability | In-depth interview.

> “I don’t really think about water so much, we just assume we have it and can use it. It’s not front of mind that it’s scarce… People will probably not like it [bill increase], but if it’s communicated well, it is explainable and understandable.”

Customer living with a disability | In-depth interview.

> “We waste so much water, we could save money. Redirect stormwater instead of letting it go out to sea."

Customer living with a disability | In-depth interview.

Councils and Government

Council and government participants were in the unique position of responding as individuals as well as on behalf of their constituents. In this regard, many felt they could personally manage with the bill increase, but some were concerned about its effect on the constituents they represent. These stakeholders often had more technical knowledge about water and wastewater than the average residential customer. Their rolls often directly dealt with sewage overflows and bursting pipes and as a result there was more acceptance that additional investment and a bill increase was probably required to deliver needed improvements. All agreed that Sydney Water must be transparent about the details of any bill increase to ensure that its customers have a clear understanding of why it is needed.

Similar to the responses from residential customers and other sub-groups, questions were raised about allocating 45% of any rise in customer bills to the growth of the city. Questions included:

- Why aren't developers shouldering more of this burden?
- Why is Western Sydney wearing this?
- Why should existing communities pay for this and not new ones?

Location mattered to this group of stakeholders and many responses were based on what was happening or what is relevant to their specific area. As a result, there were many comments and concerns raised regarding sewer overflows, drainage and network repairs, water quality improvement, ongoing leaks and concrete channels. Again, these tended to relate to specific areas and circumstance rather than all of Greater Sydney.

They hoped that Sydney Water would alert council and government stakeholders ahead delivering any notice about bill increases so they can prepare their response to align with it. Council and government anticipate that they will have to field calls from their constituents about any bill increase and ask that Sydney Water make it clear that concerns be directed to Sydney Water and not council and government.

Many government stakeholders feel that Sydney Water does not make best use of their relationships with council and governments. These stakeholders would like to work more closely with Sydney Water and provide advice on projects, investments, and communications strategies. They would also like more opportunity to collaborate given they have a good amount of local knowledge and expertise that Sydney Water may not have.

> "From an Australian perspective, the bill increase sounds horrible, but from a global perspective, people pay a lot more than we pay currently for water, and I think that's probably the key differentiator."

State government representative | In-depth interview.

> "For me, it's about workers. I think it would be very important that before it's disclosed publicly or communicated publicly that there would be some correspondence or communication with Council."

Local government representative | In-depth interview

> “I still think that the 45% on the Sydney's growth, more of the emphasis needs to be put on the developers or the residents within that area of Sydney, so to a certain extent it might be that the percentage is too high."

Local government representative | In-depth interview

> “There’s a need for better communication. When we talk about the percentages, there would be some big questions coming out of that… you might have to explain what it means in terms of environment or maintenance and what would that look like."

Local government representative | In-depth interview

5 What we heard: Waterway Health

5.1 Context

During Phase 1, customers said that maintaining the health of waterways is crucial to their livelihood, that they valued waterways and protecting natural places, and don't want to see them polluted. Building on this in Phase 4, customers were provided additional information about the current state of Greater Sydney's waterways. They were then asked to discuss how Sydney Water should prioritise investments in the maintenance and improvement of waterways and waterway types.

Figure 5 Slide content from customer forums – River condition index

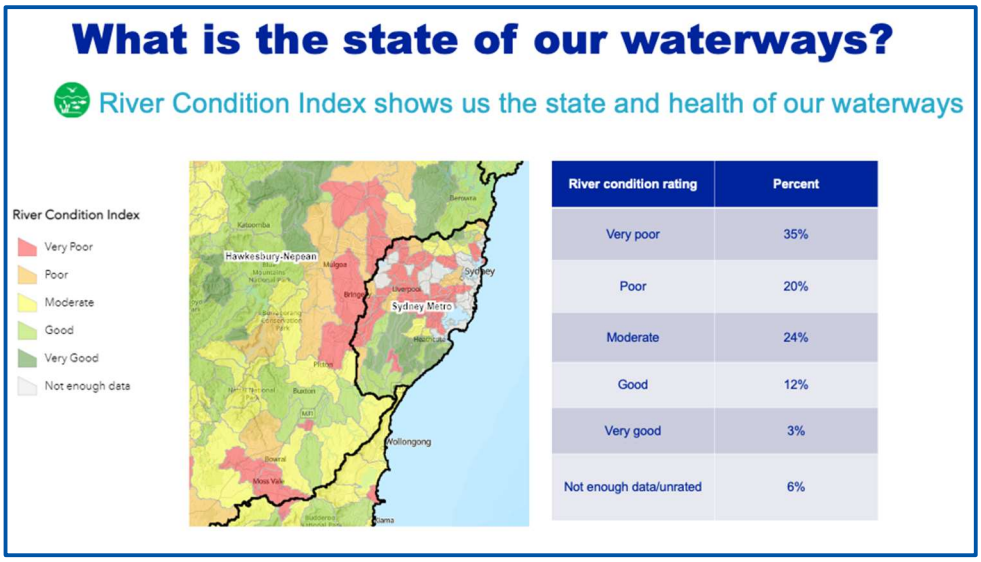
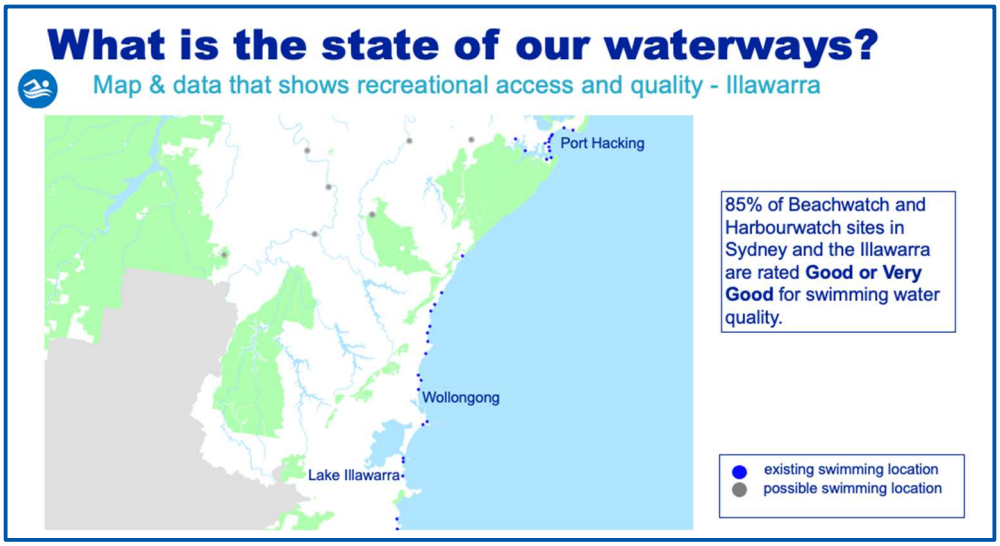


Figure 6 Slide content from customer forums – State of our Waterways Sydney

Figure 7 Slide content from customer forums – State of our Waterways Illawarra



Most customers place considerable value on maintaining the health of Greater Sydney's waterways. They agree that these waterways are elemental to life in the region and this view is not only held by customers who actively use waterways for activities like water sports, boating and fishing rather it is commonly held by most customers including those who don't use waterways or just passively enjoy their existence.

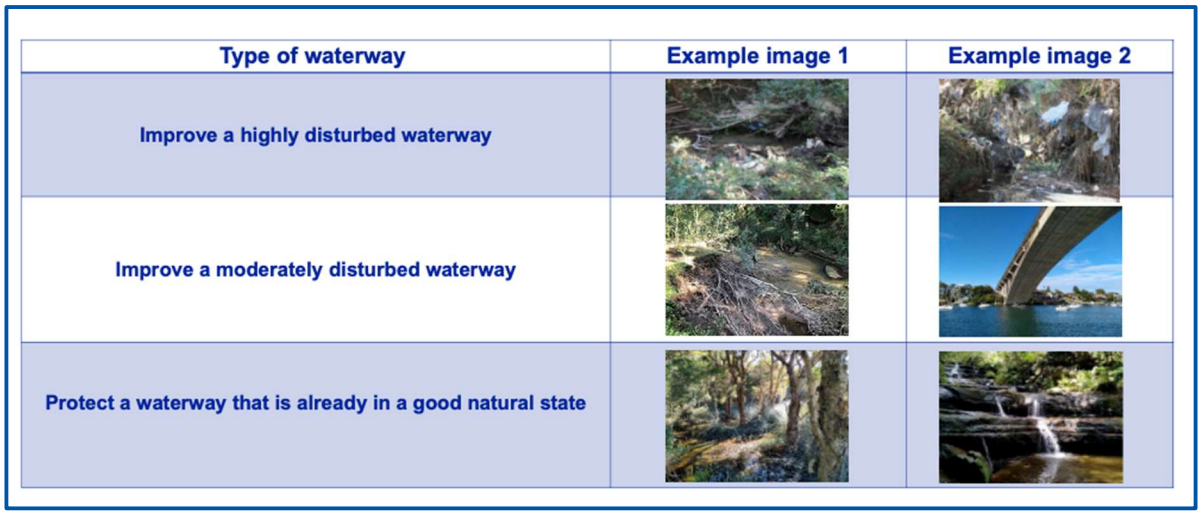
Many were positive about the current state of the region's beaches. They also wanted them to be kept healthy and not deteriorate, they felt that avoiding any kind of deterioration is worth investing in. In contrast, customers were less positive about the state of the region's rivers and creeks particularly after being shown the River Condition Index. Some mentioned examples of highly polluted rivers and creeks they had personally encountered and described the negative impacts of this degradation. Some examples included Cooks River and areas around Parramatta and Liverpool where sewerage overflows, litter and other pollution led to highly degraded waterways. Customers also spoke very positively about waterways that are currently in a good condition, they value these greatly and want to see them remain in that state. These include places such as the swimming area in Lake Parramatta.

Overall, customers value the health of Greater Sydney's waterways, recognising the importance for life in the region. They want to see waterways, including beaches reivers and creeks maintained in their current state or improved. These highlights the need for Sydney Water to prioritise investments in waterway maintenance and improvement to preserve the region's natural resources and enhance its liveability. As discussed later in the DCE section of this report, customers are willing to pay more on their quarterly bills to see an increase in the number of healthy waterways above current levels. Healthy Waterways also had the second highest attribute importance of all the attributes included in the DCE.

5.2 Prioritising the maintenance of Greater Sydney's Waterway Health

Prior to the table discussions, customers completed a worksheet exercise where they ranked the value of waterway types that Sydney Water could prioritise. Their responses were then used as a basis for the discussion. Ideally, customers would like Sydney Water to allocate resources towards improving the health of all types of waterways. They also understand that the cost of doing so is substantial, and resources are limited, meaning that focusing on all waterway types may be impractical and that some waterways need to be prioritised over others.

Figure 8 Slide content from customer forums – Types of Waterways



Most customers felt that the first priority should be to improve highly disturbed waterways, fearing they would continue to deteriorate if left undone. These customers also noted that the region's waterways are interconnected and that leaving highly disturbed waterways in this state would have downstream impacts that could lead to other waterways being contaminated (particularly during wet weather events).

The second priority was addressing moderately disturbed waterways. Often the rationale behind choosing moderately disturbed waterways was related to them being easier and less expensive to address than the waterways in the worst shape.

The third ranked priority was addressing waterways that are already in a good natural state. Customers who chose this waterway type did so as they wanted to ensure that Greater Sydney always has access to at least some clean, healthy waterways and that standards do not go backwards. They also assumed that this would be the most cost-effective to maintain. Customers who ranked this highly often had a stronger sense of loss aversion than others. They tended to argue that only a small proportion of Greater Sydney's freshwater sights are in a healthy natural state and these precious few needed to be protected.

> "We need to improve the worst waterways as this will lead to improving the moderate. Waterways are important as they all run together."

Residential customer | Customer Forum, Wollongong

> "A highly disturbed waterway should be prioritised because it improves the overall natural ecosystem and has follow up effects downstream and in the general area/catchment."

Residential customer | Customer Forum, CBD

> "Minimal investment on moderately affected I think would give greatest return for greater impact. Highly disturbed would involve higher cost to bring it all the way to acceptable. Those in good state should be self-sustaining."

Residential customer | Customer Forum, CBD

> "Cost, it should come at a lower cost to maintain something in good working order over correcting something broken."

Residential customer | Customer Forum, Hornsby

> "Protecting waterways that are already in a good state is easier to maintain for future use."

Residential customer | Customer Forum, Penrith

5.3 Prioritising values to be enhanced.

Customers were also asked to prioritise a list of waterway values, from the most important for Sydney Water to focus on to the least important. These included:

- Focusing on places for nature where plants and animals can thrive.
- Enhancing access to recreational opportunities for people.
- Improving parks and waterways so they are more natural.

Their responses were used as a base for discussion about why the different values are important relative to others. Like with the previous discussion, most customers pointed out that all values were important. That being said, when framed in a world where resources are finite and things need to be prioritised, customers are able to rank them in order of importance. When doing this, they often pointed out that these values are not independent of each other and are all interrelated, meaning if one was to be improved, others would indirectly benefit as a consequence. This suggested that the preferred approach is for Sydney Water to take a wholistic approach and look for ways to elevate all values when making decisions.

Figure 9 Slide content from customer forums – Waterway Values

Values that could be enhanced	Example image 1	Example image 2
A place for nature – plants and animals to thrive		
Enhance access and recreational opportunities for people		
Improve parks and waterways so they are more natural		

When asked to rank the importance of these values, most customers agreed that creating a place for plants and animals to thrive is the most important value. The general sentiment was that flora, fauna, and people must coexist, and doing so has a positive effect on communities. There was also the view that any efforts taken to ensure flora and fauna thrive would have substantial positive spinoffs and this in turn would lead to the other values being enhanced as a result of these efforts.

Enhancing access and recreational opportunities for people ranked second. Customers often described this value as a public health issue. This was not only from the perspective avoiding people getting sick, but also because of the positive impact recreational opportunities have on the communities' physical and mental wellbeing.

Conversely, some expressed concern that certain types of recreation can spoil waterways. For example, boating, fishing and jet skiing and the rubbish left behind after picnics can negatively impact waterways. Customers wanted this to be considered by Sydney Water if investing in opportunities for recreation. For example, are adequate contingencies in place to avoid negative flow on effects from any investment in this area.

Improving parks and waterways so they are more natural was ranked third, while this was still highly valued by customers, it was seen as an option that may be taken care of after the first two values are addressed or in combination with efforts to create places for flora and fauna to thrive.

> "Fauna and flora are far more important over recreational waterway usage; nature uses waterways every single day whereas recreational use is not for every day."

Residential customer | Customer Forum, Penrith

> "If the plants and animals are thriving then the ecosystem will be healthy, and people can enjoy the space too & the water health will be improved. Bringing urban parks into a more natural state will enhance the experience of people being in them."

Residential customer | Customer Forum, CBD

> "Better ecosystems mean better waterways. Improving urban parks and waterways will have major impact on water quality and biodiversity."

Residential customer | Customer Forum, Wollongong

> "I chose enhancing access as most important as too many people spend time indoors and so people would benefit in enjoying a healthy outdoors lifestyle more regularly."

Residential customer | Customer Forum, Penrith

> "More natural parks and environment will ultimately attract more plants and animals/birds equalling healthier waterways. Shell Cove is a perfect example of urban parks, waterways, and nature booming."

Residential customer | Customer Forum, Wollongong

5.4 Managing Stormwater and Wastewater

Customers also discussed a list of project outcomes and their preferences for how Sydney Water should prioritise them. Again, customers completed a worksheet exercise where they ranked the project outcomes, they would like Sydney Water to prioritise – their responses were used as a basis for discussion.

Figure 10 Slide content from customer forums – Waterway Activities

While many customers were able to settle on a preference for the types of outcomes that should be addressed, some felt uneasy and ill-equipped to judge the importance of one individual outcome over another without more specific details and information about their impacts. They indicated that a more thorough understanding was needed, that decisions were more case by case

in nature and that the knowledge required to make an informed decision might be too complicated. Some even said that they would prefer to defer such decisions to experts in this space.

Overall, many customers felt that 'doing a bit of everything' was the most logical approach. They also recognised that these activities are interrelated and undertaking one initiative might reduce the need for another.

Ultimately, when asked to make a choice they decided that 'reducing wastewater pollution to improve waterway quality' and 'reducing litter from stormwater and wastewater' were the two most important outcomes to address. These were both ranked to be the most important overall, as customers generally assume that these have the biggest impact on restoring waterway health.

Table 5 Prioritising Waterway Activities

	In priority order:
Tied for 1st	Reducing wastewater pollution to improve waterway quality
	Reduce litter from stormwater and wastewater
	Managing storm water
	Directly restore and naturalise waterways

> "Wastewater pollution because it's often invisible/non-obvious and is the source of many other environmental problems. Focus more on addressing the cause of issues over the symptoms."

Residential customer | Customer Forum, Wollongong

> "Reduced litter from stormwater and wastewater could make it reusable for another reason and will reduce overall environmental pollution and it will have a good impact on all other areas."

Residential customer | Customer Forum, Penrith

> "With management of storm water comes other aspects like lower litter etc. Naturalising waterways both beneficial to plants and aesthetically beneficial."

Residential customer | Customer Forum, Hornsby

> "Directly restoring and naturalising waterways is the first step to managing stormwater and reducing wastewater pollution."

Residential customer | Customer Forum, CBD

5.5 Ranking Investment Considerations

When delivering outcomes, Sydney Water must balance the needs and wants of its customers against its ability to keep bills affordable. To ensure that investment decisions align with customer needs and expectations, Sydney Water asked customers what they believe are the most important considerations when making investment decisions relating to Waterway Health.

Customers were first presented with a list of potential considerations and asked to rank them in order from most important to least important. Customers were asked to add any additional considerations they felt should be included in this ranking exercise. The ranked orders customers settled on were used as a starting point for discussions around what considerations Sydney Water should prioritise when making investment decisions, and why these are important.

Customers indicated that the most important consideration was how much the community was set to benefit from an investment. In other words, spending that delivered maximum value for money in terms of the number of people who benefit was seen as highly desirable. How much effort is required to improve a waterway was also a very important consideration with customers suggesting that addressing the easier challenges first may mean more can be done as a whole, which would allow the benefit to be spread across a wider group of people. The least important consideration was the cultural value of the waterway followed by whether, or not the community had access to other healthy waterways nearby.

Table 6 Prioritising Waterway Investment Considerations

	Investment Consideration
More important	What are the potential benefits to the community of improved waterway health, such as animals fish populations and opportunities for recreation
	What the current condition of the waterways is and how much effort will be required to improve it
	The cost of improving the waterway and how much impact this has on water bills
	Whether it is equitable to invest in a waterway and whether other waterways have a more urgent need
	Whether a clean waterway will have a positive impact on local businesses and liveability
Least likely to be identified as most important	Whether the community has access to other healthy waterways nearby
	The cultural value of the waterway to local communities

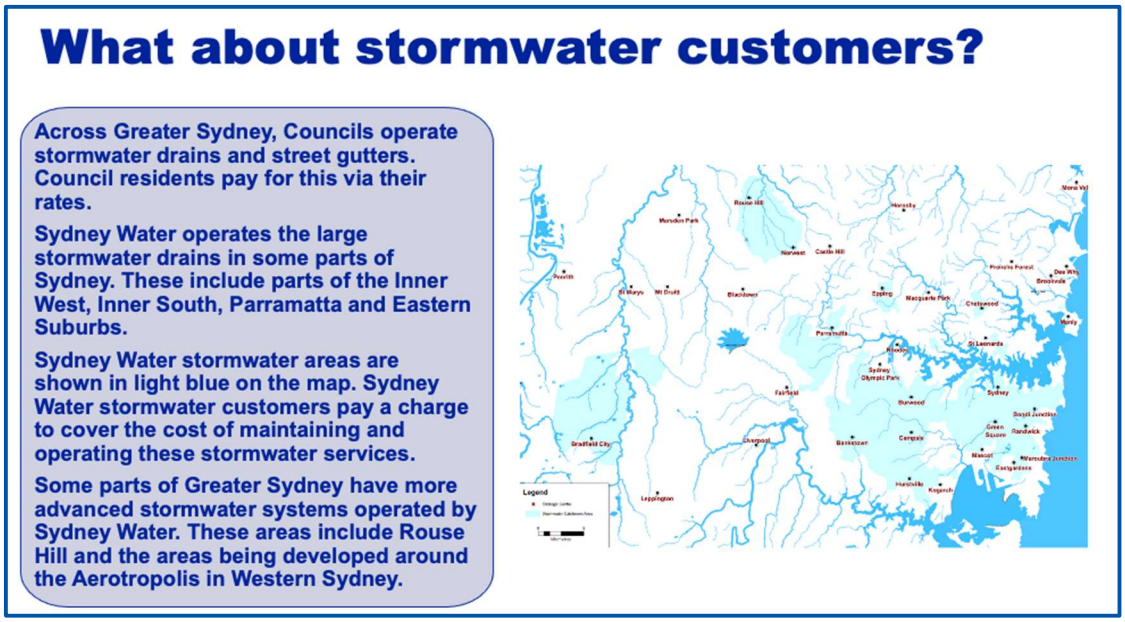
5.6 Distributing the costs of complex Stormwater systems

Across Greater Sydney, the way stormwater services are currently funded varies. In many areas councils provide stormwater services, however in places such as the Inner West, Inner South, Parramatta and Eastern suburbs, Sydney Water provide stormwater services and customers in these regions receive an additional charge on their water bills, that customers in other areas don't pay. Questions were included in the engagement sessions to help Sydney Water understand customer's views about this approach and whether it is seen as equitable and fair and whether they feel any changes should be made.

Customers were shown information about how stormwater services are managed and how funds are currently raised to deliver these services. They were then asked to share their thoughts and

preferences around whether the status quo should be retained or whether an alternative approach should be taken (i.e. spreading the cost across the entire customer base).

Figure 11 Slide content from customer forums – Stormwater customers



Responses were mixed as to whether the costs of more complex stormwater systems need to be distributed across the entire customer base or isolated to customers in areas where those systems are located.

There were arguments for and against both approaches with no clear consensus, with a 'we're all in this together' sentiment underpinning arguments for spreading costs across the entire customer base. 'User pays' arguments and concern about potentially paying for stormwater twice (through council rates and water bills) underpinned arguments against spreading the cost over the entire customer base.

The customers who were in favour of spreading the costs generally viewed this as a more equitable and practical approach. Some also worried that the current approach could set an undesirable precedent where people are allowed to opt in/out of what public services they will and won't pay for. Some suggested that everyone benefits in the long run from these systems because it ensures a well-maintained region so everyone should contribute.

Some customers raised arguments about equity, stating that many of the areas with more complex stormwater systems were more affluent. They expressed that people who choose to live in more expensive areas should absorb such costs as they are more able to do so.

There was also concern amongst those who pay for stormwater through council rates. This stemmed from questions about whether they would be required to pay twice (for their own stormwater and someone else's). This was the primary argument customer for not spreading the costs.

> "They are rich, they chose to live there, they should pay."

Residential customer | Customer Forum

> "I struggle to see the benefit of paying for someone else's stormwater."

Residential customer | Customer Forum

> "So why should I pay for my stormwater and someone else's."

Residential customer | Customer Forum

> "It's just more practical if it's equitable. We can't have people opting in and out of paying for things."

Residential customer | Customer Forum

5.7 Key sub-groups

Sub-groups were also asked to prioritise specific considerations regarding the health and maintenance of Sydney Waterways. These are summarised below, along with any differences, when compared to the reasons given in the residential customer forums.

First Nations Customers

First Nations customers are active users of Sydney region waterways for social activities sport, exercise, family activities, fishing, and family picnics.

Similar to other customers, there was near unanimous agreement that Sydney Water's first priority should be improving highly disturbed waterways. First Nations customers felt there was a need for improved swimming and fishing quality, particularly in areas that were historically not used or that had environmental damage resulting from dumping or overuse.

The overwhelming majority of First Nations customers suggested that Sydney Water prioritise 'creating a place for nature – where plants and animals can thrive'. This is both for the wellbeing of the animals, fish and environment and their own health as they consume the fish and spend time in such locations.

Unlike other residential customers who focused on wastewater and litter, First Nations customers unanimously agreed that 'managing and improving the quality and volume of stormwater that drains from suburbs into waterways by upgrading stormwater channels. Stormwater issues directly impacted the homes and suburbs of some of those participating in the research. They were quite vocal about his problem although whether a larger sample size of First Nations customers would agree is unknown.

Like the general population, First Nations customers felt all considerations discussed were relevant when making decisions around waterways. They felt the most important consideration for Sydney Water when making decisions is 'the current conditions of the waterways and how much effort will be required to improve these waterways' this was closely followed by what projects would deliver the 'Greatest overall benefits for the community'. They also ranked 'whether the community already has close access to other healthy waterways' as less important relative to other considerations. First Nations customers also stressed the importance of consulting closely with indigenous people when making decisions about waterways. Greater Sydney's Waterways hold

significant cultural importance and respecting their views on any initiatives was seen as paramount.

> "I know that sometimes when it rains heavy, the stormwater drains near us sometimes can't handle it as there is too much water. So I think that needs to be a priority."

First Nations customer | Focus group

> "I think you need to look at prioritising what needs to be fixed first and what can wait a bit longer to repair or fix. The ones that are used more should be looked after first and then go down the list to the one that is less used. But you're never going to be able to meet everyone's expectations."

First Nations customer | Focus group

CALD Customers

Generally speaking, the views of CALD customers with regard to waterway health were not overly different from the general population.

Many of the CALD customers that participated in the engagement, indicated that they were not likely to be heavy users of waterways currently earmarked as possible sites for improvement 'although some also noted that this view might change if they were improved'. Even so, many think waterway health is important and that the environment continues to need protection to ensure the health of the planet and overall, this is the most important consideration. They also talked about this being a bigger concern and priority than whether or not they personally use it for recreational activities.

CALD customers were split between whether Sydney Water should focus on maintaining sites that are currently in a good condition' or whether to focus on the 'highly disturbed' waterways first. Some customers demonstrated loss aversion in not wanting to lose waterways in a good condition while others expressed concern about downstream impacts of highly disturbed waterways and their impact on nature and health) these views were split with roughly equal numbers arguing that each should be prioritised.

CALD customers valued enhancing places for nature to thrive, more so than creating recreational opportunities for people. They also wanted to prioritise projects that would deliver the greatest benefit to the most people and the projects that would deliver the greatest long term environmental outcomes. The cost of improving waterways and how much impact this has on water bills were much more relevant and important for this audience.

Like the general public the cultural value of a location had secondary importance when compared to other considerations. In other words, they didn't fell this should be the pillar on which decisions to invest are made, instead it should only be a supporting argument if other considerations are already accounted for.

> "Letting animals and plants have healthy places to live is more important than us people enjoying ourselves."

Mandarin-speaking customer | Focus group

> "As a migrant and refugee to this nation, I believe people have a responsibility to adapt to the culture of the country they are in. I needed to adapt from Poland to Greece, then here. I don't think green spaces and waterways should be subjected to cultural issues and should be open for all."

Greek-speaking customer | Focus group

Business Customers

For business customers, when prioritising improving waterway types, their rankings were the same as for residential customers: highly disturbed first, followed by the moderately disturbed, with those already in a good natural state last.

And similar to residential customers, business customers ranked first 'creating a place for nature – plants and animals to thrive' although they were equally divided over what should come second: 'enhancing access and recreational opportunities for people' or 'improving urban parks and waterways so they are more natural'. Generally speaking, the health of waterways had limited relevance to their businesses and their feedback was more from a personal standpoint.

With regards to waterway outcomes, business customers again ranked them the same as residential customers, with 'reducing litter from stormwater and wastewater' and 'reducing wastewater pollution to improve waterway quality' the main priorities. Business customers also want Sydney Water to make investment decisions that deliver the greatest 'potential benefits to the community' which was the most important consideration for them. Things such as the 'cultural value to local communities' was seen as less important.

There were also conversations around how Sydney Water could work with businesses to help minimise any impacts the businesses have on the environment. By this they meant Sydney Water taking a more hands on approach to share their expertise around conserving water and optimising the disposal of wastewater or trade waste. They would also like Sydney Water to take stronger against businesses that cut corners with these responsibilities. Ultimately, they see Sydney Water as a leader and role model in this space and would like more engagement between Sydney Water and the community.

> "Clean waterways are relatively important as a good corporate citizen."

Service Critical High Business Customer | In-depth interview.

> "You should start with what is already disturbed and try to fix it. If the waterway is already in good natural state, it means it's already naturally protected so not at risk, so that probably wouldn't be a high priority."

Service Critical High Business Customer | In-depth interview.

> "I was looking at a report yesterday, talking about the number of species that are becoming extinct, particularly in urban environments because we're not protecting those areas."

Service Critical High Business Customer | In-depth interview.

> "That's a bit trickier because they're all about the same really. They relate to different people and different issues."

Service Critical High Business Customer | In-depth interview.

Value Makers

Value makers felt they were ill-equipped to rank or prioritise these options because they felt they don't know enough. Therefore, there was no consensus or pattern to their responses.

Like other customers, there was agreement that 'creating a place for nature – plants and animals to thrive', and 'benefitting the most people' are most important, in general.

> "It's unclear what they mean. What will they do to protect it? I would expect to focus on improving those that are more disturbed to avoid from it getting worse."

Value Maker | In-depth interview

> "Very tricky. They're all important."

Value Maker | In-depth interview

> "I think if you protect your plants and animals to thrive, then the humans will have a place to swim at, safe and clean, and then we'll improve everything."

Value Maker | In-depth interview

Customers living with a disability.

Overall, the views from customers living with a disability were similar to those of other residential customers although some differences did exist. They generally felt that if waterways are used frequently by people or are surrounded by houses, then they should be maintained in a good condition.

Regarding the types of waterways that need to be improved, customers living with a disability felt that improving highly disturbed waterways is the top priority as they were concerned about the potential impact these sights could have on people's health as well as the health of surrounding flora and fauna and even pets. Next most important was protecting moderately disturbed waterways, to ensure pollution is contained and to prevent these getting worse and becoming highly disturbed.

Like with the general population, creating a place for nature where flora and fauna can thrive was the most important value whereas making parks and waterways more natural was considered the next most. Unlike the general population, customers living with a disability placed creating recreational opportunities for humans as the third priority and felt that recreational opportunities

shouldn't be placed above the wellbeing of the natural environment. Like with the general population, they expected that focusing on the first two would indirectly enhance recreational opportunities as a spinoff benefit.

In terms of waterway health and direct outcomes; customers living with a disability believed that reducing wastewater pollution and litter in stormwater were the most urgent matters in their view litter and pollution sounded like a more urgent issue to address than other outcomes such as restoring waterways for example. The general sentiment around this was that waterways need to be cleaned up first before they can be naturalised.

Customer living with a disability generally found it challenging to prioritise investment considerations as they felt all were important. Overall, the urgency of the need and the number of people benefitting from an investment were considered to be most important.

These customers tended to focus on the outcomes and benefits of potential investments and in principle felt these were more important considerations than potential costs and bill impacts, they often commented that increasing costs are necessary and inevitable. In summary they believed that costs shouldn't guide investment decisions. They would prefer that long terms benefits for people and the environment should be the main focus, even if the benefits may not be immediately obvious or if they take time to materialise.

> "It depends on where it is – if there are homes nearby and people living there, there should be the focus for improving waterways especially when highly disturbed."
>
> **Customer living with a disability |** In-depth interview.

> "Because improving the waterway for health and animals, I think that one affects everything."
>
> **Customer living with a disability |** In-depth interview.

Councils and Government

Speaking as individuals, council and government representatives often wanted Sydney Water to prioritise the same things as residential customers. Speaking as government and council representatives their views reflected their particular area of focus for which they are responsible. That is, if a representative worked closely with harbours or waterways then concerns about wastewater overflows and litter were often elevated. These representatives often have government set compliance targets which they want to meet and don't want to risk missing. For example, they don't want to breach an EPA standard and be required to rectify this.

Government and council stakeholders often raised concerns about equity with regard to Sydney Water planning and investments. They commonly mentioned that poorer suburbs aren't treated the same when it comes to delivering healthy waterways and aren't prioritised to the same extent as more affluent areas. As a result, they felt the goal should be to satisfy whoever is likely to need the investment the most.

These stakeholders would also like to work more closely with Sydney Water wherever possible. There is the feeling that Sydney Water isn't very approachable, works in silos, and doesn't work well with councils. They felt this was a missed opportunity for Sydney Water to benefit from the

expertise of these stakeholders. For councils, not working closely with Sydney Water could cause other problems, for example, not having a synergistic approach to communication during an adverse event that falls within the domain of Sydney Water could be challenging, particularly given that councils often field complaints as customers assume it is the council's responsibility.

> "We get complaints all the time from residents about our waterways, that they smell… There's a constant flow particularly after high rainfall events where we we're inundated by complaints from the public and we're just continually referring them to Sydney water."

Local government representative | In-depth interview.

> "I'm not sure if it's really about the level of disturbance, highly disturbed or moderately disturbed… there's a number of issues that impact on waterways health, for example, creek bank erosion, that's not Sydney Water's responsibility necessarily."

Local government representative | In-depth interview.

> "People who are struggling to feed their families or with the cost of living, the environment, their local environment becomes less important to them because it's a survival thing really. I think that would mean that's where the more effort should be in those places where the Community doesn't and can't do it."

State government representative | In-depth interview.

Major Developers

Major developers tended to prioritise improving waterway types somewhat differently to residents. Greater emphasis was placed on 'protecting a waterway that is already in a good natural state' than either improving a 'moderately' or 'highly disturbed waterway'. Protecting existing healthy waterways was typically seen as the most effective and efficient use of Sydney Water's budget.

With respect to the values that should be enhanced, major developers again differed from residents by placing greater importance on 'improving parks and waterways so they are more natural' and less importance on specifically 'creating a place for nature – plants and animals to thrive'. Some developers felt there was an inherent benefit to nature by improving parks to be more natural anyway.

When considering what types of projects Sydney Water should prioritise, all but one developer placed greatest importance 'reducing litter from stormwater and wastewater'. 'Reduce litter from stormwater and wastewater' was typically the second most important type amongst major developers. While placing emphasis on reducing litter from stormwater and wastewater there was some uncertainty as to why Sydney Water would consider this their responsibility.

Like the general population, major developers tended to consider all considerations discussed were relevant when making decisions around waterways. Two considerations were most often selected as most important – 'the current condition of waterways and how much effort will be required to improve it' and 'whether it is equitable to invest in a waterway and whether other waterways have a more urgent need'.

Major developers, like other stakeholder groups would like to work more closely with Sydney Water wherever possible. There was feeling that there is a lack of collaboration between developers and Sydney Water and this provides a real opportunity for increasing understanding of each other's operating environment and impact on healthy waterways.

> "If we are improving parks so they are more natural there is an immediate benefit to the natural environment." "

Major Developer | In-depth interview

> "It is considerably more efficient use of funds for Sydney Water to focus on maintaining existing waterway health then tackling highly disturbed waterways. Existing healthy waterways can be degraded quite quickly."

Major Developer | In-depth interview

> "I am still unclear as to why Sydney Water feels it has responsibility for maintaining waterway health more the local councils or the State Government."

Major Developer | In-depth interview

6 What we heard: Cool, Green Spaces

6.1 Context

In previous phases, customers said that a key priority for Sydney Water is to contribute to a cooler environment by enabling more pleasant green spaces across the region. Customers want to see public spaces planted and watered smartly, to maintain greenery and amenities where possible. They value the watering and irrigation of green spaces to maintain vegetation and cooler temperatures in the community during hot dry conditions. Customers also indicated that they are willing to pay more in their bills to ensure the watering of public green spaces using water sources such as rainwater, stormwater or recycled water produced from wastewater.

During Phase 4, background information was provided to give customers context surrounding investment decisions in this area. This information included the following:

- Currently around 95% of water used for irrigation is sourced from drinking water.
- Sydney Water are able to make recycled water available for cooling and greening purposes.
- In parts of Western Sydney, recycled water could be sourced from wastewater that is first treated to appropriate quality standards at a new water recycling plant before being distributed through a costly network of new recycled water pipes.
- In Far Western Sydney, water could be also sourced from excess stormwater treated to an appropriate standard.
- During severe droughts, when stormwater volumes are low, the recycled water would be sourced from treated wastewater produced in a new plant and distributed via a costly new pipe network.
- In some instances, Sydney Water would look to share the cost of building and maintaining new irrigation systems with the relevant green space owner or manager to reduce bill impact.
- Producing recycled water for irrigation in greater volumes is an expensive undertaking that has a considerable bill impact.

Customers were shown maps of:

- Existing green spaces that currently use recycled water (produced by Sydney Water) for watering.
- Proposed new green space projects to be delivered over the next 10 years that could utilise recycled water.
- Additional projects using recycled water to help create cool, green spaces (on top of 1 and 2) which could be delivered over the next 10 years.

Figure 12 Slide content from customer forums – Existing green spaces using recycled water.

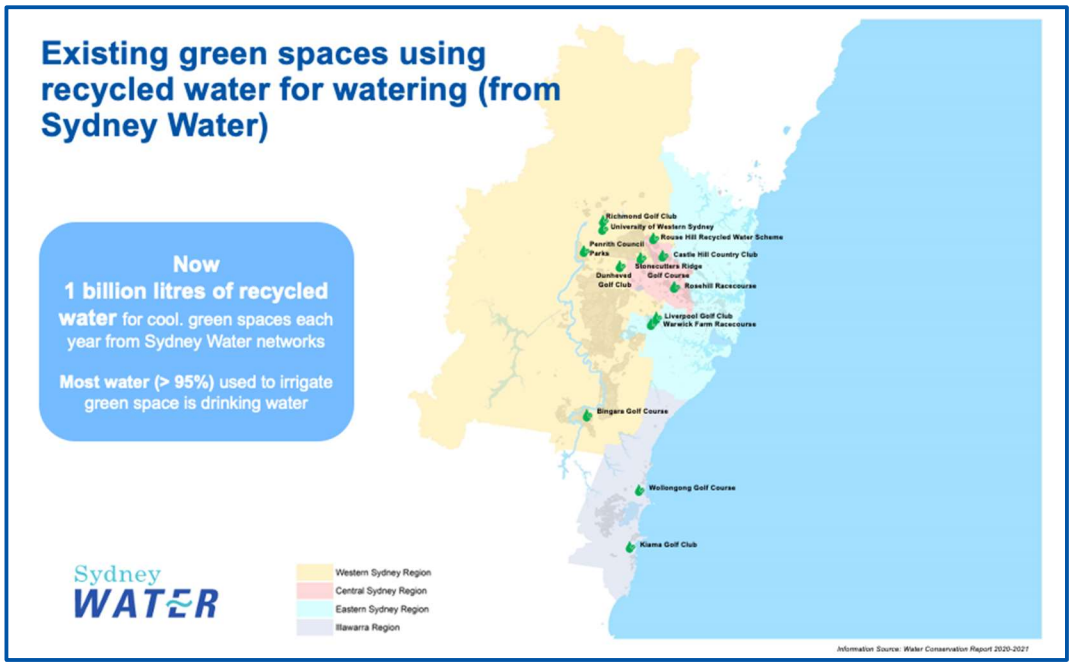


Figure 13 Slide content from customer forums – Proposed spaces for recycled water

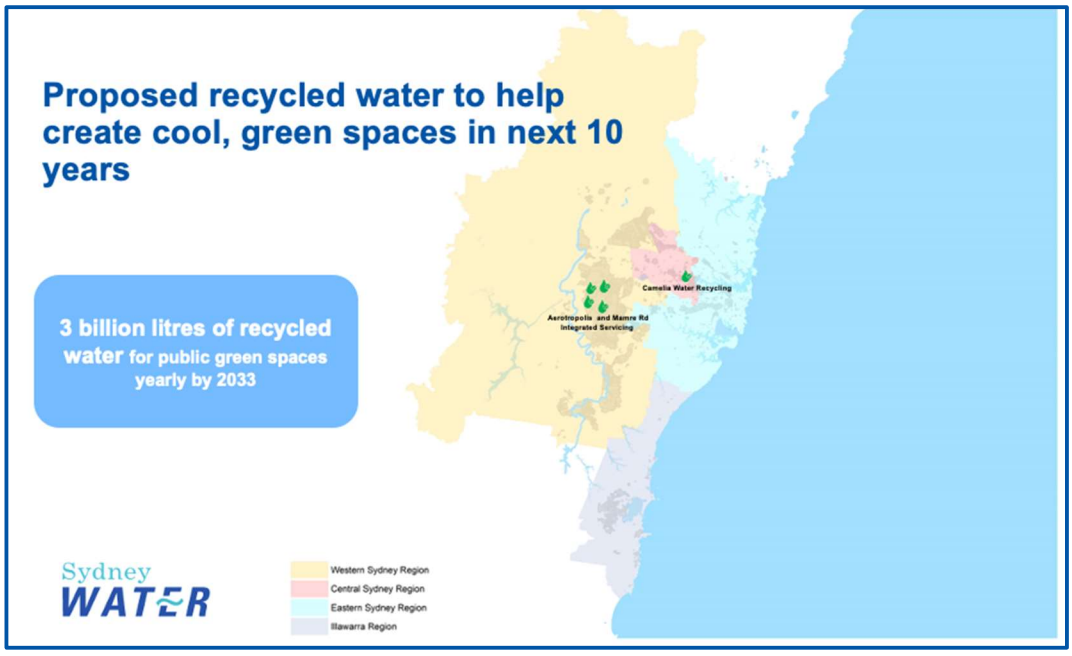
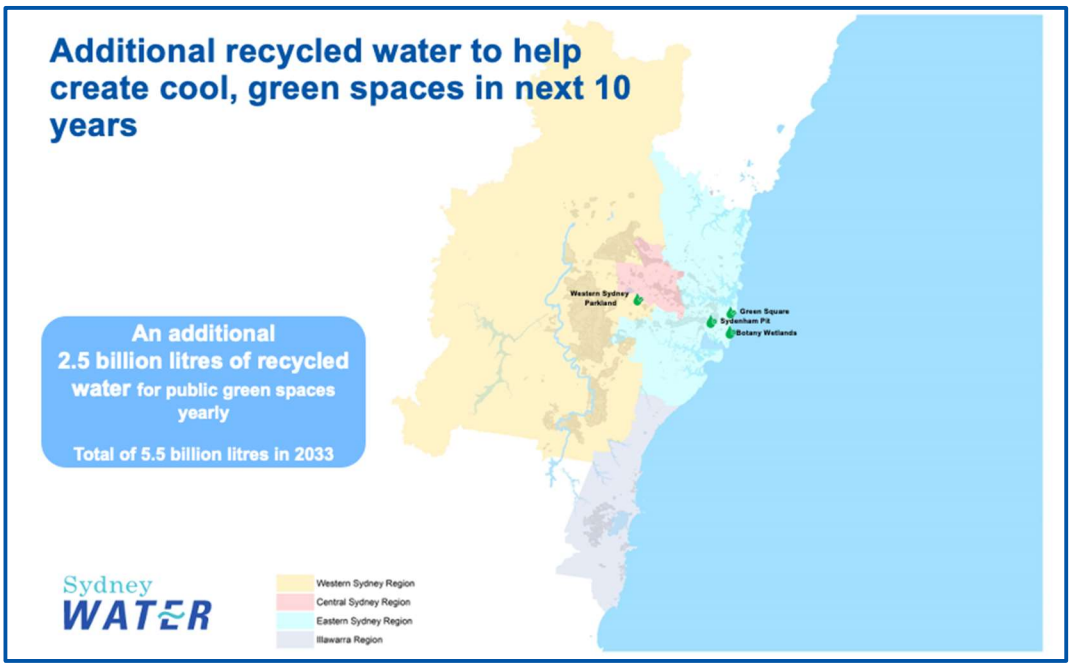


Figure 14 Slide content from customer forums – Additional proposed spaces for recycled water.



In Phase 4, Sydney Water wanted to understand how they should approach decisions around investments in gool, green spaces, including what locations and projects should be prioritised and what considerations are most important or most relevant to customers. Ultimately customers felt Sydney Water should invest more in cool, green spaces, although their understanding of the costs involved in delivering such investments is somewhat limited which is demonstrated by the gap between what they are willing to pay and what it costs to deliver new investments in this area.

6.2 Use of existing and proposed Cool, Green Spaces

Many of the places that have been earmarked for irrigation (with recycled water) are reasonably small in size with only a minority of customers visiting them often or at all. As a result, most customers in the forums did not have strong opinions about the specific locations mentioned in the stimulus material.

The fact that recycled water is able to save Greater Sydney from using drinking water for irrigation is a benefit that is well understood by customers. Many however, did not seem to make an immediate connection between irrigation and the cooling effects of green spaces. As such, many did not focus on the cooling benefits of green spaces when talking about why they value green spaces. Instead, they often focused on the aesthetic appeal of these spaces and the opportunities they afford for recreation and leisure.

Overall, customers were ‘shocked’ to learn that 95% of the water used for irrigation is sourced from potable drinking water, and there was a general consensus that this is too high. They thought that the percentage should be much lower, and that alternative sources of water need to be found if these areas are to be kept green. This highlighted a strong customer appetite for more spending in this space. That being said, the high cost of delivering recycled water projects and the potential

impact these investments can have on customer bills is currently not well understood by everyday customers. Customers expressed a willingness to pay an additional $7 per year to deliver additional recycled water projects and reasoned that it is a relatively small amount of money for an important and valued investment. They also felt however, that the added volume of recycled water this investment would deliver was not substantial. Some calculated that such an investment would mean that more than 85% of the water used for irrigation would still be sourced from potable drinking water, which they felt was only a small improvement on the current state. A few customers pointed out that if $7 a year could only lead to a 10% improvement*, then getting to a situation where most water (used for irrigation) was recycled would be very expensive.

Customers sought geographic equity with regards to which projects are pursued, particularly given the costs and bill impacts involved with these types of investments. Again, as mentioned in other conversations, questions around whether developers should be shouldering more of the costs of cool green spaces were raised several times. Common feedback and a point of contention for customers was that there appeared to be a high number of golf courses benefiting from recycled water investments that Sydney Water are expected to pay for. These concerns mainly questioned how equitable this was and whether golf courses are public spaces. Customers mentioned that only a minority of the population play golf and therefore only a minority would stand to benefit from something everyone must pay for. Customers would much prefer that investments focus on public places that are open to everyone.

Few customers objected to the Aerotropolis being earmarked for recycled water investments. Customers often argued that recycled water should be mandated as a prerequisite for new developments. They argued that it is easier to put these systems in place from the outset than retrofitting existing suburbs with them. There was also little opposition to the use of recycled water in the aerotropolis given that it is expected to deliver many economic benefits to the community.

*Note 10% is an estimate customers came up with via their own calculations aided by the stimulus material provided; and is not the proportional improvement that would actually be delivered.

> "It's hard to recycle water in existing suburbs. Just make it a rule, if you develop a new place, it must have recycled water for this. And make the developers pay".
>
> **Residential customer** | Customer Forum, Wollongong

> "Why is it all golf courses and not more public parks?"
>
> **Residential customer** | Customer Forum, Parramatta

> "$7 is nothing, worth it. Going to be useful to the community."
>
> **Residential customer** | Customer Forum, CBD

6.3 Preferred water sources for keeping spaces green and cool.

Customers indicated that they would prefer that a mix of alternative sources of water be made available for the purpose of irrigating and maintaining green spaces that goes beyond captured rainfall and drinking water. Customers have a general preference for reserving potable water (that

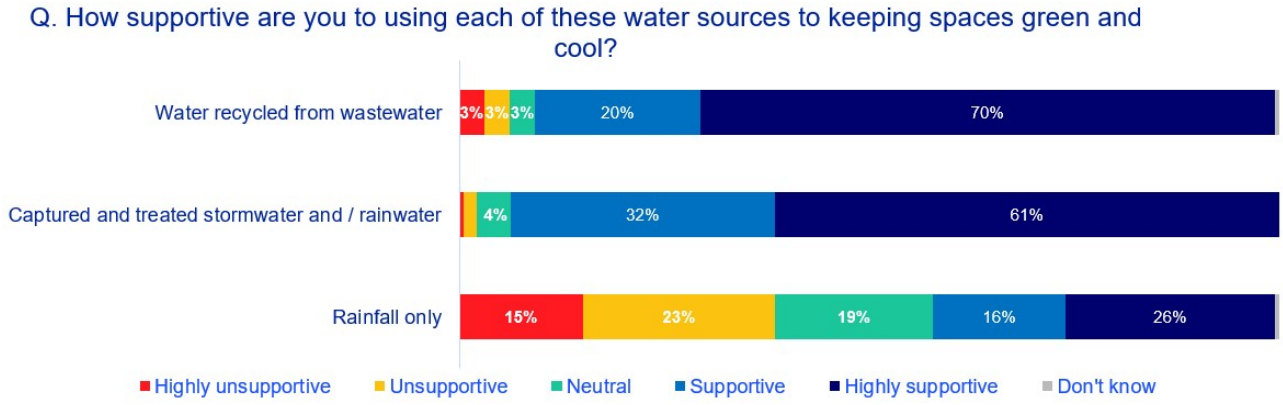
is captured in dams) for essential purposes such as drinking and washing. They see dam water as a more natural and safe form of water which is driving this sentiment. They also believe that its use for irrigation, particularly in drought is wasteful.

The preferred sources of water for keeping public spaces green and cool is water that has been recycled from wastewater or harvested stormwater (that is captured and treated). Customers like that these sources of water are less dependent on rainfall and that they are more likely to remain viable in times of drought and allow Sydney to diversify away from using dam water for non-essential purposes.

The high cost of delivering recycled water was a consideration for customers although it was also not well understood. Despite this most customers felt that much more of the region's irrigation should be sourced from recycled water. They indicated that 3% from recycled sources felt like an underinvestment by Sydney Water. As discussed later in the DCE section of this report, customers were willing to pay more on their quarterly bills to see additional recycled water made available for the irrigation of cool, green spaces. Sydney Water will need to evaluate whether the extra amount customers are willing to pay is enough to cover the investment required to deliver these outcomes.

One final point to note, was that customers noted that offering recycled water options in existing suburbs might be substantially more costly than new developments. They suggested that the use of recycled water for irrigation of public spaces should be mandated in any new developments or subdivisions.

Chart 1: Support for different water sources.



Base size (those who provided a valid response in workbook): Various bases: Recycled wastewater n=192, Stormwater n=192, Rainfall n=194.

6.4 Ranking Investment Considerations

Sydney Water wanted to know what considerations customers want Sydney Water to prioritise when making investment decisions relating to Cool Green Spaces. Customers were first presented with a list of potential considerations and asked to rank them in order from the most important to least important. Customers were then asked to add any additional considerations that they felt should be included in this ranking exercise. The ranked orders customers settled on were used as

a starting point for discussions around what considerations Sydney Water should prioritise when making investment decisions and why these are important.

Overall, the most important consideration for customers was the degree of positive impact, meaning they want Sydney Water to consider projects and initiatives that deliver the greatest benefit to the largest number of people. The need to maximise value for money appeared to drive this sentiment.

The next most important consideration was 'who is the most in need?' Customers want Sydney Water to pursue projects that help these customers first. This was driven in part by compassion and empathy for those who need it most.

Table 7 Prioritising Cool, Green Spaces Investment Considerations

	Investment Consideration
More important	Where can the largest positive impact be had
	Who is most in need [i.e., drier, hotter locations]
	What are the long-term benefits
	How many people will benefit
	Are the community willing to have a higher water bill to pay for these projects
	What areas are the most effective to target first
	Does the community support the project
Least likely to be identified as most important	Are water sources readily available
	How much a project costs upfront

Like with other topics discussed, customers believe that all considerations discussed were important to some degree. As a result, selecting the least important was challenging however, when prompted, customers ranked 'whether or not water sources are readily available' and 'how much the project costs up front' as the least important priorities.

Customers recognised that both considerations are inherently linked to the cost of delivering a project. For example, the availability of nearby water sources only has relevance because it increases the cost of delivery. So, while customers agree that cost is important, they ranked this as less important than considerations that align more closely with their personal values, such as social responsibility, efficiency, equity and long-term viability.

6.5 Areas to target when delivering water for cool, green spaces across Greater Sydney

Customers were then asked their thoughts on which areas of Greater Sydney should be prioritised above others for the delivery of cool, green spaces:

Should Sydney Water:

a. Target the areas that are most in need/the worst areas first?
b. Target the areas where it may be most cost effective to do so?
c. Where a larger positive impact can be had?
d. Consider something else?

Overall, customers believed that it is most important for Sydney Water to consider and focus on:

- **Areas where the most positive impact can be had.**

As mentioned previously, customers want Sydney Water to maximise the positive impact with any investment decision. In other words, they want Sydney Water to prioritise areas where the greatest number of people benefit. This consideration ranked above others discussed below.

- **Areas with the greatest need.**

Customers also believed the areas that are most in need or worst affected by heatwaves should be prioritised over others. This view was most commonly held by customers residing in both Western and Far Western Sydney (who typically suffer the hottest conditions). Customers living in Inner and Northen Sydney also tended to sympathise with those living in the west of the city and felt these areas should be prioritised as well. Customers in the Illawarra also spoke, in principle, of prioritising areas that were most in need, but appeared less willing to contribute (through their bills) to cool, green spaces in Western Sydney and would prefer more investment in their region.

- **Spreading projects across the region equitably.**

Some customers indicated that they want projects and investments to be spread as equitably across Greater Sydney as possible, but also acknowledged that this may not always be possible practical and that considerations may need to take precedent first.

- **The most cost-effective projects.**

Cost-effectiveness was also an important consideration and customers agreed it should be part of the cost benefit analysis and not ignored. Despite this, they also thought it should not be the primary consideration when deciding which areas receive investment.

> "They should figure out a way to do all of them; they're not necessarily separate."

Residential customer | Customer Forum, Penrith

> "It costs what it costs. If we need it, we need it."

Residential customer | Customer Forum, Wollongong

> "Densely populated areas and places for kids to play. We need access to these. During Covid we would've gone nuts."

Residential customer | Customer Forum, CBD

> "Cost has to come first, then the money goes as far as possible - bigger impact."

Residential customer | Customer Forum, Hornsby

> "A bigger area helps everyone/more people, and a larger area would be cost effective."

Residential customer | Customer Forum, Parramatta

> "The area that is hottest. Research needs to be done in the areas of geospatial data, temperature variation, and what the area is used for to learn where is the greatest need."

Residential customer | Customer Forum, CBD

6.6 Key sub-groups

First Nations Customers

Regarding the proposed cool, green spaces currently being considered by Sydney Water, most First Nations customers expressed that keeping them green is not important and should not be a priority for Sydney Water. Making use of recycled water was generally regarded as something that is 'really important', although many felt that maintaining green areas during dry periods or droughts was a waste of money and not an essential priority for Sydney Water. This was different from the general population who rated this more highly.

For the recycled water projects that Sydney Water are considering, there was agreement that if these are identified as the key areas where investment is needed then they are happy to trust the Sydney Water's judgement that the sites proposed are "going to be the best sites" and deliver the greatest benefits for Greater Sydney. Many acknowledged that they have limited prior knowledge, are not experts and that they trust Sydney Water's expertise. They also assumed that Sydney Water are best placed to select the most appropriate sites and would not undertake them without strong justification.

When discussing what they think Sydney Water should consider when deciding what projects to undertake, First Nations customers would like Sydney Water to take a holistic approach. This means they would like all relevant factors to be considered they felt none of the considerations discussed were unimportant. When prompted further to rank them, most agreed that 'how much a project costs', was most important as this was one which directly impacted their lives (through costs passed on in water bills). These customers also wanted to reiterate the importance of consultation with communities and that Sydney Water should always obtain feedback from Indigenous customers and consider this carefully when making decisions.

> "If you could keep these areas green in dry periods it would be good only if it was not going to cost more than it was being used."

First Nations customer | Focus group

> "When advising anyone or making a decision all of the questions [in the listing] should be answered so that the community can understand the big picture of all of these before a final decision is made."

First Nations customer | Focus group

CALD Customers

Like the general population, most CALD customers believed that potable drinking water should not be used to irrigate gardens or green spaces and that recycled should be used instead. They also expressed surprise that 95% of water used for irrigation was potable drinking water which felt wasteful to them.

CALD customers understood and acknowledged how cool, green spaces can benefit the environment and wider community. They also indicated however that if they did not live in areas where the use of recycled water was being considered, then it was unfair that they pay higher water bills.

Like with the general population CALD customers would like Sydney Water to consider areas with the greatest need first and investments where the most people are set to benefit.

> "With this proposal, I think some people might not be happy. For example, I live in the northern part of Sydney and the development is focused on the southern part of Sydney. With this proposal, I have to pay extra on my current bill to support somewhere I do not even know about."

Korean-speaking customer | Focus group

> "Drinking water is very precious and we have to keep [it] for us [and] for the next generation, so definitely it's not a good idea to water your backyard or front yard with drinking water. No, that's not acceptable.

Arabic-speaking customer | Focus group

Business Customers

Business customers were generally supportive of any proposed plans or new investments in green spaces. They were particularly supportive of these being delivered in new developments such as the Aerotropolis.

Like residential customers, Business customers believed that Sydney Water should first and foremost consider 'where the largest positive impact can be had', they also want Sydney Water to prioritise the areas that are 'most in need or are the most negatively impacted'.

They also differed from residential customers by ranking the community's willingness to pay for these projects as less important than other considerations discussed. Reasons for ranking this lower, included a belief that the general population may not understand or may disregard the

potential benefits of new projects. They were somewhat worried that the general population may be to cost, or budget focused and that they may not see the true value of these investments.

> "I think it's a necessity to have cool green landscapes. Looking at the housing developments which are being done in Western Sydney and SW Sydney, and the urban sprawl, it's vitally important that those areas do have the green landscapes and also the ability for them to provide recycled water in those areas should be easy because they are new developments."

Service Critical High Business Customer | In-depth interview.

> "I think it's always nice to have a green environment, but there might be a limit to that. We are in a harsh country and it can be very hot, so where do we stop? Where is the green more important than drinking water?"

Service Critical High Business Customer | In-depth interview.

Value Makers

Generally speaking, the Value Makers in this engagement didn't have strong opinions about the cool, green spaces that have either been proposed or are existing and like the rest of the population these locations were places that they visit rarely or did not visit at all.

Like the rest of the population, they were, particularly vocal around the number of golf courses that get attention and questioned whether this was fair, equitable or appropriate. They were also positive about investments involving the Aerotropolis which they felt 'made sense' given its status as a new development and its importance to the region's future and growth.

Value makers tended to have a greater awareness of some of the challenges facing Sydney Water with regard to aging infrastructure, to the point where they expressed notable concern about the future. So while they value the provision of cool green spaces, some thought this was not the most pressing or urgent priority for Sydney Water. Instead, they thought that maintaining Sydney Water's assets and protecting the regions water supply was a much more pressing challenge.

> "Once again, I stand strong on recycled water, catching our water and reusing it would be the solution for the future, for sure."

Value Maker | In-depth interview

Customers living with a disability.

Responses from customers living with a disability were aligned with those of other residential customers.

Most participants expressed surprise at the low percentage of recycled water that is currently used for irrigation. This was new information for most participants and brought to mind a sense of disapproval/disappointment. They believed that drinking water should not be wasted on cool green

spaces, and that recycled water should be used instead. Most participants had also not previously considered the amount of water needed to provide and maintain green spaces.

These customers did not see value in paying for golf courses to receive recycled water they also felt that the general public does not benefit from those specific spaces and these spaces should not use the community's (drink) water to begin with. They feel such water users should have more independence and responsibility over managing their own irrigation in a way that doesn't affect the community's water supply (such as using grey water, recycling water, storm water).

They felt the most important thing for Sydney Water to consider was delivering outcomes to those who are most in need. They want Sydney Water to take into account the long-term benefits of different initiatives and consider where the largest positive impact can be had as these were linked to sustainability and long-term increase in effectiveness.

The least important considerations were often upfront project costs and whether the community supports the initiatives or is prepared to pay higher water bills for it. They guessed that the community would not like to see costs increase and might not be able to imagine the long-term benefits that cool, green spaces could deliver.

> "It's hard for us to know what is a priority as we don't have the cost and benefits clear to make that call."

Customer living with a disability | In-depth interview.

> "The least important consideration should be "cost effective" because the focus should be on who needs it the most".

Customer living with a disability | In-depth interview.

> "[golf courses] it is accommodating a specific audience, if you are going to charge everyone extra for recycled water it should not be going to these places as it doesn't serve the greater public".

Customer living with a disability | In-depth interview.

Councils and Government

For councils and government, there was an underlying theme of wanting equity and fairness in decisions around which areas are prioritised. For example, there was a feeling that more could be spent on recycled water in less affluent suburbs around the Southwest of the city as these areas have 'the least canopy cover'. They argued that locations in Western Sydney should receive the greatest investment focus and had questions around the number of golf courses receiving recycled water and whether this was equitable.

Regarding recycled water projects, some argued that businesses who use a considerable amount of water, particularly for irrigation, should be expected to contribute towards any infrastructure costs associated with delivering recycled water, as their impact is greater than the everyday person.

And similar to other topic areas, councils and government stakeholders expressed a desire for Sydney Water to work more closely with them. They pointed out that councils have good local knowledge and better clarity around where recycled water could be best applied. They said that greater collaboration would allow them to share this information with Sydney Water.

Many government stakeholders spoke about the overall value of keeping areas green during dry periods, drought, and hot summer. Most talked about the cost of maintaining green spaces and that it would be more costly to attempt to restore areas that have lost their green canopy once the drought ends.

Several council and government stakeholders had additional things they want to see considered in the broader discussion about cool, green spaces, for example, they discussed the need:

- For more messaging and communication that addresses how the water system is integrated and benefits the broader environment, and the 'knock on effect' to community.
- To address the relationship between trees, irrigation, and water demand more clearly in communications with the public.

> "I think recycled water is really suitable for all of these things and the idea that we are spending a whole lot of energy on providing drinking water that is just used for people to wash their driveways or to water their plants is crazy."

State government representative | In-depth interview.

> "It's an environmental science solution, not an infrastructure, water supply consumption solution."

State government representative | In-depth interview.

> "It's probably cheaper in the long run if we maintain our green spaces than trying to bring them back once you get out on the other side of a drought."

Local government representative | In-depth interview.

> "I think it's probably a combination of all those things that you'd be doing a cost-benefit analysis on.

Local government representative | In-depth interview.

Major Developers

While major developers were generally supportive of any proposed plans or new investments in colling green spaces, there was for some a sense of 'deja vu'. A number of those interviewed referenced an earlier period where there was a drive to using recycled water in new developments. But at some point the plan was discontinued. Experiences from this had some impact on their reactions to the current proposal.

Major developers were also typically advocates for the use of purified recycled water through the network. There was strong support particularly for the use of recycled water to irrigate active open spaces.

Major developers were somewhat inconsistent in what they considered to be the most important considerations related to cool, green spaces, with four primary considerations:

- Where can the largest positive impact be had?
- How many people will benefit?
- Are water sources readily available?
- Does the community support the project?

There was greater consistency amongst developers regarding what was considered the least important consideration – "Are the community willing to have a higher water bill to pay for these projects?"

> "Around 15-20 years ago there was a push for recycled water. Developers made a contribution to recycled water by putting a 3rd pipe into new developments. Sydney Water dropped the whole recycling process. It feels a little bit disingenuous that they do this now."

Major Developer | In-depth interview

> "They can't create cool green spaces everywhere given cost. So how will the determine the appropriate sites?"

Major Developer | In-depth interview

> "I don't feel this is ambitious enough. They are too concerned about the reaction to purified recycled water. It should be going straight back into the network."

Major Developer | In-depth interview

> "For active open space this is of utmost importance. Passive open space should be designed so it doesn't require irrigation."

Major Developer | In-depth interview

> "Businesses and the community will benefit from the greater amenity that comes from cooler spaces."

Major Developer | In-depth interview

7 What we heard: Water Supply Resilience

7.1 Context

Greater Sydney's current sustainable water supply is exceeded by the region's demand and this gap is expected to increase in the future with population growth and climate change. This means that Greater Sydney's water supply is vulnerable to drought. As a result, Sydney Water needed to engage customers in Phase 4 around how to approach this challenge. Throughout the different phases of this engagement customers have indicated that they are willing to pay more in their water bills (above expected increases) to achieve an improvement in water supply security (or a reduction in the frequency in which water restrictions are required).

In Phase 1 of Our Water, Our Voice, customers recognised that population growth and climate change are causing more frequent and severe water shortages; as a result, they wanted Sydney Water to prioritise improving the resilience of Greater Sydney's water supply and reducing the frequency and duration of severe water restrictions.

In Phase 3 workshops, most customers wanted the current service level for water resilience to either be maintained (45%) or moderately improved (36%)*. Only a few customers (13%) were willing to accept a reduction in the resilience of Greater Sydney's water supply even if this meant there was no need to increase bills. Only 6% wanted to see a large increase in water resilience where the risk of needing Level 4 or 5 water restrictions was removed. This was because the 30% bill increase required to achieve this was seen as being too high.

In Phase 4 (the focus of this report), Sydney Water engaged with customers about the water resilience question from both sides, the first being reducing customer demand and the second being increasing supply. Customers were asked how willing and able they are to reduce their demand when there is drought and for how long. They were then asked about their preferences for approaching the challenge of increasing the region's water supply and what considerations should underpin investment and spending decisions.

To start with, customers were provided with information about water resilience challenges facing Greater Sydney and it was explained that there are two main parts to protecting the resilience of Greater Sydney's water supply for the future. This includes minimising the demand for water by customers reducing the amount they use; and increasing the amount of water that is available by investing in new water infrastructure and supply capacity.

Sydney Water wanted to understand the extent to which customers are prepared and able to reduce their water usage. Understanding this, allows Sydney Water to better understand how much new water supply capacity is required to maintain or improve the regions water resilience. Overall, most customers feel they would be capable of reducing their water usage below the current average (185 litres per day) and could maintain these lower levels as long as required in a drought. Many have done this before and expect they will need to do it again in the future. While

this is encouraging in principle, few customers had a clear understanding of how much water they currently use or to what extent they need to change or alter their current day-to-day water use behaviours (to reduce their average usage by the amount required).

Customers were also provided with information about different ways that Sydney Water might enhance the supply side of the equation. Potential options were discussed in depth along with the potential benefits and drawbacks of each option. Customers were then asked about their preferences with regard to these different options and what considerations should be made when making decisions around increasing the regions water supply.

The following images are examples of some of the information provided to customers during the customer forums.

* For context, those who wanted Sydney Water to spend enough to enable the current service level to be maintained (45%) were informed that this would mean a 10% bill increase and achieving an improvement in service levels (36%) would mean a 20% bill increase.

Figure 15 Slide content from customer forums – Why water resilience matters.

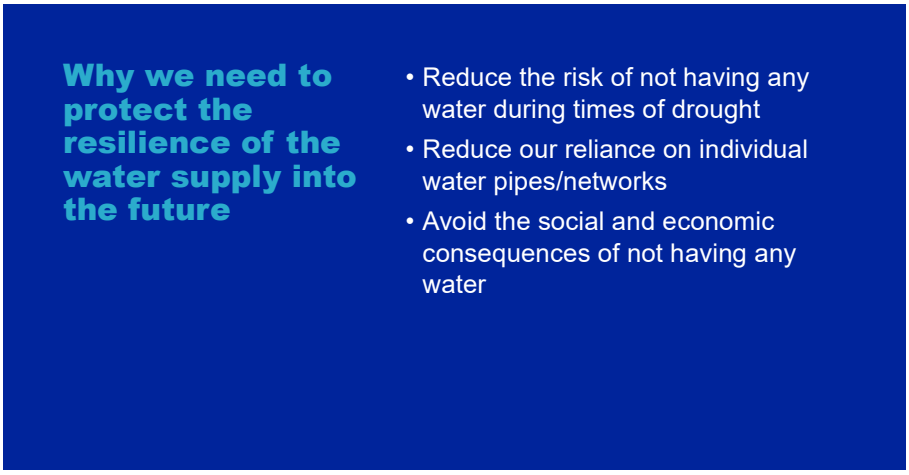
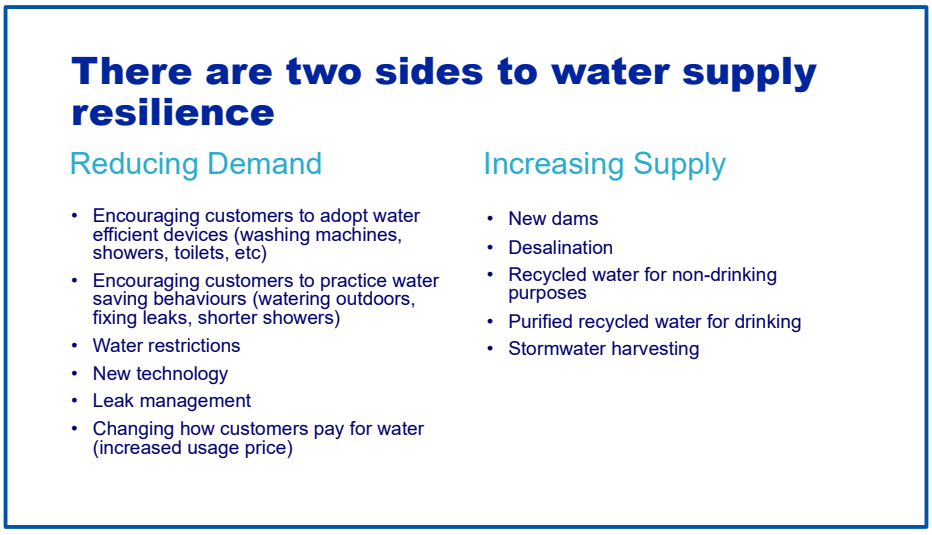


Figure 16 Slide content from customer forums – The two sides od water resilience.



7.2 Reducing Personal Water Usage

As mentioned above, with climate change and the risk of prolonged droughts increasing, Sydney Water are faced with the challenge of needing to understand how much residents are willing to reduce their water demand when faced with drought. In light of rising bills, customers said that Sydney Water should increase their efforts to educate the public on how to reduce their water usage. They often pointed out that reducing water usage not only helped improve water resilience but had the added benefit of helping people to offset some of the impact of rising bills.

Most but not all customers indicated that they were prepared to reduce their water usage substantially and for a significant period of time if it was required. The concept of a more resilient water supply is one that most customers understand and the main benefits of this are clear. In principle customers expressed a willingness to do their part to ensure Greater Sydney does not run out of water so that the region has what it needs in the face of drought, fires and climate change. Some customers even expressed pride in being able to reduce their water usage substantially when it is needed.

Most customers accept that even outside of drought, they have an individual responsibility to save water, minimise their personal usage and avoid wastage. One key challenge is, many customers do not know how much water they currently use and many would like more information and support with managing their usage. As mentioned previously, many also pointed out that the best way to support people who are struggling to pay their water bills is to make it easier for them to use less water.

Customers in Phase 4 were told that 185 litres per person, per day is the average use for residents of Greater Sydney. They were also shown how much water every day activities use and were given examples of what using 185 litres or 100 litres per day would look like in terms of how long they could shower, water the garden, run their taps or use their washing machines and dishwashers. Many felt they could restrict their usage to 100-125 litres per day if required, and many felt they could do so for several months if required or ‘as long as it’s needed.’

Some also recognised that this would be difficult and would require some effort although it was also common for people to affirm that their usage is already well below 185 litres per day. This mainly included those who have experienced or grown up with harsh droughts or had retained water-saving habits since the last water restrictions. Again, underpinning this discussion, however, was an acknowledgement that many customers do not have a clear understanding of how much water they currently use and despite their best intentions there was some uncertainty as to whether they could actually reduce their usage if required.

To the point above, some customers thought others were overstating their ability to reduce their usage. This included people who felt that restricting water usage would be difficult because of:

- family dynamics,
- varying attitudes towards water conservation,
- no previous experience with drought,
- ingrained habits and behaviours and things like owning a swimming pool,

- simply not believing that one person can make a difference.

Customers were also asked what would motivate them to use the least water possible, and at what point they would take action to do so. Many were unsure exactly when they would do this and a common response heard, was they would take their cues from Sydney Water and the media. They would look for cues like 'how seriously the situation Sydney Water and the media were treating the situation'. This point highlights the responsibility and importance of Sydney Water's role when it comes to influencing attitudes around water conservation amongst the general public. Great care is therefore needed with communication to ensure the right message is being conveyed.

Most customers agree that Sydney Water should spend more effort educating the public on ways to reduce water usage and, thereby, their own costs. Some barriers that they identified were that usage figures on the water bill do not translate to 'real life living', and renters may not have this information given they do not receive a bill. Overall, one of the biggest challenges was not being able to track their daily usage and not having a clear picture of how much each water activity uses (e.g. a 10 min shower uses 100 litres).

Educational suggestions include:

- Sharing practical examples on reducing water use through advertising, social media, leaflets in water bills, and prominently posted on the first page of the website.
- Sharing information about how much water people are currently using and what activities use the most water.

Suggestions for Sydney Water include:

a. Making it easier to track water usage (e.g. so people know how many litres they used when they took a shower).
b. Subsidising rainwater tanks.
c. Offering rewards or incentives for low usage.
d. Providing the option to pre-pay water bills so people pay closer attention to their usage.
e. Allowing bills to be paid weekly or monthly to allow for better tracking of water usage.

> "I still bring in a bucket to the shower."
>
> **Residential customer** | Customer Forum

> "I could do it [reduce water usage] as long as is needed."
>
> **Residential customer** | Customer Forum

> "Maybe if they [dam levels] got to 50%, but I'd probably just do it when they start talking about it on the news."
>
> **Residential customer** | Customer Forum

> "Have you ever tried to get your teen out of the shower?"
>
> **Residential customer** | Customer Forum

> "I'm doing a lot already I just don't think I can change that much."
>
> **Residential customer |** Customer Forum

7.3 Preferred water supply options

As mentioned previously, increasing the volume of water available through new supply options is another way of ensuring the regions water supply remains secure.

Customers were given information about a range of different water supply options including:

- Dams
- Desalination
- Purified Recycled Water for drinking (PRW)
- Recycled Water for non-drinking purposes
- Harvested stormwater for non-drinking purposes.

Overall, there was a rough consensus around the idea that 'no one solution was the silver bullet'. There was also general agreement that no solution was perfect, with each option having its drawbacks. The most hesitation was around PRW and people were mostly positive about desalination and recycled water for non-drinking purposes. This sentiment was common but not unanimous with pockets of customers expressing strong support for PRW having experienced it elsewhere while others were opposed to desalination due to questions about its cost, environmental impact and efficacy.

Dams

While customers were very positive about dams and valued them highly, they also recognised significant obstacles with building new dams or extending existing dams. This included a recognition that there is a lack of suitable locations close to Sydney.

- **Pros**: This option is familiar, well understood and trusted, it represents the status quo and is seen as a natural source of water when compared to other options. Dams are also seen as a low-cost option once built and as they require low amounts of energy, they are more desirable in the long run than alternatives that tend to use a lot of energy.
- **Cons:** Customers discussed a number of cons. These included the high cost to build a new dam, their reliance on rainfall which is not ideal when in drought and the environmental and heritage impacts caused by flooding of land used to store water. As mentioned above, there were also concerns about the low availability of suitable locations for building new dams. This point was a deal breaker for many, as they could not identify anywhere close to Sydney to build them.

  As in earlier phases, the dam conversation also invariably moved to the possibility of raising the Warragamba dam wall. Although customers were informed that this is not something within Sydney Water's control, some still wanted to discuss their views on this.

Desalination

Of the options presented, there was a reasonably strong consensus among customers that desalination is the best option for securing the region's water supply. This was partly due to a greater degree of familiarity with it and its ability to produce safe potable drinking water that is independent of rainfall. Many however, recognised that this is not a perfect solution, that it has notable drawbacks and is not a 'silver bullet'.

- **Pros:** Customers have reasonable familiarity with this option given it already exists, has been discussed in the media and is mentioned on water bills. They see value in it being independent of rainfall and a way of avoiding water restrictions when in drought. They also see the solution as less risky than PRW and have less concerns about water quality, safety and public health. The flexibility to turn desalination on and off is valued, although this value appears to be derived from a view that desalination should only be used when it is needed as a safety net measure.
- **Cons:** The environmental impact of desalination was a primary concern for customers. This environmental concern centred around high energy requirement and subsequent climate impacts (although these concerns were less prominent if energy is obtained from renewable sources). Other environmental concerns raised included the impact on the ocean and environment around desalination plants. Customers were also aware of the high cost to build and operate desalination plants with some mentioning an additional charge on their water bills when the Kurnell plant is operating. Another commonly raised concern was the efficacy of the desalination plant with some questioning whether the existing plant actually produced any water, whether it was being used or had mostly sat idle for. They also questioned whether it was good value for money with some describing it as a white elephant.

Purified recycled water for drinking (PRW)

Overall, there was limited support for PRW, while customers appreciate that it is independent of rainfall, many were uncomfortable about recycled wastewater being used for drinking. There were concerns about the quality of the water produced and whether it could be made safe to drink.

- **Pros:** Like with desalination, customers value that PRW is independent of rainfall. This was the key benefit identified by customers, a few customers noted that it was used overseas, is not much different from desalination and believed its use in Australia was inevitable. Customers also recognised value in it reducing the amount of wastewater discharged to the ocean although this benefit was not top of mind or well understood by many until prompted.
- **Cons:** Customers raised a number of issues with PRW, most notably the fact it comes from recycled wastewater which many had reservations about if used for drinking. Safety and public health concerns were top of mind as was the view that it is an untired technology. The high energy, environmental impact and cost to operate were also relevant to customers but were secondary concerns compared to concerns about water quality and public health.

Recycled water for non-drinking purposes.

Overall, customers are positive about the use of recycled water for non-drinking purposes. It is seen as a way of reserving potable water (collected in dams) for essential purposes. The major drawback for customers is the cost of building, especially as a separate pipe network is needed.

- **Pros:** Like with desalination and PRW, customers said they value this option due to its independence from rainfall. Customers also compared to this option to PRW and liked that it was not to be used for drinking. Many recognised that its value lied in its ability to reduce the use of potable drinking water (sourced from dams) for non-essential applications such as watering gardens and irrigating green spaces. They appreciated that this would slow the drain on dams. Like with PRW, customers agreed that another benefit of this option was that it reduced the discharge of wastewater to the ocean although this was not generally considered until prompted.
- **Cons:** The high cost to build and the subsequent impact on bills was seen as a major drawback. In their initial evaluation of this option, many customers had not considered the cost of needing to build a new network to deliver this water (given that for health reasons it could not be mixed with potable water). This realisation prompted many to suggest that this option would only be able to achieve modest gains and could not be relied upon as a sole solution to the water resilience challenge. Some also talked about the existing system where recycled water is delivered to some homes in Greater Sydney through purple taps. They felt the purple tap system should be mandated in all new developments and with developers contributing to the cost. As with Desalination and PRW, the environmental impact associated with the energy use and disposal of waste materials was a concern for customers when considering this option.

Harvested stormwater for non-drinking purposes.

For many customers, harvested stormwater for non-drinking purposes feels like a good idea that should be pursued. Underpinning this sentiment is the view that when it rains, significant amounts of water is lost as stormwater. Customers often view this as a missed opportunity.

- **Pros:** The main pro for customers when evaluating this option, is that it is making use of a resource that is currently un-used. The low energy requirements and operating costs are also valued by customers although few were aware of this prior to the customer forums.
- **Cons:** Many customers were previously unaware of the high costs associated with building stormwater harvesting infrastructure and once prompted with potential bill impacts this was seen as a definite drawback. The reliance on rainfall was also a clear weakness as was the fact only relatively small amounts of water could be stored and would deplete quickly. Customers had also not previously considered the impact that variable stormwater quality would have and how this could make the water difficult to treat. This was viewed by many as a drawback, albeit a secondary one when compared to those mentioned above.

7.4 Ranking Investment Considerations

After looking at the different options available, customers were asked what considerations are most important to them when it comes to making decisions about new water supply infrastructure. Customers noted that the overall impact on the environment was the most important consideration.

Ensuring that the infrastructure does not depend on rainfall was the next most important consideration. Public health was also high on the list, although some customers mentioned that they did not rank this as the most important as it was considered non-negotiable, something they would expect and the obvious first choice.

Overall, the region's water supply and water health are considered essential. Given this, the energy used and the impact on local communities were ranked lower although customers stressed that these were still important and could not be discounted by Sydney Water.

What was clear throughout the conversations was that Sydney Water

Table 8 Prioritising Water Supply Resilience Investment Considerations

	Investment Consideration
More important	What is the environmental impact
	Is the option independent of rainfall
	What is the cost to operate
	What impact is there on public health
	What is the cost to build
Least likely to be identified as most important	How much energy is needed
	What is the impact on local communities

7.5 Key sub-groups

First Nations Customers

There was a high degree of consistency across First Nations customers with regards to how they would reduce their daily water usage. Methods for reducing their usage that they felt were feasible included having shorter showers, being more conscious of how long they run their taps for, and reducing the number of machine-washing cycles they need.

There was a general consensus regarding the sustainability of behaviour change when it comes to reducing their water use in drought. Nearly all participants indicated that around one month is the most they could sustain extensive water saving behaviours for. Although a few said it was more likely that they could sustain a maximum of a few weeks only. Offering cost reductions or benefits in return for saving water was suggested as a way to encourage saving water.

First Nations customers differed little in their views when compared to the general population when it comes to water supply options with the environmental impact being the key consideration when making investment decisions.

> "I think we can adapt really well so I think we could reduce usage if we needed to and were told to."
>
> **First Nations customer |** Focus group

> "I want to say a month, but it's like Covid. No one thought they could do that, so if we had to do it longer then we would."
>
> **First Nations customer |** Focus group

CALD Customers

Customers from a CALD background generally felt that reducing their daily usage to 100L per person per day was doable but they only for a short period of time (1-2 months maximum). Many understand the importance of undertaking water saving measures during severe drought and would comply with Sydney Water recommendations when this is needed. Most would sustain changes in behaviour when needed however they also thought they would revert to a more relaxed stance once dam levels are replenished.

There was also no consensus amongst CALD customers as to their preferred infrastructure options. Like with the general population they could see both advantages and disadvantages with both methods.

'Environmental impact' and 'cost to build' were seen as the most important considerations, while the impact on local communities was seen as the least important consideration as many thought such infrastructure would not be installed around residential areas. Some mentioned that if new water supplies were installed in residential areas, then the impact on local communities would become more important.

> "I am happy to save water usage so that the water resources can be used elsewhere, such as in agriculture. By supporting crop growth, we not only help sustain the food supply but also potentially prevent grocery prices from skyrocketing."
>
> **Cantonese-speaking customer |** Focus group

Business Customers

Business customers were asked questions relating to the effects of water supply and demand on their businesses, not personal use. They mentioned that low dam levels and water restrictions would have a significant impact on their businesses, e.g.:

- A window-cleaning business that requires water permits to use water would be unable to operate.
- A trucking company would be unable to wash their fleet of trucks.

- A restaurant wouldn't be able to wash dishes, pots, tables.
- A club house would be unable to clean urinals and toilets, any restaurant 'vessels', boat owners unable to hose down.

Most felt their businesses would be unable to survive for long if they had to reduce water usage by 1/3. They agreed that the best option for them if they had to reduce daily water usage would be to try to use recycled water; although they weren't sure how much of an option this really is.

Business customers suggested that Sydney Water should prioritise options that are 'independent of rainfall'. In contrast to residential customers, the 'cost to build' was the least important consideration for business customers. They argued that ensuring the resilience of the water supply is not optional and Sydney Water and they need to make the appropriate investments to safeguard the region's supply.

> "We want to be able to utilise recycled water. It's already generated, it's just not distributed everywhere."

Service Critical High Business Customer | In-depth interview.

> "It makes me mad that the 4.2% increase implies they are investing in better techniques to supply water and then you find you're being required to save water despite the money you've spent."

Service Critical High Business Customer | In-depth interview.

> "The cost to build is irrelevant; we need water to live. Also, these are all important considerations, but if you only consider the environmental impact, then people may or may not have water to live."

Service Critical High Business Customer | In-depth interview.

Value Makers

Like residential customers, Value Makers felt they could reduce daily water usage if they had to. It isn't necessarily easy, but it is doable. Suggestions for reducing daily water usage included:

- Change rules around water pressure.
- Put parameters around businesses that are big users.
- Install more rainwater tanks.
- Audit usage of people and businesses, for accountability.
- Installing plans where people pay in intervals that can be monitored.
- Setting household caps, that are incentivised if not surpassed, with discounts or a point system.
- Encouraging local councils to do more stormwater harvesting.

There was no real agreement about who should pay for big infrastructure projects. Some felt everyone in the community should. Others felt the government should, as part of it service provision to the community.

When considering water supply options, value makers agreed that the 'cost to build' was the least important consideration, there was no consensus about the most important, with each participant having a different view or perspective.

> "I think the costs should be shared among customers and maybe some community initiatives and events to help fund these, supported by councils".

Value Maker | In-depth interview

> "Businesses should be audited to see how they can save water and what they can do better. They may not be aware of it or care, and accountability would help. They could sign up for a plan for x dollars and then see when they exceed it.

Value Maker | In-depth interview

> "We need another dam. The cost is high, but it would be a long-term solution. A greater deal of filtration and sanitation, it's more cost effective and takes less effort/power to clean the water."

Value Maker | In-depth interview

> "I feel like we need to focus on more innovative and more reliable options as there might be prolonged droughts now and into the future."

Value Maker | In-depth interview

Customers living with a disability.

Similar to other topics, the views of customers living with a disability were aligned with other residential customers regarding water supply resilience. Taking fewer showers, flushing the toilet less often, washing clothes and dishes less often were among the top-of-mind ways they felt they could reduce usage. They also believed there are clever and simple ways that water usage could be optimised, for instance by capturing 'waste' water while having a shower or running the tap to then use this for other purposes in and around the house.

Responses were mixed and there was no consensus regarding Sydney Water's considerations for decision-making, as most felt they didn't know enough to determine how decisions should be made. Some participants felt it was important to be rainfall independent, whereas others felt rainfall could be relied upon, but should be used more efficiently with less wastage. These customers were concerned about the impact of climate variability, particularly when there are periods of high rainfall (which may cause dams to overflow) as well as prolonged droughts – They questioned whether the currently water supply infrastructure is designed or engineered sufficiently to account for this so that less water is wasted and the water we do have is used more responsibly.

For the most part, participants were focused on the need for long-term thinking when it comes to making investment decisions. This includes considering the environmental impact of decisions and the impact on local communities. The cost to operate and the amount of energy needed was also

seen as a highly important consideration. However, they suggested that as the costs to build new supplies are often a one-off expense, these costs are worth it if it means an improvement in the future.

> "Dam sounds like the best option, even in drought they can sustain the water. Even though it is reliant on rainfall, rain is free, and it will come eventually."

Customer living with a disability | In-depth interview.

> "Because of the lack of rain in summer and fires, we need something less dependent on rain."

Customer living with a disability | In-depth interview.

> "It should be the running cost, and the energy it uses to make sure you are using the public money the right way."

Customer living with a disability | In-depth interview.

> "When it really rains, there is a lot of rain. Recycled for non-drinking is great, but it requires two systems so maybe it's a good option for new houses being built and it won't be too much of an additional cost."

Customer living with a disability | In-depth interview.

Councils and Government

Councils and governments expressed that richer vs poorer suburbs and apartments vs houses would be an unspoken underlying issue regarding water usage, with poorer suburbs finding it harder to reduce usage and the more affluent perhaps not caring as much and not reducing their water consumption.

As mentioned in other topics, council and government stakeholders want more collaboration with Sydney Water on plans to promote saving water, plans to educate the community, and the communications strategy. Council stakeholders regularly pointed out that customers often make the mistake of thinking their council is responsible for anything to do with water or wastewater. They therefor wanted to ensure that both parties were on the same page and deliver synergistic non-conflicting messages around the issue,

Some raised the point that reducing water usage can end up being a false economy; for example, if councils don't water gardens, they might end up being faced with much greater costs when it comes to replanting and bringing green spaced back to life.

Council and government stakeholders often expressed that improving efficiencies is an important priority for Sydney Water that should not be forgotten e.g., fixing leaks, energy efficient appliances, and using recycled water for irrigation.

There was a general acknowledgement that investing in water-saving infrastructure is costly and these stakeholders appeared more concerned about his than other customer groups. They also suggested that community buy-in is an important consideration in choosing which infrastructure to pursue.

Finally, like other sub-groups, protecting the environment was also of paramount importance for these stakeholders.

> "I've worked a lot in environmental roles and for me protecting the environment should be a high priority".
>
> **Local Government representative |** In-depth interview

> "I'm looking at all the options and I can't pick one as more important. We need a mix of them all and not rely on one to be the saviour."
>
> **Local Government representative |** In-depth interview

> "Desal would be the easiest to sell to the public, though it costs more to produce, as long as renewable energy sources are used."
>
> **Local Government representative |** In-depth interview

Major Developers

It was generally felt by major developers that low dam levels and water restrictions would have relatively limited impact on their business operations other than potentially limiting the use of water for dust suppression and landscape maintenance.

Most supported the use of water restrictions to reduce usage across the community. Major Developers were typical strong supporters of purified recycled water being used within the network to drive greater water security.

For major developers the cost to build and operate were the two biggest considerations relating to water supply resilience. The impact on local communities was the least important consideration given the overall benefit that investments could deliver to Greater Sydney.

> "Water restrictions have an important role to play during drought. I feel like the community, during the last drought, just accepted them."
>
> **Major Developer |** In-depth interview

> "I think the most important question is the cost to build. If that question had of been asked we would never have built a desal plant. It's a white elephant. We should be investing in purified recycled water."
>
> **Major Developer |** In-depth interview

> "At the end of the day we have to disregard the impact on local communities given the benefit is for all of Sydney."
>
> **Major Developer |** In-depth interview

8 What we heard: customer willingness to pay (WTP)

DCE results show that the size of customer bills and any potential increase to these has the greatest impact on customer choices and whether they derive value from what Sydney Water delivers. The next most important attribute is waterway health (presented in the DCE as the number of urban waterways that can be improved), followed by water supply resilience (presented as the length of time without severe water restrictions in the DCE). Providing recycled water for the irrigation of cool green spaces was the fourth most important attribute in the model.

The three least influential attributes in driving customer preference was the time to replace water meters with digital smart meters, the chance of low water pressure and the chance of wastewater overflows. While these are the headline outcomes of the research understanding where these findings come from is important. The following sections of the report talk about this in detail and there is also a technical report that has been provided by CaPPRe which can be found in the appendices.

A dashboard accompanies this report, which can assist with the visualisation of the model results and allows users to perform 'what if' scenarios based on different combinations of water service attribute levels.

8.1 Context

To help with setting prices that are fair and efficient, Sydney Water needs to understand and determine customer preferences and WTP for different water service investment options amongst Greater Sydney residents.

A Discrete Choice Experiment (DCE)[5] was used to understand what values customers hold for improvements (or reductions) in the levels of each attribute relative to Sydney Water's current levels of service.

A key benefit of using a DCE is that it allows researchers to elicit customer preferences for specific water service attributes. Attribute selection for this experiment was driven by earlier phases of this research where customers told us their top priorities for Sydney Water over ten next 10 years and ranked these in order of importance.

[5] Also known as choice modelling

The key questions to be answered through the research are:

Figure 17 Key questions for the DCE.

Relative feature preference: What are the preferences of Sydney Water's customers for different water service options.

Willingness to Pay: What is the total willingness to pay (total value) for different water service options?

Secondary question:

Segmentation: How are decision makers segmented? Does WTP vary between certain groups of customers?

A Discrete Choice Experiment (DCE) is a methodological approach to studying choice behaviour which recognises that understanding customer preferences (be they individuals, households, firms, etc.) should not be limited to the choices they make in real markets.

Incorporating community preferences into real-world outcomes is known as Community Value Mapping (CVM). We refer to these types of studies as CVM because the process involves mapping attributes or features of an item – in this case, Sydney Water's water service. The value framework is established using trade-off techniques (such as Discrete Choice Experiments (DCEs)) which directly measure the relative value of specific components of an item. Output is illustrated visually, using an interactive dashboard tool.

Figure 18.18 Discrete Choice Experiments for Community Preference Mapping.

The experiment involved presenting a number of different alternatives to a sample of customers and asking them to choose their preferred alternative. Each alternative was made up of a package

of service attributes, with particular levels specified. Survey participants were informed that the alternatives represented potential options being considered by Sydney Water and, if selected, the changes would be delivered over the next 10 years.

Customers were also informed how much their quarterly water bill would be under each alternative, relative to their current bill (or in the case of renters, how much their monthly rental payment would change under each alternative). Including a 'price attribute' enabled estimates to be made for the dollar changes in customer wellbeing under the different alternatives, and for changes in any single attribute.

This information is critical for Sydney Water to be able to make informed decisions about its pricing strategies, service offerings, and its allocation of long-term capital and investment in water and wastewater infrastructure.

By understanding customers' WTP, Sydney Water can ensure that their proposed service offerings align to the value preferences of customers, and thus be consistent with the long-term interests of customers.

8.2 Applying WTP research to decision making

The results of this WTP study provides insight into the preferences of customers, including which attributes of Sydney Water's service are most important for customers and should be prioritised over the next 5 to 10 years. The preference information collected through the DCE was used to develop a statistically valid model that explained the strength of each attribute in influencing the choice of alternative outcomes. The output of the model was used to develop an online decision support system (the dashboard), which allows users to simulate different hypothetical packages of service offerings. That is, the output from the DCE model is not limited to valuing just the alternatives that were presented to survey participants. Having established the strength of trade-offs between each attribute, it is possible to assess customer WTP for any combination of attributes and levels.

The respective WTP associated with each package of service offerings can then be used to inform Sydney Water's business cases and can be incorporated into cost-benefit analyses (CBA) to determine if the amount customers are WTP is sufficient to justify the cost of delivering the specified service improvements.

The WTP results presented in this section and the dashboard can be used by Sydney Water to inform business planning. There are a number of ways in which the results could be used:

- The WTP estimates may help to support the business case for bill increases for segments of the customer base who are demonstrably WTP more for a particular service or new service offering (and where that WTP exceeds the cost of delivery).
- To test whether the service standards in Sydney Water' s operating license are in line with customer expectations and their value preferences.
- To help design communication campaigns and messaging around 'expectations management' in circumstances where customers have indicated a preference for a new

service, but where their stated WTP for that service does not cover the cost to Sydney Water to deliver the service.

The DCE provides insights into the attributes that are most influential in driving the choice of alternatives presented in the experiment. Changes to attributes with higher importance will, all else being equal, influence WTP more so than changes to attributes with lower importance.

Maximising WTP is only one element of the strategic decision and is not sufficient for decision-making. The cost and strategic implications of delivering the attributes with the highest importance may well exceed customer WTP.

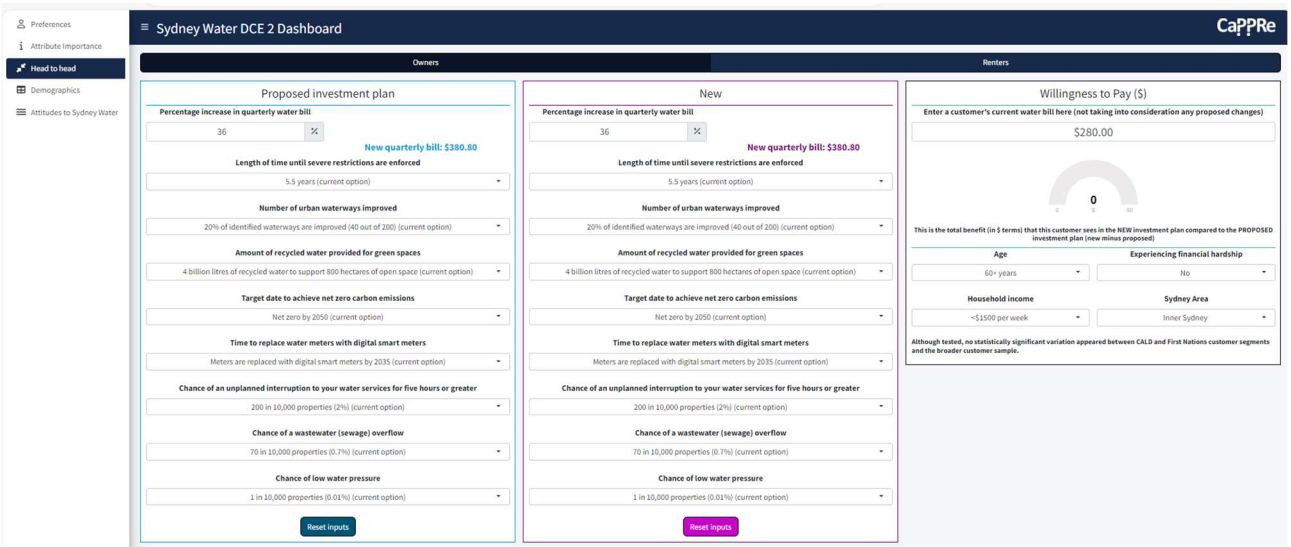
What the dashboard can and should be used for

The dashboard supports the visualisation of the model results and allows users to perform 'what if' scenarios based on different combinations of water service attribute levels.

Specifically, users can manipulate the levels of the water service attributes to observe how they impact the predicted WTP per Greater Sydney resident (**Error! Reference source not found.**). Users are also able to observe the WTP values for different types of Greater Sydney residents using the 'segment split' tab, and make head-to-head comparisons of different service packages for particular groups of residents using the 'head-to-head' tab.

In addition to DCE model results, some summary statistics are provided in other tabs of the dashboard. In the "Demographics" tab, users can view respondents' demographic details, and the "Study background" tab explains some of the key methodological steps taken to complete this study.

Figure 19 Screenshot of dashboard.



Preferences Tab

The preferences tab shows the WTP values for both the owners and renters models. WTP values can be illustrated on aggregate or split by particular segments.

For both owners and renters, the aggregate WTP values represent a weighted average of all segment WTP values. Each segment's WTP is weighted by sample size and, where applicable, ABS data. The ABS variables available for weighting related to household tenure, household income and geographical location. Sample data was used for weighting by age and financial hardship.

The WTP represents the additional value, in dollar terms, of the specified water service investment plan over the current/proposed investment plan (which includes the proposed 36% bill increase for owners, or the $35 monthly rent increase for renters) and holding cost constant across plans.

The 'split by segment' tab allows users to select which type of resident they wish to investigate WTP for and can select the demographic variables of their choice to reflect this. Only demographic variables which significantly predicted class assignment in the Latent Class Model are included in the dashboard segments tab.

Head-to-Head Comparison

Users can configure both the proposed investment plan and a hypothetical new plan for each segment. The WTP value represents the total perceived benefit, in dollar terms, of the "New" compared to the "Proposed investment plan". This value is quarterly for owners and monthly for renters.

For owners, users can configure hypothetical increases to a pre-specified current quarterly water bill. The current quarterly water bill must be between $20 and $1950 as these were the values found in the sample. The hypothetical bill increases must fall between 21% and 57% as this was the range tested in the experiment.

For renters, users are not able to alter the cost of their current bill since these residents do not pay a quarterly water bill. Users can specify an increase to the monthly rent for the hypothetical alternatives. This increase must fall between $20 and $57.50 as this was the range tested in the experiment.

8.3 Study Methodology

Study Design

Discrete Choice Experiments (DCEs) are a methodological approach to studying choice behaviour. It recognises that understanding customers' preferences should not be limited to choosing between current service offerings. Instead, there is scope to test stated preferences and demand for new, hypothetical services that are not already 'in market'.

Why use a DCE?

Every year people make thousands of choices based on their individual preferences and value frameworks. More complex decisions involve trading off different attributes at the same time. In DCEs, the importance individuals place on each attribute and how that impacts decision making is determined via experimental design and modelling. Unlike other market research techniques, accuracy is not reliant on participants understanding how they trade off different attributes to arrive at a decision.

DCEs were first developed in the 1930s allowing for comparisons of two alternatives, and later extended to multinomial choices in the 1980s (Thurstone et al, 1931, Louviere et al, 1982; Louviere et al, 1983). DCEs are now used by many fields to understand and model the trade-offs and preferences revealed by the choices that people make.

The purpose behind conducting experiments is to determine the independent influence of different attributes on some observed outcome. In DCEs this is the influence of the design attributes upon the choices that are observed to be made by sampled respondents undertaking the experiment.

DCE vs. Contingent Valuation

Prior to the popularity of DCEs, common methods to measure preferences included descriptive statistical analysis, rating scales, time trade-off, and specifically, contingent valuation used to calculate WTP. The previous Sydney Water pricing study employed a combination of contingent valuation methods and DCEs to evaluate Greater Sydney residents' preferences for five priority areas.

Contingent valuation provides an approximation of WTP by directly asking respondents to state the most they are willing to pay for a benefit. However, these methods are less statistically rigorous than DCE methods, limiting the depth of preference analysis. DCEs have the advantage of allowing researchers to understand and model the trade-offs and attribute-specific preferences revealed by the choices that people make – a considerable advantage over the contingent valuation method (Clark et al., 2014). Researchers can identify the contribution of each attribute to overall WTP, as well as the relative importance of each attribute. In addition to scenarios aligned with real markets, DCEs allow for investigation of levels of attributes that do not exist in real markets (Lancsar and Louviere., 2008).

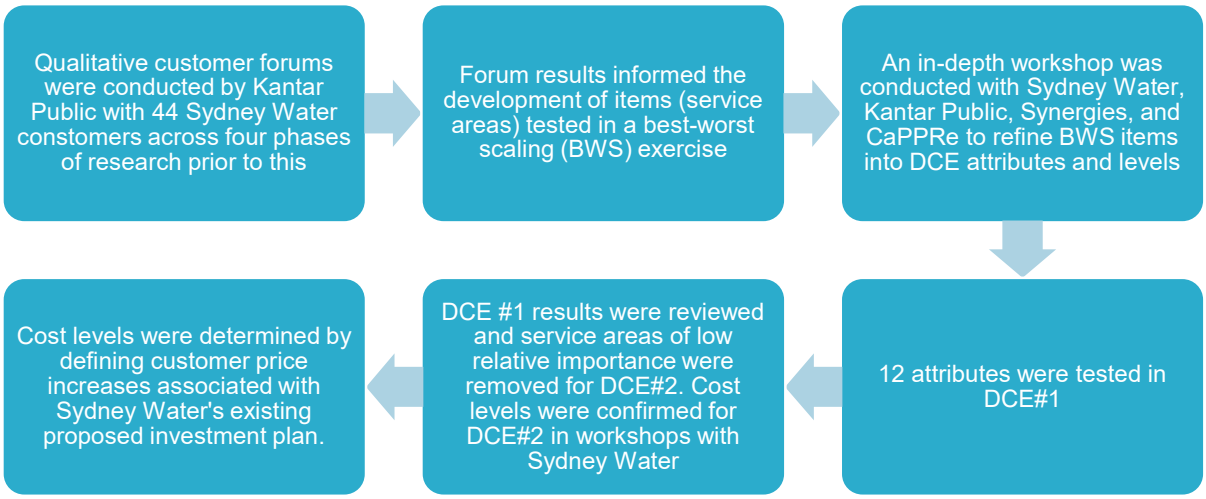
The current study expands on the work of Sydney Water's previous pricing study by incorporating all investment areas into one DCE and evaluating how Greater Sydney resident's trade-off between potential areas for investment when faced with competing alternatives.

A preliminary DCE was also conducted in Phase 1 of the Community Engagement Program (known as DCE#1). The current DCE (DCE#2) builds on its predecessor by incorporating more accurate cost ranges, better reflective of likely cost increases to customers, as well as building in existing costs to the status quo alternative. That is, compared to DCE#1, where the status quo option represented a $0 increase to customers' bills, the status quo option in DCE#2 was associated with a 36% increase to customers' bills.

DCE attributes for Sydney Water survey

The attributes and levels used in the DCE were derived through an iterative methodological process. The development of attributes and levels included in this DCE have been part of a much larger body of research conducted b Kantar Public. A brief overview of the process can be found below.

Figure 20 Overview of the DCE process.



The project team developed and refined between three and six realistic levels for each attribute to include in the DCE design. The final attributes used in the DCE were:

10. Cost (Owners: increase to quarterly water bill; Renters: Increase to monthly rent).
11. How long our water supplies will last before severe restrictions are enforced.
12. Number of urban waterways improved.
13. Amount of recycled water provided for green spaces.
14. Target date to achieve net zero carbon emissions.
15. Time to replace water meters with digital smart meters.
16. Chance of an unplanned interruption to a customer's water service for five hours or greater.
17. Chance of a wastewater (sewage) overflow.
18. Chance of low pressure.

Descriptions for each of the final attributes used in the DCE, together with the range of levels tested and the current levels for each attribute (as advised by Sydney Water) are summarised in the table below. This information was provided to survey participants prior to asking them to consider alternatives in the choice experiment.

Table 9 DCE attributes and levels

DCE Attributes	Description	Levels for inclusion in the DCE
How long our water supplies will last before severe restrictions are enforced	The length of time Sydney Water will be able to provide water to Greater Sydney residents based on available water supply in a severe drought until severe restrictions (approximately 100 litres per person per day) are enforced.	4 years 5.5 years 8 years

	The last two droughts have shown that our water services are highly vulnerable to a lack of rainfall. We don't know how intense the next drought will be or how long it will last. In the last drought we were in water restrictions for nearly two years compared to over six years in the case of the Millennium drought. If our water supply reaches critical levels in a severe drought, we would need to restrict the amount of water people use. Severe restrictions represent water consumption of around 100 litres per person per day and would be more severe than Greater Sydney has ever experienced in previous droughts. Sydney Water can extend the time available now by building more supplies like desalination and purified recycled water, that don't rely on rainwater.	
Number of urban waterways improved	The proportion of identified urban waterway sites that will be improved. Urban waterways provide habitats for plants and animals and places for nature to flourish. Waterways can support recreation like swimming, boating and diving, and they can provide places for people to see and enjoy nature and the outside environment. The health condition of waterways can affect their ability to support nature, recreation, and enjoyment. Across Greater Sydney, Sydney Water has identified 200 waterway sites which could be improved through investment to reduce litter and pollution from wastewater, to improve water quality, improve riverbanks and plant life, and make waterways look more natural and accessible.	0% identified waterways are improved (0 out of 200) 20% of identified waterways are improved (40 out of 200) 60% of identified waterways are improved (120 out of 200) 100% of identified waterways are improved (200 out of 200)
Amount of recycled water provided for green spaces	The amount of recycled water used to water new and existing public green spaces, helping to create cool, green spaces during drought. Public green spaces are things like public parks, gardens, and reserves. Recycled water is created by treating and piping wastewater and stormwater. Sydney Water currently provides one billion litres of recycled water each year for irrigating about 200 hectares of green spaces (equivalent to 270 football fields)	1 billion litres of recycled water to support 200 hectares (equivalent to 270 football fields) 4 billion litres of recycled water to support 800 hectares of open space (equivalent to 1,070 football fields) 6.5 billion litres of recycled water supplied to support 1,300 hectares of open space (equivalent to 1,730 football fields)
Target date to achieve net zero carbon emissions	How soon Sydney Water will achieve net zero carbon emissions through more energy-efficient operations, greater creation and use of renewable energy and carbon offsetting projects (i.e., new forests).	net zero by 2050

	In 2021-22 Sydney Water emitted a total of 363,300 tonnes of carbon emissions. This is equivalent to the emissions produced by 220,000 petrol cars each year.	(equivalent to taking 80,000 petrol cars of the road each year) net zero by 2040 (equivalent to taking 130,000 petrol cars off the road each year) net zero by 2030 (equivalent to taking 220,000 petrol cars off the road each year)
Time to replace water meters with digital smart meters	How long it takes for customers' water meters to be replaced with digital smart meters. Digital smart meters use new technology to automatically send hourly meter readings to both you and Sydney Water, so you can have more detailed information about your water use compared to traditional meters that are read once per quarter. Digital meters can be linked to an app or website allowing customers to see their water usage in real time and use water more efficiently, especially in times of drought.	meters are replaced with digital smart meters by 2040 meters are replaced with digital smart meters by 2035 meters are replaced with digital smart meters by 2030
Chance of an unplanned interruption to your water service for 5 hours or greater	Chance of experiencing an unplanned interruption to your water service each year. When leaks or breaks occur on Sydney Water's water network, sometimes the water needs to be shut off to repair the pipe. This can mean that customers who are connected to the pipe lose their water service for five hours or more until the repair is complete and the water is turned back on. When this occurs and customers have less than 48 hours notice, it's called an unplanned interruption. Each time a customer experiences an unplanned interruption to their water supply that lasts for five hours or more they receive a rebate of $40 off their water bill. If a customer experiences 3 or more unplanned interruptions that last for more than 1 hour in one 12 month period they receive an additional full refund of their water service charge.	300 in 10,000 properties (3%) 200 in 10,000 properties (2%) 100 in 10,000 properties (1%)
Chance of a wastewater (sewage) overflow	Chance of experiencing a wastewater (sewage) overflow on your property in dry weather each year. In dry weather, customers can experience an overflow of wastewater onto their property (either inside the house or in the garden) due to a blockage in Sydney Water's wastewater pipes. Blockages are caused by tree roots entering wastewater pipes or build up of oil or grease, or other objects such as wet wipes, inside the pipes.	100 in 10,000 properties (1%) 70 in 10,000 properties (0.7%) 40 in 10,000 properties (0.4%)

	Sydney Water reduces the chance of this happening by inspecting wastewater pipes and clearing blockages. Customers who experience a wastewater overflow in dry weather receive rebates on their bills ($75 for first two overflow events in a year). In addition, if a customer experiences three or more overflows in a year they are refunded their entire wastewater service charge.	
Chance of low water pressure	Chance of experiencing low water pressure on your property each year. Water pressure in the system can fall when many people are using water at the same time or when a pipe breaks. In areas with lower pressure, this may result in a slow flow of water from your taps. You may notice that: • it takes a few minutes to fill a bucket • there is only a trickle of water from a second-floor taps/shower • you are unable to use water in more than one place in the home (e.g., not being able to shower while using the washing machine). Currently there are a small number of properties (a maximum of 200) in some areas of Sydney that regularly experience low water pressure. When development occurs in existing urban areas, more customers connect to the existing water network which can result in more customers regularly experiencing low water pressure. Customers who experience low water pressure receive a rebate of $40 on their bills for up to one event per quarter (a maximum of $160 a year).	2 in 10,000 properties (0.02%) 1 in 10,000 properties (0.01%) 0 in 10,000 properties (0%)
Cost increase	Water Bill Payers: The amount, on average, that your quarterly water bill will increase by, compared to your current water bill. Rent Payers: The amount, on average, that your monthly rent will increase by, compared to your current rent, to cover changes to your water service. Costs include charges for water and wastewater supply, and service charges. Remember that the cost increase will be applied gradually over the next 10 years.	Owners: +21%; +29%; +36%; +43%; +50%; +57% Renters: +$20.00; +$27.50; +$35.00; + $42.50;+$50.00; +$57.50

DCE framing

Prior to completing the DCE, customers were provided a description of each attribute. Customers were told that their responses would be used in decision making about proposed changes to Sydney Water services over the next 10 years. Importantly, customers were informed that Sydney

Water would be making some changes to its service over the next 10 years, and those changes would result in a 36% average increase to customers' water bills. This description explained what areas of investment this 36% increase would cover and made clear that the attributes levels explored in the DCE were in addition to this.

Participants were also reminded to consider their available income when choosing alternatives with higher prices compared to the current. The payment vehicle in the DCE was presented as an increase to respondents' total quarterly water bill for bill payers (i.e., homeowners) or to respondents' monthly rent for non-homeowners (i.e., renters and those in social housing).

Experimental design

The experimental design followed good practice guidelines and the combinations of levels presented in the scenarios were designed using D-efficient design structures (Rose and Bliemer, 2009) in NGene. Thorough checks on customer's understanding were performed both before and after the DCE to determine sample validity.

In this study, WTP was calculated as the change between the current/proposed Sydney Water investment plan (status quo) and a hypothetical new Sydney Water investment plan. The experimental design consisted of 168 choice tasks (scenarios), split up into 24 blocks, so that each customer was presented with 7 scenarios. In each scenario, customers were faced with three options: Stay with Sydney Water's current investment plan or choose a hypothetical Plan A or Plan B.

Attributes in the hypothetical new investment plans (A and B) varied slightly, whereas the status quo (base case) in the experiment was fixed across scenarios, representing Sydney Water's current investment plan (including a 36% increase to customers' water bills).

Example choice set

Figure 21 An example of one choice set from the experiment below.

Your most recent water bill was $ 200 for the quarter (every 3 months).

Scenario 1 of 7: Please review the following options and choose the water service investment option you would prefer.

When answering the question, please keep in mind your income and the savings you have available after living expenses and paying all your bills. If you think that you cannot afford either of the hypothetical options on screen, please select the 'Current Investment Plan' option.

Attribute	Investment Option A	Investment Option B	Current Investment Plan
Time without severe water restrictions	4 years	4 years	5.5 years
Number of urban waterways improved	100% improved (200 out of 200)	60% improved (120 out of 200)	20% improved (40 out of 200)
Amount of recycled water provided for green spaces	4b 4 billion litres of recycled water to support 800 hectares (equivalent to 1,070 football fields)	1b 1 billion litres of recycled water to support 200 hectares (equivalent to 270 football fields)	4b 4 billion litres of recycled water to support 800 hectares (equivalent to 1,070 football fields)
Target date to achieve net zero carbon emissions	2030 net zero by 2030 (equivalent to taking 220,000 petrol cars off the road each year)	2040 net zero by 2040 (equivalent to taking 130,000 petrol cars off the road each year)	2050 net zero by 2050 (equivalent to taking 80,000 petrol cars off the road each year)
Time to replace water meters with digital smart meters	2030 Digital smart meters by 2030	2030 Digital smart meters by 2030	2035 Digital smart meters by 2035
Chance of an unplanned interruption to your water service for five hours or greater	2% 200 in 10,000 properties	2% 200 in 10,000 properties	2% 200 in 10,000 properties
Chance of a wastewater (sewage) overflow	0.7% 70 in 10,000 properties	0.4% 40 in 10,000 properties	0.7% 70 in 10,000 properties
Chance of low water pressure	0.01% 1 in 10,000 properties	0.01% 1 in 10,000 properties	0.01% 1 in 10,000 properties
Increase to quarterly water bill	⬆ $114.0	⬆ $100.0	⬆ $72.0
I would choose...	○	○	○

Sampling and survey administration

The online survey included questions around participants' demographic background, preferences for different attributes of a hypothetical new water service (DCE), and background questions on their perceived water use and experience with Sydney Water.

The survey was thoroughly tested internally. This incorporated an extensive review and sign off period, involving multiple experts, internal stakeholders, and senior managers and pilot-tested prior to launching to the full sample.

The online survey was programmed and hosted by Lightspeed Research (LSR), who were also responsible for recruiting participants to complete the online survey.

Greater Sydney Residents over 18 years of age who were Australian citizens or permanent residents, and accessed the online survey via a desktop computer, laptop, or tablet (required to complete the DCE) were eligible to complete the survey.

Data was sampled for two groups of Greater Sydney residents: Homeowners (those who pay a quarterly water bill), and renters (those who see a commensurate increase in monthly rent to account for increases in their water services; hereafter referred to as 'renters'), including those in social housing.

Fieldwork was completed between August and September 2023. The total sample was 4,474 and the cleaned sample used for modelling was 4,003 respondents.

To bolster the reliability and validity of stated preference studies, it was essential that customers understood the choice task at hand and were reminded that the results would be consequential and were encouraged to respond in a way that is aligned with their real market behaviour.

Weighting and inflation

It is worth noting that the raw data was not weighted. When data are obtained at the level of individual respondents, it is not uncommon for sampling weights designed to make the sample representative of the target population be applied to each observation. Evidence suggests however that such weights are not appropriate to use in estimation or hypothesis testing but should be applied after in market simulation (see e.g., McFadden et al., 2006; McFadden, 2022). That is, should the data not accurately reflect the population is it purported to represent, weights may be applied after the fact, and not during or before statistical estimation (modelling).

Similar logic should be applied to forecasting calculations that consider inflation. WTP dollars are considered to hold the same value over time. That is, a dollar today will be worth the same in 5 years. If there are variables that are expected to change over time, such as one's income or inflationary pressures, WTP values should be adjusted according to such expectations. Since future inflation is not known, the WTP dollars in this study should be treated as the nominal ('baseline') value. Adjustments to the baseline WTP values can be applied in cost-benefit analyses or any future financial forecasting.

Some weighting has been applied to the WTP values in the dashboard (post-model estimation) to improve interpretability of results by age, income, location, and self-reported financial hardship. The dashboard has separate tabs, which calculate the total willingness-to-pay (WTP) for different

segments of the sample. Only segments which significantly predicted choice in the model were included as segments in the dashboard.

Data cleaning

To bolster the reliability and validity of stated preference studies, it is essential that respondents understand the choice task at hand, believe the results will be consequential, and are encouraged to respond in a way that is aligned with their real market behaviour. The following section outlines the combination of data cleaning procedures, checking for understanding, and bias mitigation techniques that were adhered to in the current study, in line with best practice recommendations (Fifer et al., 2014; Johnston et al., 2017), and outlined in previous reviews of water utilities submissions to IPART (Gillespie Economics, 2020).

After receiving the final clean dataset from LSR (n=4,474), CaPPRe applied additional cleaning rules to reduce bias and enhance reliability of the modelling. A total of 471 respondents were removed from the data, taking the final modelling sample to 4,003. The criteria below were used to clean the data:

The cleaning rules below were used to clean the data collected:

Standard survey cleaning:

- Open text cleaning: Data cleaning based on nonsensical open text responses.
- Incompletes: Participants who did not complete the online survey in full.
- Attention checks: Participants who answered the attention check question incorrectly.
- Duplicate IP Addresses/repeats: Those with duplicate IP addresses and repeated attempts.
- Survey duration: Those who completed the survey too fast.

DCE/WTP-specific cleaning:

- Straight-lining for option A or B in the DCE: Respondents who chose option A or Option B exclusively were excluded.
- Low understanding: Participants who had a self-reported understanding of DCE <6 (scale 1-10).
- Income: If a person's income (household for owners, personal for renters) was less than the maximum amount agreed to in the DCE, respondents were excluded from analysis.
- Certainty Calibrations: Asking respondents how certain they were they could afford such an increase in service price. <5 certain were removed.
- Cheap talk reminders: Asking respondents to consider their income before agreeing to service price increases in the DCE, and reminding them their responses will influence real decisions

Mitigating hypothetical bias: Capacity to pay vs. WTP.

Stated preference surveys have been criticised in the past for not producing valid measures of WTP because of the potential for survey participants to signal a desire for more service without the *capacity* to pay for it in real life (known as 'hypothetical bias'; where people agree to one thing in a hypothetical experiment but do something else in real life; Fifer et al., 2014).

This study assessed both a person's WTP and capacity to pay for water services. That is, the WTP study assessed people's demand for a product at a certain price point, *given their financial constraints*. Thus, a person must have the capacity to pay for a service for the WTP to be considered valid.

To ensure such validity, there are certain methodological and design techniques that can be incorporated into the survey design to reduce the impact of hypothetical bias and ensure a person's capacity to pay for goods and services included in the experiment (Fifer et al., 2014).

The current study included several techniques, including: 'cheap talk' budget reminders and consequentiality statements (asking respondents to consider their income before agreeing to service price increases in the DCE, and reminding them their responses will influence real decisions), certainty scales (asking respondents how certain they were they could afford such an increase in service price), and personal and household income tests (a person's income (I) must be greater than cost of the service price (c); (I – c) > 0; participants were excluded from analysis where I < max(c) agreed to in the DCE).

Certainty Calibration

Stated choice experiments (e.g., DCEs) have been criticised for their hypothetical nature, with claims that they are not able to explain the behaviours which are observed (or revealed) in actual markets. Certainty calibration was applied in the analysis with the aim of mitigating hypothetical bias in the DCE.

In this study, a method proposed by Beck et al. (2016) was used. Following each choice scenario, a certainty index was presented to participants, where they stated how certain they were (on a ten-point scale) that their choice would be one that they would follow through in real life (Figure 4).

Figure 22 Certainty scale used in the DCE (owners)

Based on the answers provided, a certainty threshold method was applied. If a respondent indicated that their choosing of Plan A in the DCE was greater than or equal to five out of ten on the certainty scale, that choice was identified as a certain choice. If a respondent indicated that

their choosing of Plan A was less than five out of ten on the certainty scale, that choice was treated as uncertain and re-coded as a choice for the status quo (current investment plan). Certainty thresholds have been discussed broadly in the DCE literature as a method of reducing hypothetical bias (Rose et al., 2015, Beck et al., 2016).

Limitations

The results of this WTP study provide insight into the preferences of customers, including which areas of Sydney Water's service are most important to prioritise over the next 5-10 years. Through use of the online decision support system (the dashboard) users can simulate different hypothetical business cases for potential changes to Sydney Water's service. The respective WTP associated with each business case can then be incorporated into cost-benefit analyses to determine if the cost of making such upgrades is in line with consumer's perceived monetary benefit.

Although some context can be provided around demographic characteristics of the sample, and variables which may statistically predict heterogeneity in preferences, less is known about why customers may prefer one service attribute over another. This is why it is important to take the results of the choice modelling into the broader context of the Customer Engagement Research, including qualitative research which aims to understand people's motivations behind their preferences.

This study does not provide information on potential changes to Sydney Water's service that may be similar but distinct from the described levels.

8.4 Analysis

All survey data outside of the DCE component can be viewed from the dashboard, and were summarised using descriptive statistics such that:

- The mean and standard deviation were reported for numeric variables (unless the median is specified), and
- The frequency and percentage were reported for categorical variables.

DCE analysis involves estimating utility functions for the included alternatives. Utility in this context is a term used in economics which refers to the overall benefit or well-being customers derive from services and initiatives delivered by Sydney Water. Utility is a measure of the value that a customer places on this service and its ability to improve people's lives through economic benefits, social and environmental outcomes. It reflects the subjective preferences of customers, can be both positive and negative, and can vary from person to person, and from situation to situation. Ultimately, Sydney Water is seeking to maximise customer utility from its services and investment offerings.

Using the data from the survey scenarios (the DCE component of the survey) the model estimates the parameters for each attribute level. These parameters describe the magnitude and direction of influence of each of the attribute (levels) in the choice context. The econometric methods employed recognise that preferences may vary across participants, even after controlling for observed characteristics like age and gender. The latent class models (LCM) used in this study allow for variation in these preferences and group customers based on their likeness in responses.

8.5 Results

A total of 4,003 customers were included in the final WTP models. Two separate models were estimated: One for homeowners (n=2,884; who pay a quarterly water bill), and one for renters (n=1,119; who see a commensurate increase in monthly rent to account for increases in their water services).

All sample demographic characteristics can be viewed in the dashboard.

Relative attribute importance

Relative attribute importance can also be used to identify attributes that are more likely to influence willingness to pay. For example, when considering what outcomes could be delivered, Sydney Water can use attribute importance to identify what areas are most important to its customers.

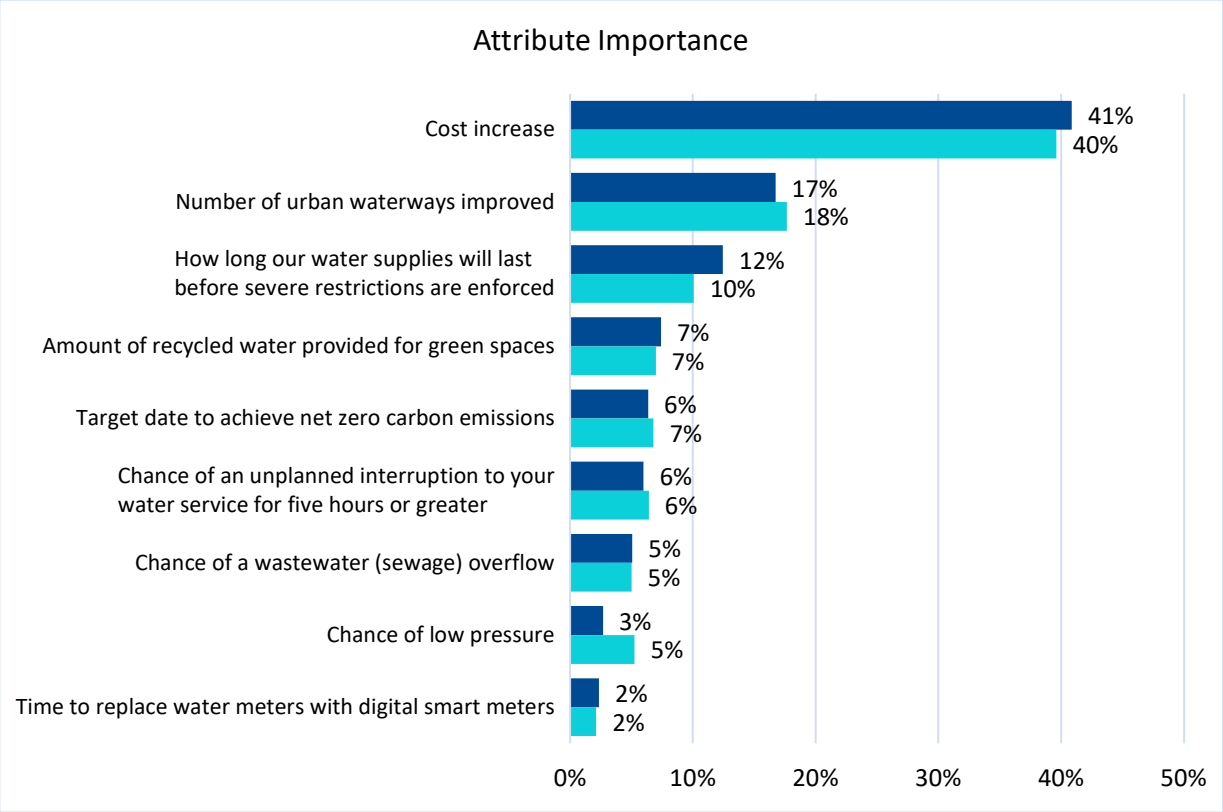
The relative importance of each attribute is calculated by finding the maximum difference in utility between each attribute's level as a percentage of the total sum of all the maximum differences. Attributes that have a greater percentage importance were more influential in driving choice in the experiment. Changes to attributes with higher attribute importance will influence willingness to pay more so than changes to attributes with lower attribute importance.

It is not entirely appropriate to compare coefficient values across classes, however, attribute importance allows for a more standardised comparison of attributes (by providing a consistent range totalling 100%), taking into account their relative influence within each class.

Attribute importance: Homeowners vs. Renters

Across homeowners and renters, cost increase was the most important attribute, followed by the number of urban waterways improved, and the length of time until severe restrictions are enforced. The three least influential attributes in driving customer utility amongst both homeowners and renters were – the time to replace water meters with digital smart meters, the chance of low water pressure and the chance of wastewater overflow.

Figure 23 Attribute importance – homeowners vs. renters.



Base: Total sample (n=4,003)

WTP for individual attributes

The DCE can also be used to estimate how much customers are WTP (on average, per household) for increases in the level of each attribute relative to current levels (or the loss in utility in dollar terms for a decrease in attribute level). The series of charts that follow demonstrate these value relationships for each attribute, when assessed by holding all other attributes constant.

Negative WTP values should be interpreted as the dollar amount that customers would be worse off if the attribute level was decreased by the specified amount. Or, equally, it can be interpreted as the amount that they would be WTP to prevent the attribute declining below current levels.

The WTP results are confined to the range of levels tested for each attribute. The values should not be extrapolated to attribute changes that exceed the levels shown in the charts. All changes are in addition to the proposed 36% increase mentioned previously.

Length of time until severe restrictions are enforced.

The last two droughts have shown that Greater Sydney's water services are highly vulnerable to a lack of rainfall. We don't know how intense the next drought will be or how long it will last. In the last drought Greater Sydney was in water restrictions for nearly two years compared to over six years in the case of the Millennium drought.

If water supply reaches critical levels in a severe drought, Sydney Water would need to restrict the amount of water people use. Severe restrictions represent water consumption of around 100 litres per person per day and would be more severe than Greater Sydney has ever experienced in previous droughts.

Sydney Water can extend the time available now by building more supplies like desalination and purified recycled water, that don't rely on rainwater. Alternatively, limiting or not investing in rainfall independent sources would likely shorten the length of time until severe restrictions are enforced.

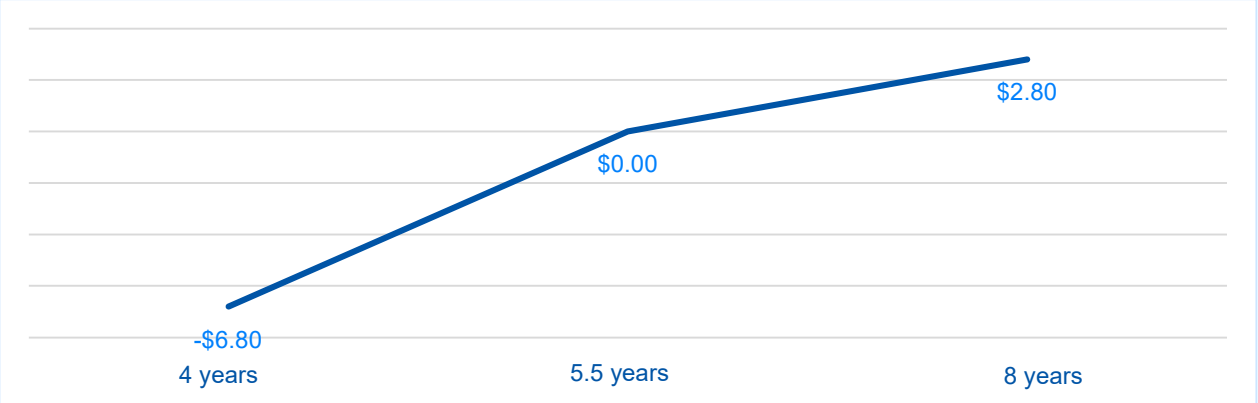
Homeowners were willing to pay $13.00 (in addition to the proposed increase) on their quarterly water/wastewater bill to lengthen the time until severe water restrictions are enforced from 5½ years to 8 years. However, there would be an expectation of a $15.10 reduction on the bill if the length of time until severe restrictions were enforced reduced from 5½ years to 4 years.

Figure 24 Homeowners' WTP quarterly bill – Length of time until severe restrictions are enforced.

Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

A similar outcome can be seen with renters who would expect a $6.80 decrease in their monthly rent if bill if the length of time until severe restrictions were enforced reduced from 5½ years to 4 years. At the same time, they are willing to pay a smaller amount of $2.80 to delay enforced severe water restrictions from 5½ years to 8 years.

Figure 25 Renters WTP monthly rent – Length of time until severe restrictions are enforced



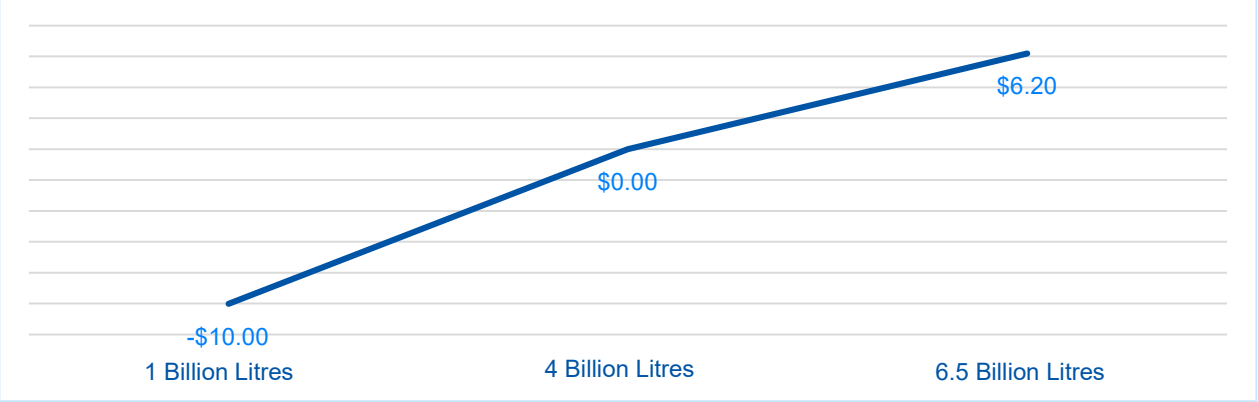
Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Amount of recycled water provided for cool, green spaces.

Sydney Water currently provides 4 billion litres of recycled water each year to water new and existing public green spaces, helping to create cool, green spaces during drought. This recycled water currently irrigates about 800 hectares of green spaces (equivalent to 270 football fields) across Greater Sydney. By public green spaces we refer things like public parks, gardens, and reserves. Recycled water is created by treating and piping wastewater and stormwater.

Homeowners would be willing to pay an additional $6.20 to increase the production of recycled water to 6.5 billion litres per year and be able to irrigate 1,300 hectares of open space. However, if the quantity of recycled water made available to water public green spaces was reduced to 1 billion litres, customers would expect a $10 reduction in their quarterly water bill.

Figure 26 Homeowners WTP quarterly bill – Amount of recycled water provided for green spaces

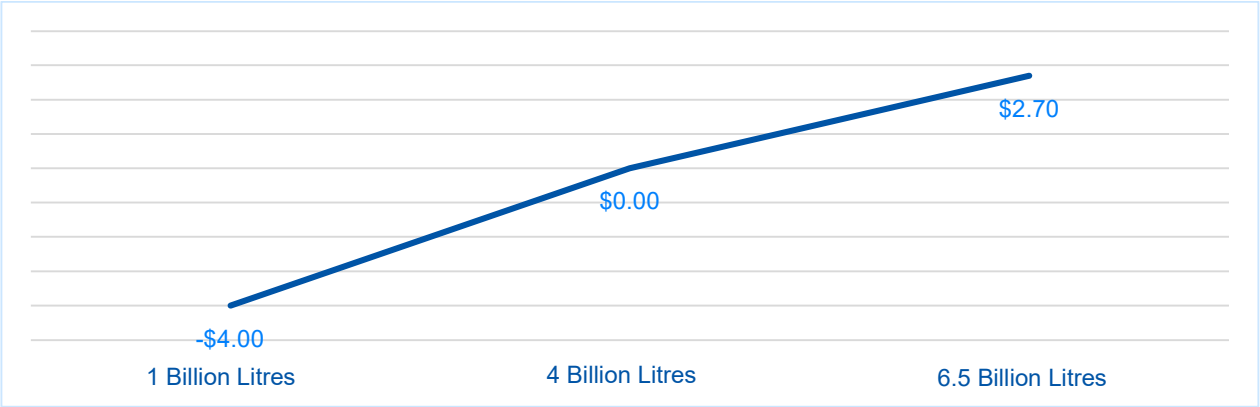


Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Similarly, renters were willing to pay an additional $2.70 on their monthly rent to increase the quantity of recycled water from 4 billion litres to 6.5 billion litres. At the same, assuming all other

attributes remain unchanged, renters expected a reduction in their monthly rent of $4.00 if the quantity of recycled water was to reduce from 4 billion litres to 1 billion litres annually.

Figure 27 Renters WTP monthly rent – Amount of recycled water provided for green spaces

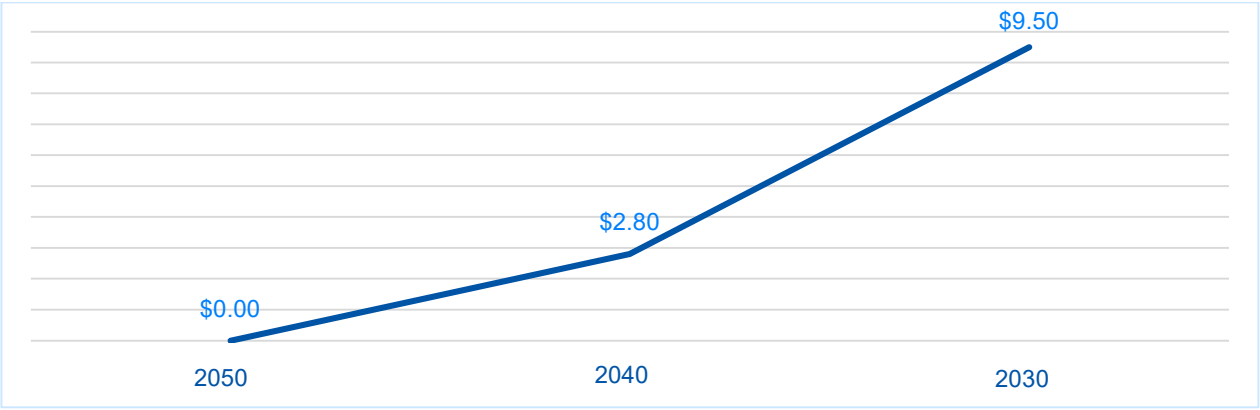


Timeline for net zero

In 2021-22 Sydney Water emitted a total of 363,300 tonnes of carbon emissions. This is equivalent to the emissions produced by 220,000 petrol cars each year. Currently Sydney Water aims to achieve net zero carbon emissions through more energy-efficient operations, greater creation and use of renewable energy and carbon offsetting projects (i.e., new forests) by 2050. However, it could invest further to achieve net zero emissions earlier.

The charts below show an increasing willingness to pay to achieve net zero earlier than the status quo commitment of 2050. If all other attributes remain unchanged, residential customers were willing to pay an additional $2.80 on their quarterly bill. However, they were willing to pay $9.50 to achieve this outcome by 2030. This finding was consistent with qualitative feedback provided in previous phases of the Our Water, Our Voice customer engagement.

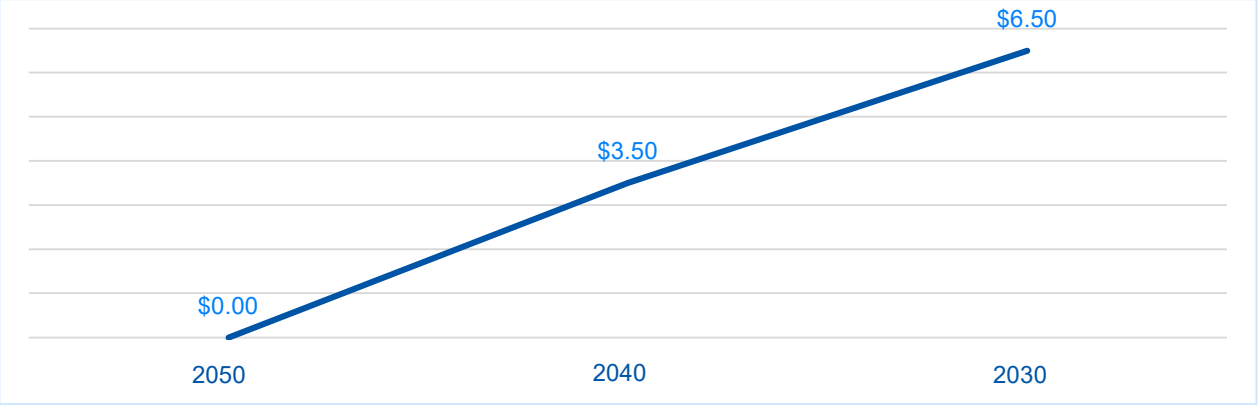
Figure 28 Homeowners WTP quarterly bill – Achieving net zero



Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Amongst renters there was a willingness to pay an additional $3.50 per month on their rent to achieve net zero by 2040. This increased to $6.50 additional per month on rent if it was achieved by 2030. This possibly reflects the younger demographic of renters, where younger age groups typically place a higher value on reducing carbon emissions.

Figure 29 Renters WTP monthly rent – Achieving net zero



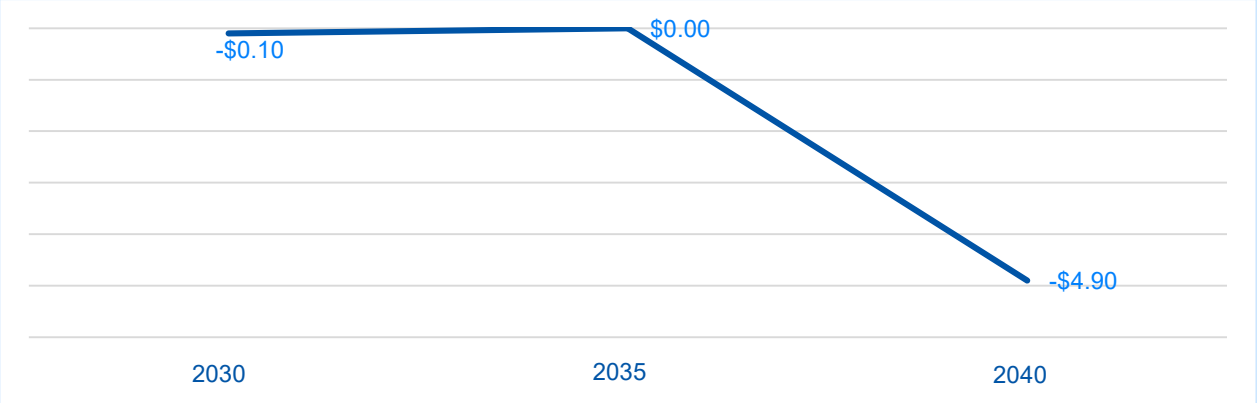
Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Time to replace water meters with digital smart meters.

Digital smart meters use new technology to automatically send hourly meter readings to both the customer and Sydney Water. This means customers can have more detailed information about their water use compared to traditional meters that are read once per quarter. Digital meters can be linked to an app or website allowing customers to see their water usage in real time and use water more efficiently, especially in times of drought. The current plan is to replace all traditional meters with smart meters by 2035.

The model shows that homeowners don't see any additional benefit in replacing traditional meters with smart meters any earlier then 2035 (i.e. WTP -$0.10 for replacement by 2030). However, they want to avoid it happening any later than 2035. They would want to be compensated $4.90 on their quarterly bill if this was to occur.

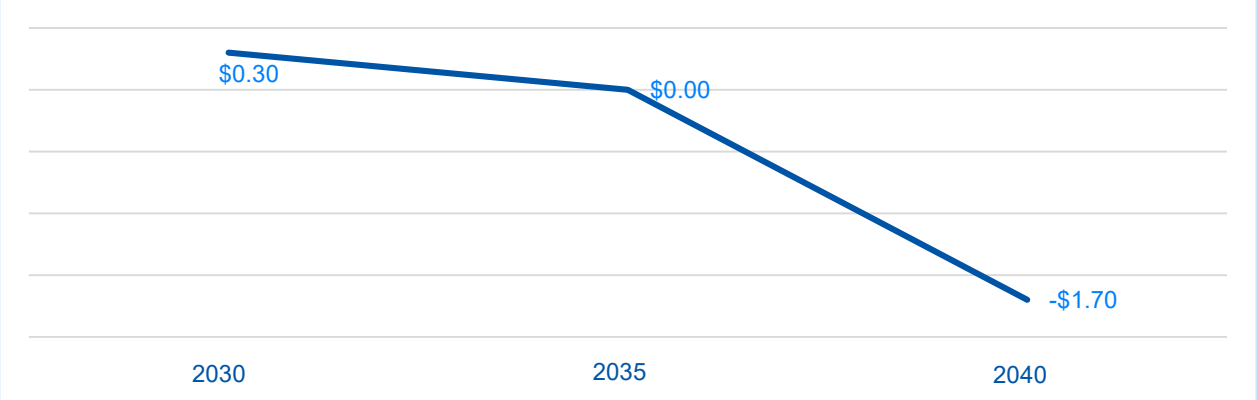
Figure 30 Homeowners WTP quarterly bill – Time to replace water meters with digital smart meters



Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Similarly, renters see limited benefit in replacing traditional meters with digital meters earlier than 2035 (i.e. WTP $0.30 for replacement by 2030). At the same time, they want to avoid the transition happening any later then 2035.

Figure 31 Renters WTP monthly rent – Time to replace water meters with digital smart meters.



Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Chance of unplanned interruption to your water service for 5 hours or greater

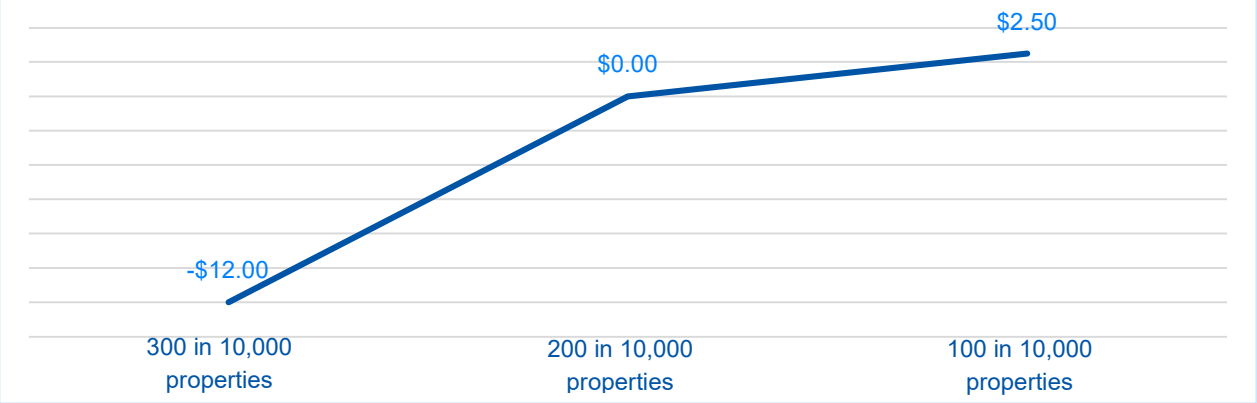
On some occasions when leaks or breaks occur on Sydney Water's water network, the water needs to be shut off to repair a pipe. This can mean that customers who are connected to the pipe lose their water service for five hours or more until the repair is complete and the water is turned back on. When this occurs and customers have less than 48 hours' notice, it's called an unplanned interruption.

Each time a customer experiences an unplanned interruption to their water supply that lasts for five hours or more they receive a rebate of $40 off their water bill. If a customer experiences 3 or more unplanned interruptions that last for more than 1 hour, in one 12-month period, they receive an additional full refund of their water service charge.

Currently, Sydney Water's network standard is for no more than 200 in 10,000 properties (or 2% of properties) to have such a service interruption each year. Sydney Water could invest more to reduce the number of these outages, or it could reduce investment which would increase the number of outages.

Homeowners are willing to pay marginally more on their quarterly bill to reduce the number of service interruptions each year from 200 to 100 per 100,000 properties (i.e. WTP $2.50). However, they are far more sensitive to a decrease in service level than an improvement. They would expect a $12 decrease in their quarterly water bill if the service level declined from 200 to 300 interruptions per 100,00 properties as a consequence.

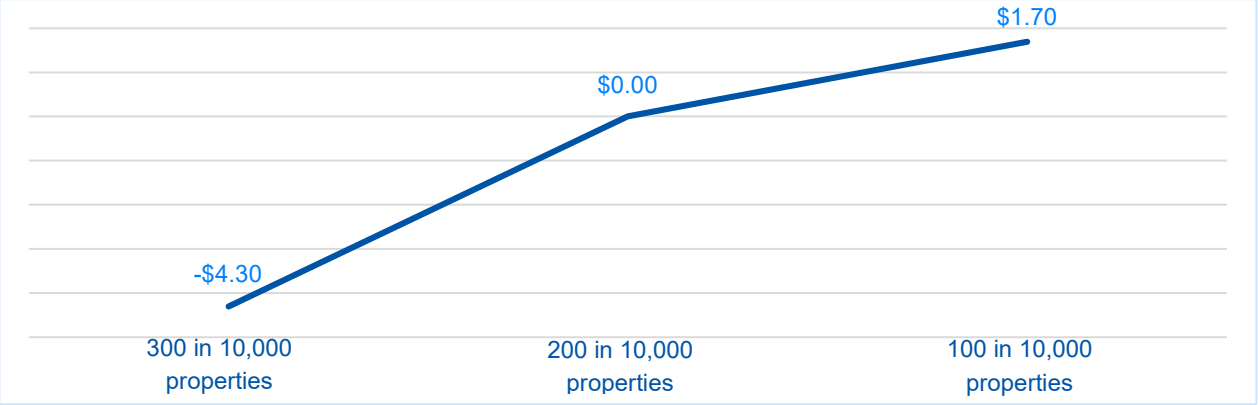
Figure 32 Homeowners WTP quarterly bill – Chance of an unplanned interruption to your water service for 5 hours or greater.



Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Renters had a similar reaction to changes in service levels. They were willing to pay marginally more to to reduce the number of service interruptions each year from 200 to 100 per 100,000 properties (i.e. WTP $1.70). However, they would expect a decrease in their monthly rent (-$4.30 per month) if the service level declined from 200 to 300 interruptions per 100,00 properties as a consequence.

Figure 33 Renters WTP monthly rent – Chance of an unplanned interruption to your water service for 5 hours or greater.



Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Chance of wastewater (sewage) overflow

In dry weather, customers can experience an overflow of wastewater onto their property (either inside the house or in the garden) due to a blockage in Sydney Water's wastewater pipes. Blockages are caused by tree roots entering wastewater pipes or build-up of oil or grease, or other objects such as wet wipes, inside the pipes.

Sydney Water reduces the chance of this happening by inspecting wastewater pipes and clearing blockages. Customers who experience a wastewater overflow in dry weather receive rebates on their bills ($75 for first two overflow events in a year). In addition, if a customer experiences three or more overflows in a year they are refunded their entire wastewater service charge.

Currently, Sydney Water's network standard is for no more than 70 in 10,000 properties (or 0.7% of properties) experience a wastewater overflow each year. Over the next 10 years, Sydney Water could either invest more to reduce the number of wastewater overflows or it could reduce investment which would increase the number of these overflows.

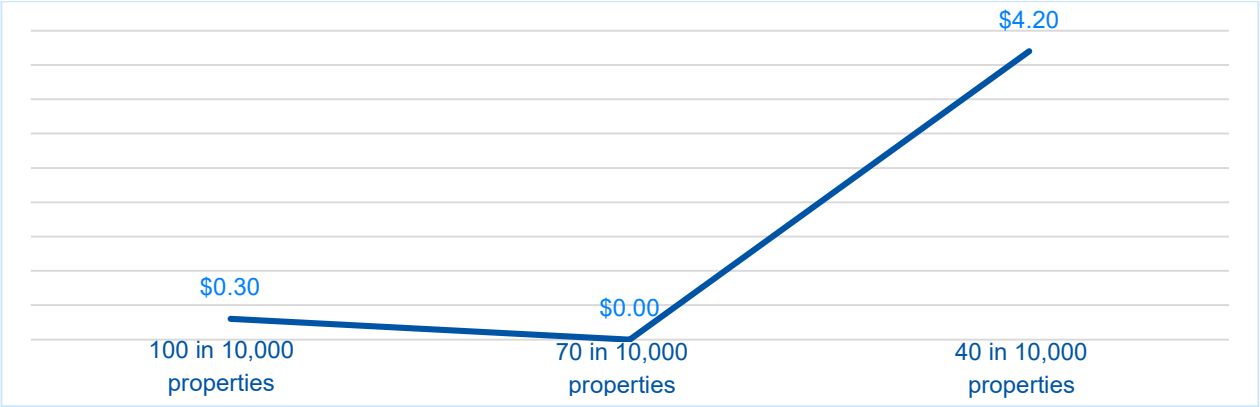
The key outcome from the model is that homeowners are willing to pay $9.40 on their quarterly bill more to reduce the number of wastewater overflows at properties from 70 to 40 in 10,000 properties. The model indicates they would expect a $1.80 decrease in their quarterly bill if the incidence of wastewater overflows was to increase from 70 to 100 per 10,000 properties.

Figure 34 Homeowners WTP quarterly bill – Chance of a wastewater (sewage) overflow

Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Renters were also willing to pay more (+$4.20 on their monthly rent) to reduce the incidence of wastewater overflows in Greater Sydney. While it appears that renters would also be willing to pay to decrease the service standard from 70 to 100 in 100,000 properties, we feel that this reflects the relatively small incidence of wastewater overflows (1%, 0.7% and 0.4%) and as a consequence a level of indifference to such events.

Figure 35 Renters WTP monthly rent – Chance of an unplanned interruption to your water service for 5 hours or greater.



Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Chance of low water pressure

Water pressure in the system can fall when many people are using water at the same time or when a pipe breaks. In areas with lower pressure, this may result in a slow flow of water from your taps. You may notice that:

- it takes a few minutes to fill a bucket
- there is only a trickle of water from a second-floor taps/shower
- you are unable to use water in more than one place in the home (e.g., not being able to shower while using the washing machine).

Currently there are a small number of properties (a maximum of 200) in some areas of Sydney that regularly experience low water pressure.

When development occurs in existing urban areas, more customers connect to the existing water network which can result in more customers regularly experiencing low water pressure. Customers who experience low water pressure receive a rebate of $40 on their bills for up to one event per quarter (a maximum of $160 a year).

Currently, Sydney Water's network standard is for no more than 1 in 10,000 properties (or 0.01% of properties) to suffer from low water pressure. Over the next 10 years, Sydney Water could invest more to reduce the incidence of low water pressure, or it could reduce investment which would increase the incidence of low water pressure.

Homeowners were willing to pay an additional $4.30 on their quarterly water bill to reduce the incidence of low water pressure across the network. If the incidence of low water pressure was to increase from 1 in 10,000 to 2 in 10,000 there was an expectation of a $2.10 reduction in the water bill.

Figure 36 Homeowners WTP quarterly bill – Chance of low water pressure.

Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Renters were willing to pay an additional $3.40 on their monthly rent to reduce the incidence of low water pressure across the network. If the incidence of low water pressure was to increase from 1 in 10,000 to 2 in 10,000 there was an expectation of a $2.10 reduction in their monthly rent.

Figure 37 Renters WTP monthly rent – Chance of low water pressure.

Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Number of urban waterways improved.

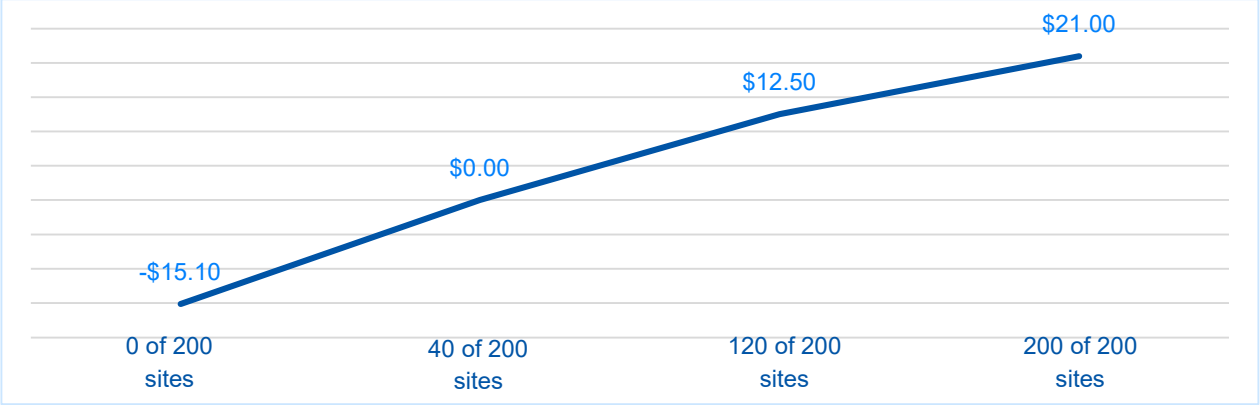
Urban waterways provide habitats for plants and animals and places for nature to flourish. Waterways can support recreation like swimming, boating and diving, and they can provide places for people to see and enjoy nature and the outside environment. The health condition of waterways can affect their ability to support nature, recreation, and enjoyment.

Across Greater Sydney, Sydney Water has identified 200 waterway sites which could be improved through investment to reduce litter and pollution from wastewater, to improve water quality, improve riverbanks and plant life, and make waterways look more natural and accessible.

Currently Sydney Water plans to improve 40 of the 200 sites over the next 10 years. Over the next 10 years, Sydney Water could invest more to improve more waterway sites or reduce investment and make no improvement to these sites.

Homeowners appear comfortable with Sydney Water expanding its waterway improvement plan to include more sites than the current plan of 40. Homeowners were willing to pay an additional $12.50 on their quarterly water bill for expanding the number of sites from 40 to 120. They were willing to pay an additional $21.00 to improve all 200 sites over the next 10 years. However, if the number of waterways being improved was actually reduced to 0 there was an expectation of a $15.10 reduction in their quarterly bill.

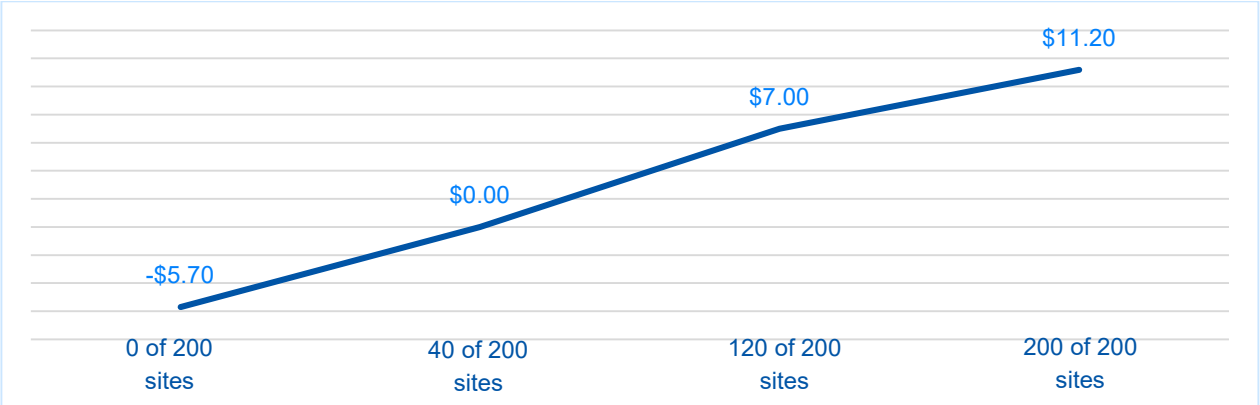
Figure 38 Homeowners WTP quarterly bill – Number of urban waterways improved.



Base: Homeowners sample (n=2,884). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

Renters were willing to pay an additional $7.00 on their monthly rent to lift the number of sites being improved over the next 10 years from 40 to 120. They were willing to pay $11.20 to lift the number of sites improved from 40 to 120. There was an expectation of a rent reduction of $5.70 per month if the number of sites was reduced to 0.

Figure 39 Renters WTP monthly rent – Number of urban waterways improved.



Base: Renters sample (n=1,119). Note: Assumes all other attributes remain at base case. Willingness to pay is in addition to 36% proposed increase.

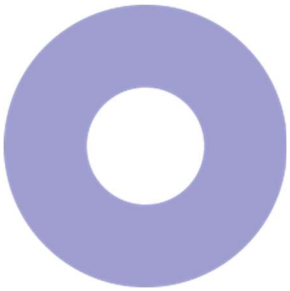
9 Glossary and bibliography

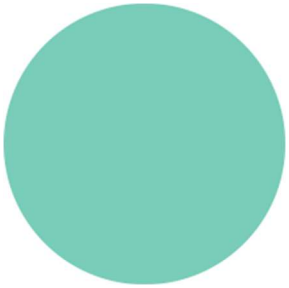
9.1 Glossary

The following table provides a reference point for acronyms used throughout this report.

Table 10 Glossary

Acronym	Descriptor
CALD	Culturally and Linguistically Diverse
First Nations	First Nations refers to people of Australia who associate as being a person of Aboriginal and/or Torres Strait Islander origin and/or descent.
Greater Sydney	Greater Sydney (including the Blue Mountains and Illawarra)
IPART	Independent Pricing and Regulatory Tribunal
Paired interview	Paired interviews are where a customer living with a disability has the option of conducting the interview with a carer or support worker if they need this in order to participate.
Residential customer	General member of the public that includes both homeowners and renters.
SMEs	Small to Medium Sized Enterprises
SMS	Short Message Service; text message
Value Makers	A business/person interacting with Sydney Water regarding products and services to create valuable things for residents, businesses, or developers. Value Makers fall into three sub-categories; doer, facilitator, and other.





For more info email multimedia@sydneywater.com.au