Our Water, Our Voice

Customer Engagement Program

Phase 1 Report [FINAL]

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Prepared for Sydney Water by Kantar Public

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KANTAR PUBLIC

Sydney WATER

Phase 1 Report from 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 September 2022 and spanning 12 months, Sydney Water is undertaking a thorough listening exercise to understand customer expectations and priorities, as well as willingness to pay for investments that align with these expectations. The program was named *Our Water, Our Voice* by customers.

This report summarises the findings from the first stage of the engagement program, including conversations with over 4,000 residential customers and over 40 stakeholders, including business customers, between September and December 2022.

This report provides an in-depth look at the results from this exploratory phase of customer research and engagement, and highlights how these insights are shaping future phases of the program, and ultimately Sydney Water's Regulatory Proposal.

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 overall structure of Phase 1, where we began by understanding the broad expectations that customers and stakeholders have for Sydney Water.

These priorities were then ordered from most to least important, then customer willingness and capacity to pay for Sydney Water increasing service levels in these areas was tested. To supplement this document, a shorter summary style version is being 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 named the program, and as you will see in this report, they have actively shaped the focus for Sydney Water's Regulatory Proposal. Sydney Water has an ambitious target of reaching 'Advanced' level for this 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* engagement program.

Ash Moore

Co-Chief Executive Officer, Kantar Public Asia Pacific.

Acknowledgement of Country

Sydney Water and Kantar Public respectfully acknowledges 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 capacity to pay for water services.

The *Our Water, Our Voice* program is a four-phase program conducted over one year (2022–23) 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. This report presents the methods and findings of Phase 1.

Methods

A multi-method customer engagement approach was used, with both qualitative and quantitative elements. This engagement was completed in a way to ensure it was inclusive, accessible, and representative of the Greater Sydney population. The ultimate aim of the engagement was to provide customers an opportunity to have their say in a way that provided robust and reliable results.

Qualitative research

The qualitative research comprised 50 sessions, which included customer forums, focus groups, and individual in-depth interviews. Two customer forums were facilitated in person and attended by a total of 176 people. In-depth interviews and focus groups were conducted with specific sub-groups, including CALD (33 customers) and First Nations customers (10 customers), people living with disability (10 customers), as well as owners of small and/or medium enterprises, Major Business customers, local and state Government, Major Developers and Value Makers.

Quantitative research

The quantitative research comprised two online surveys. The first was a MaxDiff survey, where customers were shown the unprompted customer recommended priorities for Sydney Water (elicited through the qualitative research) and were asked to indicate the "most" and "least" important priorities through a special best worst scaling exercise. Across all respondents, this then results in an overall ranking of importance of each customer priority relative to the others.

Following this, an in-depth internal workshop was conducted to examine the priority areas that ranked highest in the MaxDiff exercise. This information was used to convert and refine these into

12 final attributes or priority outcomes. These attributes then fed into the Discrete Choice Experiment (DCE).

DCE is a methodological approach to studying choice behaviour that 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 being offered.

To understand customer's preferences for Sydney Water outcomes, participants were provided with a full description of each of the 12 attributes. Participants were informed that their responses would be used in decision-making about proposed changes to Sydney Water services over the next 10 years and were reminded to consider their available income when choosing alternatives with higher prices compared to the current. The DCE was then used to estimate how much customers were willing to pay (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).

This was done by presenting customers with hypothetical examples of different service packages for homeowners and asking about their WTP for each one.

A total of 2,472 customers completed the DCE. Two separate models were estimated; one for homeowners (n=1,974; those who pay a quarterly water bill), and one for renters or those in social housing (n=498; those who see a commensurate increase in monthly rent to account for increases in their water services).

Findings

Changing expectation and priorities over time

There have been some marked shifts in the expectations and priorities of customers in recent years. We can see that since the last regulatory review by Sydney Water in 2019, water's perceived value, use, and impact has changed. The focus in the past has been on how water is used, its taste/smell, when it is used, what it is used for, and ways in which it may be wasted or not used properly. In 2022 we note that people displayed considerably more 'future-focused' and 'preventative' thinking when considering the value of water. For example, uses of water and wastewater that would mitigate against the two main risks identified by the community – drought and flood.

Additionally, there seems to be a shift in the views of customers from individual benefits of water to community benefits such as water usage for parks and gardens to maintain amenity, and communal accessibility of water (e.g., water fountains).

There were also differences noted by region. Customers in the Northern, Inner, and Southern areas of Greater Sydney were more likely to include 'future-focused' priorities or considerations when thinking about their needs now and into the future. Broader macro-level environmental considerations (such as 'net zero', transformative technology implementation to increase efficiency/performance/quality) were mentioned more often by these cohorts. Western and Far Western areas of Greater Sydney were more focused on 'mitigation' based priorities at the community level. 'Mitigation' in this context related to the ability to smooth out water availability

highs and lows to prevent interruptions to quality, to prevent the need for restrictions, and to maintain the quality of water regardless of its availability.

While much of this change will be driven by external influences, including drought and floods, it is important context in understanding priority areas and developing the final pricing model.

General customer priorities for Sydney Water into the future

Customers who participated in the Sydney CBD customer forum prioritised continuing to provide safe, clean and quality water (21%), and reduce and remove pollution from waterways (12%). Customers in Sydney also rated water conservation activities as a priority, specifically in-home technology, and community education around being water smart (9% and 8% respectively).

Customers in Parramatta similarly prioritised continuing to deliver clean, quality water (12%), however equally prioritised proactive network maintenance and investment in infrastructure for recycling wastewater (both 12%).

Stakeholder priorities for Sydney Water into the future

Each stakeholder type (Major Developers, Value Makers, Service Critical High Businesses, and local and state government representatives) had a unique relationship with, and perspective on, the priorities Sydney Water should be focussed on into the future. However, some priorities were consistent across all groups and included: addressing ageing infrastructure so the network can support a growing population, responding to climate change and being able to guarantee water supply, providing community education about water conservation, reducing carbon emissions, and ensuring Sydney Water is well set-up to manage timely communications and decision-making.

The specific views of each stakeholder type on areas such as droughts and water restrictions, greening and cooling, managing impacts on oceans and waterways, water aesthetics, and carbon emissions, can be found in chapter 7.

Relative importance of customer priorities

Of the 15 priorities tested in this phase, customers ranked maintaining safe and clean drinking water highest, followed by ensuring water and wastewater bills remain affordable, and then ensuring waterways and water recreation areas remain clean and safe to use by reducing wastewater pollution to rivers and the ocean.

There was very little variation by sub-group, and although some of the lower priorities differed in order, the top three priorities remained the same for the general population and all the sub-groups.

Relative attribute importance results from DCE

For homeowners, water aesthetics (the taste and smell of water) was the attribute that had the greatest relative influence in driving customer utility. As previously explained, this attribute does not refer to the safety of drinking water. The next most influential attributes were healthy waterways and habitats, and water for green spaces.

For renters, water aesthetics (or the taste and smell of water) was also the attribute that had the greatest relative influence in driving customer utility. The next most influential attributes were

healthy waterways and habitats, capturing and reusing rainwater, and the timeline for achieving net zero carbon.

WTP for individual attributes

For many of the attributes, WTP was not linear over the range of levels tested. For many attributes customers valued the first increment of improvement more highly than subsequent increments (displaying the principle of diminishing marginal returns). For example, customer were WTP $16.74 extra to have most urban waterways in the Greater Sydney rated as being in fair health (compared to most urban waterways in poor health), but only an additional $3.83 to upgrade the health further, so that most urban waterways in Sydney are rated as being in good health. This shows that the marginal utility gain between poor and fair is greater than between fair and good.

Another important finding is that for some attributes, customers were more value-sensitive to a decrease in service level than an improvement. For example, drinking water aesthetics appeared to be more strongly affected by loss aversion, a desire not to let standards slip and the need for compensation if they did; rather than a willingness to pay extra for improved standards. When keeping all other attributes at their current level, homeowners were WTP $5.33 on top of their quarterly water bill to halve the number of water aesthetic complaints from 400 to 200 per year, compared with an expected reduction in their quarterly water bill of $21.53 if complaints were to double. This is a common finding in customer research, where losses in service are felt more acutely than an equal incremental gain.

Scenario analysis

We analysed three hypothetical service packages to illustrate different customer preferences.

For scenario 1, “The economiser package”, where levels of each attribute are either kept in line with the status quo or made worse, customers expected an average discount of $31.26 off their quarterly bill to derive the same utility as they do currently.

For scenario 2, “Going Green”, where levels of environmentally focused attributes have been increased while others have primarily remained in line with the status quo, customers were WTP, on average, an extra $31.89 per quarter.

And for scenario 3, “Boosting customer service”, where levels of customer service quality outcomes (outages, resolution times, frequency of restrictions) have been improved while others have primarily remained in line with the status quo, customers were WTP, on average, an extra $28.42 per quarter.

Note these are hypothetical scenarios only and are simply to showcase examples of how these findings could be applied.

Next steps

Phase 2 of this research will help design performance metrics that can guide the evaluation of Sydney Water’s service delivery. This includes measurement of current levels of customer satisfaction and understanding of customer expectations of around Sydney Water’s future targets.

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1 Introduction

1.1 About Sydney Water

Sydney Water is Australia's largest water utility, a world-class organisation delivering essential services in our great city. Sydney Water provides safe, high-quality drinking water to nearly 5.3 million people in and around Greater Sydney every day, as well as 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. Their Operating Licence is regulated by the Independent Pricing and Regulatory Tribunal (IPART), which 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, and 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 customer engagement requirements 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 discretionary expenditure (i.e., to achieve outcomes not covered by regulation).

For Sydney Water, IPART's expectations mirror the journey and plan for industry leading customer engagement. The *Our Water, Our Voice* customer engagement program provides the insights needed to develop Sydney Water's Enterprise Plan, a precursor to the regulatory submissions to IPART including the Operating Licence and Customer Contract (issued by IPART by 1 July 2025), and the price review submission (due in September 2024). These documents will help shape customers' water bill prices for the 2025-2030 period.

Sydney Water submissions to IPART for changes to prices and operating licence are aligned with strategy and plans at all levels. This means the *Our Water, Our Voice* program is a critical input to these regulatory submissions.

The *Our Water, Our Voice* customer engagement framework will help shape Sydney Water's strategic planning for the future. 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 to understand and respond to customers' experience, through research studies tracking customer sentiment and satisfaction with products and services. Sydney Water also reviews customer interactions through their website and customer contact centre and are committed to continual customer engagement as these form an integral part of the enterprise planning process.

The *Our Water, Our Voice* customer engagement program has a long lens with immediate implementation. The insights gathered from this program will help shape Greater Sydney, the Illawarra, and Blue Mountains for generations to come.

Sydney Water Chief Executive, Roch Cheroux, introducing Sydney Water and the regulatory process as part of the customer **forum in Sydney CBD**

2 Engaging our customers in the regulatory process: Program overview

***Our Water, Our Voice* is a multi-phase program divided into four distinct phases of customer consultations. This report summarises the findings from Phase 1 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 recommended Customer Contract and Price Proposal

Determining the 'customer recommended price proposal'. A package of recommended plans will be presented to customers for them to rank preferred delivery options and performance settings to arrive at a preferred price proposal.

PHASE 4: Customer insight for better business planning

Explores customer sentiment towards Sydney Water's key strategic direction and business plans. The research will capture customer insight to inform the development of Sydney Water's Operating Licence and Price Proposal submissions, as well as core elements of the customer contract.

Our Water, Our Voice timeline.

3 How we listened: Phase 1 approach and methods

3.1 Objectives

The primary objectives of Phase 1 were to:

- Obtain a list of unprompted customer recommended priorities that customers believe Sydney Water should focus on over the next five to ten years.
- Rank these customer recommended priorities in order of relative importance, where price is not a key consideration.
- Assess customer willingness and capacity to pay for the top ranked priorities, along with key elements of Sydney Water's Long-Term Capital and Operating Plan (LTCOP) submission, especially where investment is discretionary.

To achieve this, a multi-method customer engagement approach was used, with both qualitative and quantitative elements. This engagement was completed in a way to ensure it was inclusive, accessible, and representative of the Greater Sydney population. The ultimate aim of the engagement was to provide customers an opportunity to have their say in a way that provided robust and reliable results.

3.2 An overview of research activities in Phase 1

Exploring customer and stakeholder priorities for Sydney Water (focusing on the next 5-10 years) → **Chapter 5** **Chapter 6**

Quantifying customer priorities and ranking their relative importance through a max diff exercise → **Chapter 7**

Deep dive exploration into customer's willingness to pay for these ranked priorities, including differences in priorities for home owners and renters → **Chapter 8**

Exploring and summarising any differences that may exist within key sub groups → **Chapter 4**

3.3 Methodology – Qualitative

The qualitative research comprised 50 sessions, which included customer forums (conducted in-person), focus groups (conducted online), and individual in-depth interviews (with the option of paired interviews for individuals living with disability; conducted either online or over the phone).

Target recruitment screeners were designed in consultation with our recruitment partners and approved by Sydney Water prior to their use. These screeners are provided in Appendix A.

Discussion guides for all qualitative sessions were designed by Kantar Public and approved by Sydney Water. Discussion guides are provided in Appendix B.

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

3.3.1 Customer forums

Two customer forums (length of 3 hours each) were facilitated in person and attended by residential customers from across Greater Sydney, including the Blue Mountains and Illawarra regions. Additional details of these forums, including location and number of participants is provided in Table 1.

Each forum included a mix of age groups (all participants aged over 16 years old), genders, locations, homeowners, renters, financially vulnerable people, people living with a disability, people from culturally and linguistically diverse (CALD) backgrounds, and First Nations people. Appendix C includes a demographic breakdown of all forum participants.

In line with standard practice, participants 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 below structure:

- Welcome and introductions (Kantar Public and Sydney Water)
- Ripple sprint
- Outcome generator (unprompted)
- Meal break
- Outcome generator (prompted)
- Future engagement worksheet
- Prioritisation
- Wrap up

Table 1 Residential customer customer forums

Date and Time	Location	Location coverage	Number of participants
Tuesday 6 September 2022 5:30PM – 8:30PM	Sydney CBD	Inner Sydney, Northern Sydney, Southern Sydney	n=86
Wednesday 7 September 2022 5:30PM – 8:30PM	Parramatta	Western Sydney and Far Western Sydney (including Blue Mountains)	n=90

Sydney Water staff, IPART staff, and other key stakeholders, including the NSW Environment Protection Authority (EPA) and NSW Health, were invited to observe each session in person, but were not able to participate.

Customer feedback was collected using a feedback form at the end of each customer forum (form provided in Appendix D). This feedback is being used to improve engagement practices for the remaining phases of this research. A selection of feedback is provided below in the form of aggregate results from the feedback form, alongside direct quotes from customers.

Figure 1 Customer feedback (combined results from the two forums)

Mean score out of five – using an agreement scale. Base: Customer forum participants who completed feedback sheet (n=139)

> A lot of good ideas came up tonight, I hope Sydney Water will act on as many as possible.
>
> **Residential customer** | Sydney customer forum

> It's great that actual Sydney Water executives were here to listen.
>
> **Residential customer |** Sydney customer forum

> I was impressed at how the forum was facilitated. The last scoring of priorities really made me feel my views were taken on board.
>
> **Residential customer |** Parramatta customer forum

Customer forum (**Sydney**) September 2022

Customer forum (**Parramatta**) September 2022

3.3.2 In-depth interviews and focus groups

Accompanying these forums was additional qualitative online research with key audiences:

- 90-minute focus groups with CALD customers (n=6).
- 90-minute focus groups with First Nations customers (n=2).
- 60-minute interviews with people living with disability, option of paired interview (n=10).
- 90-minute focus groups with owners of small and/or medium enterprises (SMEs) with low, medium, and high criticality of water to business (n=6).
- 45–60-minute interviews with stakeholders; Major Business Customers (Service Critical High; hereon 'Service Critical High Businesses'), local and state government representatives, Major Developers, and Value Makers (n=24).

In line with standard practice, participants from a CALD or First Nations background and participants living with disability received an incentive of $80 as a 'thank you' for their participation. SME participants received an incentive of $140 as a 'thank you' for their participation. Value Makers received an incentive of $120 as a 'thank you' for their participation.

Service Critical High Businesses, 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.

Individuals living with disability self-reported their diagnosis and/or health concern during recruitment. Among those customers who participated in the interviews, self-reported health concerns included: mental health conditions (n=3), physical disability (e.g., Parkinson's) (n=5), mobility problems or concerns (n=4), sensory disability (e.g., vision or hearing impairments) (n=1), and intellectual disability (n=1).

Sessions with people living with disability, owners and managers of SMEs, and stakeholders, including Service Critical High Businesses, local and state government representatives, Major Developers, and Value Makers were conducted by a team of experienced moderators from Kantar Public.

Groups with CALD and First Nations participants were recruited and moderated by our specialist research partner, Cultural Partners, using panel and community networks. Groups with CALD participants were conducted in-language, specifically in Korean, Vietnamese, Mandarin, Cantonese, Greek, and Arabic. Moderators of these groups also contributed to analysis and interpretation of findings, as well as reporting of results.

Within the CALD groups, a total of 33 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, excluding Service Critical High Businesses, local and state government representatives, Major Developers,

Value Makers, and SMEs, as these participants were not recruited based on demographic characteristics.

All research was conducted online, using tele-conferencing platforms (Microsoft Teams and Zoom) or telephone.

All sessions were conducted between Tuesday 13 September and Wednesday 12 October 2022.

3.4 Methodology – quantitative

The quantitative research comprised two online surveys, conducted in partnership with CaPPRe.

The survey instruments were designed by Kantar Public and CaPPRe, then approved by Sydney Water prior to fieldwork. The MaxDiff survey instrument is provided in Appendix E. The technical report to the Willingness to Pay study further details the survey design and instruments for the Discrete Choice Experiment (DCE), which was conducted by CaPPRe.

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

3.4.1 MaxDiff survey

A 15-minute online survey of n=1,537 was conducted, with respondents representative of the general population of Greater Sydney, including the Blue Mountains and Illawarra regions.

Key details include:

- The survey was open for responses from Friday 30 September to Tuesday 11 October 2022.
- The average length of time to complete the survey was 13 minutes.
- Broad non-interlocking quotas were set for demographic variables (see Table 2).
- The final sample composition is shown in Table 2.
- Survey data had a margin of error (at the 95% confidence level) of ±2.5%.

Table 2 Quota targets and sample breakdown

Variable[1]	Target (%)	Target (n)	Achieved (%)	Achieved (n)	Quota
Total	100%	1500	100%	1537	Hard
Gender					
Male	50%	750	50%	764	Soft
Female	50%	750	50%	772	Soft
Other / prefer not to say	*As falls*	-	0%	1	Soft
Age					
18-29	12%	185	13%	199	Soft
30-39	20%	300	20%	309	Soft
40-49	20%	300	19%	285	Soft
50-59	20%	300	20%	312	Soft
60-69	15%	230	16%	251	Soft
70+	12%	185	11%	181	Soft
Location					
Northern Sydney	20%	300	20%	310	Soft
Inner Sydney	25%	375	25%	384	Soft
Southern Sydney and The Illawarra	20%	300	20%	304	Soft
Far Western Sydney and Blue Mountains	15%	225	15%	229	Soft
Western Sydney	20%	300	20%	310	Soft
Cultural and language diversity					
Language other than English	35%	525	28%	431	Soft
Primarily English speaking	65%	930	72%	1106	Soft
Aboriginal and/or Torres Strait Islander	3%	45	4%	55	Soft
Financial hardship					
Experiencing financial hardship	20%	300	3%	48	Soft
Other					
Living with a disability	15%	225	15%	229	Soft

[1] Please note, references to 'language other than English' and 'Aboriginal and/or Torres Strait Islander' reflect the terminology 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' and 'First Nations', respectively.

3.4.1.1 Engagement approach used in the MaxDiff survey

MaxDiff is a ranking exercise where survey respondents indicate their preferences by selecting "most important" and "least important" options of a given list. This then leads to a relative ranking of each option based on the preferences of all respondents. In this case, the MaxDiff survey was used to rank the importance of specific customer outcomes identified in the customer forums, relative to each other.

The cost of service and customers' willingness/ capacity to pay were not measured using the MaxDiff exercise, only relative importance was measured with this exercise. The Discrete Choice Experiment (DCE) described in Chapter 8 of this report focussed on how willing and able customers are to pay for the most important priorities identified by this survey.

In the MaxDiff, respondents were shown 15 sets of seven customer priorities. Respondents were asked to select the customer priority outcomes they believe are the 'most' and 'least' important for Sydney Water to focus on over the next 10 years. An experimental design underpinned the MaxDiff, ensuring all priority outcomes were evaluated by all respondents and that each priority outcome was seen an equal number of times by each respondent.

3.4.2 Discrete Choice Experiment (DCE)

The methodology underpinning the Discrete Choice Experience (DCE) is described in greater detail in Chapter 8 and in the technical appendices.

3.4.2.1 Willingness to pay (WTP) objectives

CaPPRe, a firm specialising in choice modelling, worked in partnership with Kantar Public and Synergies Economic Consulting to design, administer, and analyse customer WTP. This WTP study was conducted as part of a larger customer engagement research program carried out by Kantar Public.

The WTP component of this research program will be used to inform Sydney Waters' pricing submission to IPART and determine how much customers will pay for water over the next five to ten years.

The results of the WTP study (the DCE results) can be accessed through an online interactive dashboard. The quantitative results of the study, including the parameter estimate values for the choice model, have also been documented in an accompanying technical report. It is imperative that utmost caution be exercised when analysing the WTP results presented in this report. To ensure informed decision-making, we strongly advise stakeholders to gain a comprehensive understanding of the model's capabilities and limitations.

The objectives and questions asked as part of the WTP research were:

- **Relative feature preference:** What are the preferences of Greater Sydney residents for a range of different water service delivery options?
- **WTP:** What is the total WTP (total bill value) for water service delivery for Greater Sydney residents?

A secondary objective was to find out:

- **Segmentation:** How are bill payers segmented? Are there any characteristics that predict choice?

3.5 Reporting notes

Qualitative

All mentions of Greater Sydney include the Blue Mountains and Illawarra regions.

Direct quotes from the qualitative research have been included to reflect findings in the report where relevant, with the quote source noted.

In reporting the qualitative research findings, an exclusion approach to reporting differences by subgroup has been taken. This means that unless otherwise stated, the findings are consistent for all subgroups reported in that chapter, i.e., SME customers, First Nations customers, CALD customers and individuals living with disability.

Where differences across the following subgroups have been identified, they have been explained in sub-group tables at the end of each qualitative section of this report:

SMEs	First Nations	CALD	Individuals living with a disability

Quantitative

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

- 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 and comparison of findings across subgroups, all charts and tables have been presented using percentages, rather than number of mentions.

4 Sub-group summaries

The following summaries provide an overview of customer engagement activities with key sub-groups. Findings from each group are also included where relevant throughout the report.

4.1 Culturally and linguistically diverse customers

4.1.1 Approach to engaging these customers in the research program

Six, 90-minute focus groups were held via Zoom with CALD customers, who were recruited, and conducted in-language (specifically in Korean, Vietnamese, Mandarin, Cantonese, Greek, and Arabic), by our specialist research partner, Cultural Partners. A total of 33 customers participated in these focus groups.

Findings for CALD customers are integrated into the body of this report, with significant differences against the general population called out in all sections. Non-significant differences are not included as these do not represent variations from the broader population. This section provides a brief summary of the key differences identified in the qualitative research.

4.1.2 CALD customer specific findings

CALD customers provided additional feedback about water and wastewater services in Greater Sydney, both positive and negative. Additional positive feedback was in relation to the constant access to high quality, safe, and clean drinking water in Greater Sydney (Mandarin and Arabic speaking customers). Arabic speaking customers also commented positively on the affordability of water, and on Sydney Waters website, particularly that it provides a forum for the community to have their say, as well as be kept updated on Sydney Water news and activities.

Additional negative feedback provided by CALD customers included:

- Difficulty finding plumbers quickly enough after finding a leak or break, and a reluctance to contact a plumber because plumbing is an expensive service, not as affordable as in China (Mandarin speaking customer).
- A belief that flushing toilets with potable water is a waste of clean water and that other countries (Hong Kong, United States, etc.) are using grey water for toilet flushing (Cantonese speaking customer).
- Concerns that drinking tap water may negatively impact health in the long term, due to traces of chemically treated water from chlorine and lead (Korean speaking customer).

In addition, some Korean speaking customers were unaware that Sydney Water is also responsible for wastewater and suggested that more community education may be required about this. One Korean customer suggested Sydney Water establish a water “museum” to help people understand how the water and wastewater system work.

Korean speaking customers had a relatively low awareness about alternate water sources. Some said they had seen signage about parks or gardens being irrigated with bore water but were

uncertain as to how bore water may apply to their lives. There was scepticism around the safety of desalinated water and uncertainty about how to use rainwater tanks.

The Korean speaking participants were understanding of the need for water restrictions, but also commented some people may not be able to reduce water use as much as others. Instead of rewards for reducing use, they suggested implementing savings on water saving devices. They were less willing to considerably reduce their use through restrictions, preferring instead to somewhat reduce their water use over a longer period.

There were great concerns from these Korean speaking customers about risks from wastewater outflows into oceans and waterways, with particular concerns about potential contamination of fish that are caught and eaten.

On waterway health, some Mandarin speaking customers were concerned after hearing the Japanese government releases radioactive wastewater into the Pacific Ocean, and they questioned how Sydney Water is going to respond to keep Greater Sydney's water safe. Knowledge about waterway health was not only influenced by what customers had seen, heard, or read in Greater Sydney, but also influenced by family, friends, and news outlets overseas.

CALD customers also thought Sydney Water should prioritise:

- Reassuring people in-language that they can drink the tap water and provide multi-lingual promotional material with water bills (Cantonese speaking customer).
- Continue providing opportunities for the community to contribute to decision-making through community consultation (Arabic speaking customer).

4.2 First Nations customers

4.2.1 Approach to engaging these customers in the research program

Two, 90-minute focus groups were held via Zoom with First Nations customers, with a total of 10 participants attending. Customers in this group were recruited by our specialist research partner, Cultural Partners, who also conducted these focus groups.

Findings for First Nations customers are integrated into the body of this report, with significant differences against the general population called out in all sections. Non-significant differences are not included as these do not represent variations from the broader population. This section provides a brief summary of the key differences identified in the qualitative research.

4.2.2 First Nations customer specific findings

First Nations customers provided additional feedback about water and wastewater services in Greater Sydney. Additional positive feedback provided by First Nations customers included the ability to fish and boat frequently and safely in waterways, and adequate water availability to bathe their children.

Negative feedback uniquely provided by First Nations customers included dirty and polluted waterholes that should be clean and safe for swimming. First Nations customers also stated a

belief that their culture had been disrespected, which was specifically linked to discussions about Warragamba Dam (out-of-scope for these consultations).

When it came to expectations in times of drought, First Nations customers widely supported all water saving and recycling efforts discussed. First Nations customers suggested Sydney Water could provide discounted billing or incentive programs for households that used water saving approaches which reduced household water consumption. There was considerable concern that First Nations households would be disadvantaged due to lower socioeconomic levels and living in rental accommodation (rather than in a home they own) leading to lack of access to water saving devices, installations, or technology rollouts. Additionally, there was concern that discounts or assessments for water savings should be offered on an equitable basis. First Nations families with more children or those living in multi-generation households were commonly noted as being at risk of inequity.

A number of First Nations participants suggested that it would be appropriate to penalise non-compliance in times of drought, where clear breaches were apparent. However, they were also concerned that this approach could negatively impact on First Nations customers due to perceived or assumed bias against First Nations consumers by regulators or investigators.

First Nations customers indicated they would tolerate having to reduce their daily water usage by up to half the average daily use if restrictions were to be imposed, but that essential household activities must still be possible, including clothes washing, and baths for children.

On the topic of greening and cooling, First Nations customers requested that special areas in local communities involving older trees and community gathering areas be prioritised for water supply. This customer group also requested that First Nations cultural knowledge and land practices should be a focus of any water management planning and decisions to provide water to parks or green spaces. Finally, First Nations customers advocated strongly for dual signage at publicly accessed waterways, including use of First Nations place names and First Languages in signage.

Additional priorities for Sydney Water identified by First Nations customers included:

- Cost reductions and prevention of bill shock
- Adequate supply to meet the needs of large families, especially children's needs
- Pricing that reflects larger family needs and community realities
- Faster and more personal customer service systems, including shopfront outlets and non-screen or non-call centre methods
- Respect shown to renters as much as homeowners
- Cultural integrity and respect, including First Nations land-use approaches, and understanding local group priorities.

4.3 Individuals living with disability

4.3.1 Approach to engaging these customers in the research program

Findings for customers living with disability are integrated into the body of this report, with significant differences against the general population called out in all sections. Non-significant

differences are not included as these do not represent variations from the broader population. This section provides a brief summary of the key differences identified in the qualitative research.

Ten, 60-minute interviews with individuals living with disability were conducted. Individuals self-reported they lived with one or more disability, including:

- Mental health conditions (n=3)
- Physical disability (e.g., Parkinson's) (n=5)
- Mobility problems or concerns (n=4)
- Sensory disability (e.g., vision or hearing impairments) (n=1)
- Intellectual disability (n=1)

4.3.2 Individuals living with disability specific findings

Individuals living with disability provided additional feedback about water and wastewater services in Greater Sydney. Additional positive feedback included being able to access swimming pools for hydrotherapy, consistent access to hot showers when needed for pain management and being able to maintain a garden to help support their mental health and wellbeing. Additional negative feedback provided by this group was that affordability was more challenging for individuals living with disability, especially if they need to use more water to manage their disability and may also be living on a disability support pension.

When it came to expectations in times of drought, the only unique consideration for individuals living with disability was consideration of those who have higher water use needs related to their disability. Participants from this group suggested Sydney Water could work with these customers to understand their unique needs and to develop a way forward that ensures the wellbeing of the individual is not compromised. Examples could be through discounted access to smart meters (to help them manage their water use), or discounted access to water saving devices (e.g., water saving showerhead). Access to smart meters was also identified as having a supplementary benefit of minimising the need for meter readers, which were described as an unnecessary and sometimes stressful 'knock on the door' for individuals living with a disability.

4.4 SME customers

4.4.1 Approach to engaging these customers in the research program

Findings for SME customers are integrated into the body of this report, with significant differences against the general population called out in all sections. Non-significant differences are not included as these do not represent variations from the broader population. This section provides a brief summary of the key differences identified in the qualitative research.

Six, 90-minute focus groups with owners of small and/or medium enterprises with medium and high criticality of water to business were conducted.

4.4.2 SME customer specific findings

In general, SME customers didn't have substantively different expectations of Sydney Water than residential customers, with the exception of:

- Water as a facilitator of business success (cafés, florists, hairdressers, etc.)
- Lost trading time due to outages impacting negatively on businesses' ability to operate (e.g., need to close the business temporarily or send staff home)
- Business-specific initiatives to nurture a water scarcity mindset were well received (e.g., signs in toilets and by sinks).
- Strong support for smart meters and other technology to help them with monitoring usage, providing reassurance even for those who are unable to change their usage due to its criticality to their business.
- Some reluctance to paying more in business bills now, to cover the cost of investment decisions that would not impact their business in the future (i.e., 30+ years into the future). This was especially relevant for those who did not expect the business to continue beyond their tenure.

4.5 Stakeholders (Service Critical High Businesses, government representatives, Major Developers and Value Makers)

Findings for key customers are integrated into the body of this report, with significant differences against the general population called out in all sections. Non-significant differences are not included as these do not represent variations from the broader population. This section provides a brief summary of the key differences identified in the qualitative research.

Twenty-four, 45–60-minute interviews were conducted with stakeholders, including Service Critical High Businesses, local and state government representatives, Major Developers, and Value Makers.

4.5.1 Priorities for Sydney Water that are consistent across stakeholder groups

It is critical to note that each stakeholder group had a unique relationship with Sydney Water, and thus a unique perspective on which priorities should be focussed on into the future. Although some similarities existed, and are summarised below, there were specific nuances within each stakeholder group. For this reason, the majority of this chapter summarises the feedback from each stakeholder type as discrete groups.

Consistent priorities for Sydney Water across stakeholder groups were to:

- Address ageing infrastructure and the current network's ability to support increasing demand and a growing population.
- Respond to a changing climate and guarantee a secure water supply into the future. including through increased capture/harvesting, water conservation and recycling.
- Educate the community about how to conserve water and take on a water scarcity mindset, which may be challenging following recent flooding.
- Ensure Sydney Water is able to facilitate timely communications and efficient decision-making.
- Reduce carbon emissions.

4.5.2 Local and state government priorities for Sydney

Additional priorities identified by local and state government representatives included

- Encourage the uptake of recycled water. These stakeholders said that because potable water is cheap, selling recycled water is more challenging as customers expect the price of water to be low. Stakeholders suggested Sydney Water could encourage uptake of recycled water by promoting benefits of using recycled water over potable water beyond just price (where appropriate).
- Deal with increasing business costs: local and state government representatives identified that the cost to do business (cost of labour and materials in particular) is increasing due to recent global events. They anticipated this will impact Sydney Water, placing additional pressure on the cost of capital and operating costs.

- Minimise pollution in waterways to facilitate recreation opportunities: with a growing population and increased urban infill, there is a critical need for open space and waterways that facilitate health, wellbeing, and social connectivity opportunities. Local and state government representatives identified a need to ensure waterways, beaches, and other places remain clean, safe to use and free from pollution, despite increased use and therefore the potential for increased pollution.

4.5.3 Major Developers' priorities for Sydney

Additional priorities identified by Major Developers included:

- Improve the way estimations for housing demand are made: they said the current model is not working. Major Developers believed Sydney Water needs to look beyond a 5-year time horizon towards the next 10 or 20 years and be planning now for the investment required to provide services to these future communities. Major Developers wanted Sydney Water to be more involved and collaborative in the early stages of development planning, beyond simply looking at infrastructure delivery and connections to the network. They felt it was critical that Sydney Water's infrastructure delivery aligns with the demands of industry, and does not in any way inhibit development, which they felt was currently happening.
- Linked to the point above, Major Developers want Sydney Water to become more agile and flexible in the way they make decisions. They perceived decision-making at Sydney Water to be extremely slow and inefficient due to the bureaucracy of the organisation, resulting in delays which they then had to manage. There was also a view that the IPART regulatory process should also be more flexible. Specifically, they reported that Sydney Water starts the IPART process 24 months before receiving the funds, which limits its ability to respond to new developments in an agile and flexible way.
- Major Developers believed that Sydney Water is significantly under resourced in terms of delivering services to new developments. They expect Sydney Water to rethink their resourcing model and find efficient ways of working to speed up delivery of major works. Major Developers see a lack of adequate resourcing at Sydney Water as one of the factors influencing significant delays in establishing new infrastructure for new developments. They felt Sydney Water should be exploring ways to create an increased resource base to expedite delivery, such as using the private sector.
- Major Developers expressed great frustration with the speed of communications from Sydney Water. They expect Sydney Water to communicate in a timely and more collaborative manner than the current standard. Although this is explored further in Phase 2 of the engagement program, Major Developers interviewed during Phase 1 expressed a strong desire for Sydney Water to improve the timeliness of its responses and approvals. The Department of Planning and Environment was used as an example of a service that has been able to improve its efficiency by starting a concierge service and by meeting regularly with Major Developers to understand any issues they may be having. It was suggested that Sydney Water consider a similar approach.

4.5.4 Value Makers' priorities for Sydney

Additional priorities identified by Value Makers included:

- Plan for provision of a range of alternate water sources, particularly for non-potable uses, due to a changing climate and future water shortages. Value Makers stressed the criticality of community education on how to conserve water and take on a water scarcity mindset, which they acknowledged will be challenging following recent flooding. In addition, they identified that increased rainwater harvesting, capture, and recycling (rainwater tanks, underground storage, stormwater capture, desalination) should be part of a secure water future for Greater Sydney.
- Increase network maintenance as a result of ageing infrastructure and a growing population. Value Makers, specifically plumbers, have seen the number of leaks and breaks increasing, along with frequent complications around backflows in customer properties. They expressed an urgent need for Sydney Water to continue maintaining infrastructure to manage renewal costs, and to minimise the risk of significant network failure in future years (which they foresee happening). They said that without this, there will be a period in the coming years where Sydney Water will need to wear (and pass on to customers) extensive infrastructure replacement costs.
- Sydney Water is perceived to have insufficient knowledge of their existing infrastructure, which results in inaccurate information being made available to Value Makers. Value Makers, specifically those in construction, engineering, and plumbing, expressed frustration with Sydney Water's database and maps of the underground network. They reported that the actual underground network frequently contradicts Sydney Water's written plans, resulting in many examples of network damage. Value Makers suggested Sydney Water use new technology or other innovative methods to carry out a survey of all assets, enabling accurate information to be provided to key stakeholders.
- Inaccuracies in information also extended to billing issues for Value Makers, with property managers regularly impacted by meter number issues and incorrect data, leading to tenants being charged incorrectly or for other tenants' usage. They indicated that a lack of responsiveness from Sydney Water further amplifies these issues.
- Increase timeliness of responses to queries: Value makers described turnaround times of up to 3 weeks for what they described as simple enquiries. Understanding expected service levels around response times and communications is a critical component of Phase 2 of the engagement program and will be further explored in future engagement reports.

4.5.5 Service Critical High Businesses' priorities for Sydney

Additional priorities identified by Service Critical High Businesses included

- Organisational challenges that are holding Sydney Water back from meeting the needs of Service Critical High Businesses. When considering Sydney Water as an organisation, stakeholders described there being an ageing workforce overall, but also a loss of experienced consultants. They had also observed increased outsourcing and raised concerns about inadequate resourcing and slow response times. Service Critical High

Businesses suggested that Sydney Water needs to adopt a much stronger customer focus, be more proactive and responsive to client issues and opportunities, and be better at following through, taking ownership over issues (rather than outsourcing), and minimising the need for customers to “chase” Sydney Water. These was a belief that Sydney Water needs to become more agile and responsive to build confidence among Service Critical High Businesses.

- Reducing carbon emissions, using innovative methods. With Service Critical High Businesses themselves working towards reducing carbon emissions, they felt it is critical that Sydney Water does the same. They agreed that achieving net zero carbon emissions should happen as soon as possible, provided it remains commercially viable. Service Critical High Businesses saw a myriad of opportunities for Sydney Water, as a government organisation, to trial more innovative methods to work towards net zero emissions.

5 What we heard: customer priorities for Sydney Water

In this section...

This chapter outlines the findings from the qualitative components of Phase 1. This includes findings from 2 customer forums (n=86 attendees in Sydney, n=90 attendees in Parramatta), 6 focus groups with CALD community members, 2 focus groups with First Nations peoples, 6 focus groups with small to medium sizes businesses, and 10 individual or paired interview sessions with people living with disability.

5.1 Context

There have been some marked shifts in the expectations and priorities of customers in recent years. Since 2019, we have undertaken a wide range of research with Sydney Water to understand customer needs and wants. A core part of this work has been talking to customers to understand how they connect with water and wastewater and what these 'terms' mean. **In reviewing where customers were in 2019, and, where they are in 2022, we can see things have changed. Water and wastewater as 'concepts' mean something different now.** Water's perceived value, use, and impact has also changed. This is often still transactional in nature with people being focused on how water is used, its taste/smell, when it is used, what it is used for, and ways in which it may be wasted or not used properly. However, people displayed considerably more 'future-focused' and 'preventative' thinking when considering the value of water and how it is used/misused. While much of this change will be driven by external influences, including drought and floods, it is important context in understanding priority areas and developing the final pricing model.

Customer forum (**Sydney**) September 2022

Customer forum (**Parramatta**) September 2022

5.1.1 Customers now expect preventative action, not just transactional

In 2022, there was a strong preventative context to community discussions around water and wastewater use, which has not always been present in previous work conducted for Sydney Water. 'Prevention' in this instance, was centred on 'mitigation' – specifically uses or interactions with water and wastewater which would mitigate against the two main risks identified by the community; drought and flood. This 'mitigation' focus was particularly present in the Western Sydney community discussions, where recent experiences of flooding pushed prevention-based actions/priorities to top-of-mind needs.

- Strategic use of 'grey' water to future-proof the community against drought and the need for restrictions (particularly for use in public bathrooms, green spaces, etc.) – this was generically expressed as 'harvesting' water for future use and as a reduction in 'wastage'.
- Strategic management of Purified Recycled Water (PRW)/'grey water' in non-drought periods to ensure consistent practices during times of drought.
- Improved catchment and storage processes (specifics undefined at this stage) to provide opportunities for recycling or 'grey water' use during drought.
- Strategic management of dam overflows (noting this is beyond Sydney Water's remit).

Customers also identified flooding, among other external factors, can contribute to taste and odour events with Greater Sydney's potable water supply.

The emergence of preventative strategies indicates it is likely these aspects will feature more highly in the customer priority set in 2022 than in previous years and will need to be incorporated into quantitative prioritisation research and willingness to pay exercises. It is important to note that while these elements appear to be shifting in importance/increasing priority, the core 'hygiene' aspects of water provision such as 'clean and safe', 'tasting good', 'efficient repairs', etc., remain critical to customers and their importance should not be discounted.

The MaxDiff relative importance exercise (detailed in chapter 7 of this report) provides a greater understanding of each element's relative priority to aid with strategic decision-making.

5.1.2 We have observed a stronger community focus

As mentioned, in previous research, when customers talked broadly about water and wastewater, the core focus of discussions was transactional. These elements were still heavily present in 2022,

but there appears to have been a shift toward a greater understanding of the community benefit and use of water – from the individual to the community. This shift included a focus on:

- Water usage for parks and gardens to maintain amenity, regardless of rainfall
- Communal accessibility of water (drinking fountains, etc.)
- Access points to community water (gyms, public pools, essential services such as fire and aged care, etc.)
- Negative impacts on enjoyment driven by issues associated with water pollution, including access to swimming spots and stagnant/smelly water pooling in public places)

Based on this, it seems likely that community-based priorities will feature highly in the customer priority set for 2022, particularly in relation to the strategic use of water at the community level to maintain amenity and ensure equitable access to water and its benefits to the whole community.

5.1.3 There are differences by region in expectations of Sydney Water

Different regions appear to understand/interact and engage with water and wastewater in different ways. Insights from the customer forums show that

- Customers in the Northern, Inner, and Southern areas were more likely to include 'future-focused' priorities or considerations when thinking about their needs now and into the future. Broader macro-level environmental considerations (such as 'net zero', transformative technology implementation to increase efficiency/performance/quality) were mentioned more often by these cohorts.
- Western and Far Western areas were more focused on 'mitigation' based priorities at the community level. 'Mitigation' in this context related to the ability to smooth out water availability highs and lows to prevent interruptions to quality, to prevent the need for restrictions, and to maintain the quality of water regardless of its availability.

These differences are likely the result of different 'water experiences' for different regions and the demographic profile of the regions. Flood events in Western Sydney may underpin this 'mitigation thinking', while negative personal experiences and associated impacts appear to be driving an increased prioritisation of advanced planning as a way to mitigate impact. In Northern/Inner/Southern regions of Greater Sydney, where personal experiences of flood related impacts are less common (or more area-concentrated) and where the socio-economic status of customers is traditionally higher, the focus was more on efficiency.

The presence of differences by region is not a cause for concern and was anticipated. These differences have been discussed further in this report. These differences need careful consideration when developing the overarching priority and costing structure for all catchment areas.

Despite these shifts, the fundamentals of Sydney Water's service delivery remain critical

While customers identified priorities that sit at the broader community level, it is important to note that basic priorities remain. Access to clean water, maintaining quality standards (not necessarily improved quality), addressing leaks or breaks in a timely fashion, and ensuring infrastructure is well maintained are all still critical to customers – these are generally the first priorities identified and discussed. Across customer forums and discussion groups/interviews, there continues to be a strong degree of trust and engagement with Sydney Water, underpinned by delivery of these baseline priorities.

5.2 Customer interactions with water and wastewater

Customer expectations of, and priorities for, Sydney Water are largely driven by the experiences they have had with water and wastewater in their homes and communities.

To encourage customers to think about the full breadth of Sydney Water's role, customers were asked to complete a worksheet that outlined the positive and negative interactions they (and others) have had with water and/or wastewater. Interactions listed were many and varied and are summarised in Tables 3 and 4.

Table 3 Positive interactions with water and/or wastewater

Positive interactions with water and/or wastewater	
Individually or at home	When reflecting on positive interactions with water and wastewater at home, the responses were consistent across both the Sydney and Parramatta forums, and were centred around the following key areas: • **Constant access to reliable and clean water.** Customers described water as being readily available, clean, odourless, and safe for all household uses (drinking, washing, cleaning, gardening, cooking, showering, toilets etc.). • **Water facilitating wellbeing.** Customers also acknowledged that water plays a key role in facilitating wellbeing at home. Specific examples included relaxing in a warm bath, watching the kids run under a sprinkler on a hot day, keeping pets clean and healthy, helping people to grow veggies, providing water access for local birds and wildlife. • Feeling as though water and wastewater **bills are reasonably consistent, and appropriately fairly priced**.

In the local community or neighborhood	The role of water in creating attractive and thriving local spaces was mentioned repeatedly by customers as delivering positive interactions. Specifically, when it came to: • **Keeping local parks clean, healthy, and beautiful.** Customers spoke of local parks, gardens, golf clubs and playgrounds being kept green and healthy, allowing people to enjoy these recreation spaces, and leading to more picturesque local communities. They also said the availability of clean and working toilets allow for longer periods of enjoyment at these open spaces. Customers were particularly positive about schemes that use recycled water or harvested rainwater to irrigate parks, reserves, ovals or playgrounds in their local community. • **Local built features in the community** also help facilitate positive associations with water. Examples included bubblers, water fountains, and public pools and community gardens, which foster a sense of community, wellbeing, and provide amenity. • **Local business** was also mentioned as supporting the community to have positive interactions with water. This included the availability of local car washes, coffee shops, hairdressers, and the Regatta Centre (raised in Parramatta).
Across Greater Sydney	In addition to positive interactions already mentioned, at a Greater Sydney level, customers spoke positively about water in the context of: • **Supporting safe communities.** There were two elements raised in this area. Firstly, keeping public health as a priority through the supply of clean and safe water, and the efficient and hygienic removal of wastewater. Customers spoke of trusting Sydney Water to get this right and felt reassured knowing they don't have to worry where water comes from or whether it's safe to use. Secondly, water contributes to public safety in times of bushfire – with firefighters able to access large volumes of water to fight fires, therefore keeping the community (people and property) safe. • **Supporting major industry.** Manufacturing (especially drinks manufacturing i.e., Schweppes, Coca-Cola) and farming/agriculture were industries identified as being heavily reliant on water. Access to water helps support these, and other industries, to contribute to the Greater Sydney economy. • **Facilitating recreation across Greater Sydney.** Customers spoke about positive interactions with water across Greater Sydney in major rivers, creeks, lakes, oceans, and waterways. Specific recreation activities mentioned included fishing, swimming, houseboats, kayaking, and water parks. • **Supporting the natural environment.** Customers spoke about the positive impact thriving waterways have on local flora and fauna, as well as public amenity, wellbeing, and enjoyment. Participants in the ***Sydney*** customer forum spoke of the need to consider future needs of Sydney, to ensure these benefits continue to be enjoyed with continuing population growth. In ***Parramatta***, customers spoke positively about water conservation efforts they were aware of. A key example of this included that new homes now require increased rainwater capture and grey water use as part of building/planning codes, saving potable water for the most important uses. Customers in Parramatta also mentioned feeling positive about water testing for traces of drugs, and education programs about wet wipes.

> I love that I can get excellent quality water just by turning on the tap and am grateful because for so many people in the world this is not possible.

Residential customer | Parramatta customer forum

> I love to see beautiful public gardens which only grow thanks to the water.

Residential customer | Parramatta customer forum

> I love to see local kids playing under a sprinkler on a hot summer day.

Residential customer | Parramatta customer forum

> Helps me feel fresh, clean and alive.

Residential customer | Sydney customer forum

> Good service in response to water supply issues/leakages. Good to find competent responders.

Residential customer | Sydney customer forum

> Preservation of local waterways good for nature & ecosystem - good for animals, kids - makes them happy and preserves the natural environment.

Residential customer | Sydney customer forum

> Ability to see all SYD Parkland in great shape makes you proud of city and allows for tonnes of leisure opportunities.

Residential customer | Sydney customer forum

On reviewing the positive interactions with water and/or wastewater, customers described feeling safe, lucky, satisfied, calm, spoilt, trusting, grateful, and an overall sense of wellbeing.

Table 4 Negative interactions with water and/or wastewater

Negative interactions with water and/or wastewater	
Individually or at home	When reflecting on negative interactions with water and/or wastewater at home, the responses were consistent across both the Sydney and Parramatta forums, and were centred around the following key areas: • **Perceptions of water being 'wasted'.** Customers were conscious about conserving water and become frustrated when water is 'wasted'. Specific examples of 'water wastage' included long showers, leaking taps/toilets, full flushes, having to leave taps on for water to run hot, and rainwater overflowing gutters, rather than being captured. They saw non-captured rainwater as being 'wasted' to the stormwater system. • **Lack of lower-quality or recycled water options.** Having to use 'clean' water on the garden also felt wasteful of precious potable water. Customers wanted to see more in-home recycling options for rainwater and/or wastewater (grey water recycling, rainwater tanks etc). They advocated for a lower-quality or recycled water option for use outside the home. • **Water aesthetic issues during/following extreme weather events.** Although accepting that the network will occasionally be impacted, customers expressed concern about taste and appearance during/following extreme weather events. • **Water aesthetic issues generally.** Outside of extreme weather events, some customers were dissatisfied with the taste (chemical/chlorinated), smell and appearance (murky, floaters) of water, and inconsistencies in water aesthetics between streets/suburbs. • **Perceived inequity in billing.** Some felt single-person households were unfairly disadvantaged compared to multi-person households. Non-individual billing for apartments also created frustration as people are less accountable for their usage. • **Frustrations with unplanned outages.** When unplanned outages occur, especially during peak times, it interrupts customer routines and created frustration. • **Forced water restrictions.** Customers understand that in drought, restrictions have a role, however being unable to water gardens is a source of frustration. • **Cost and damage to homes and gardens from water/wastewater events.** Customers spoke of damage to homes and gardens from leaks, breaks, poor drainage, or blockages. This created inconveniences of time, cost, and damage. • **Fluctuations in water pressure.** Participants in the ***Sydney*** customer forum also expressed frustration with water quality scares in previous years, specifically, Giardia.

In the local community or neighborhood	In the local community, negative experiences with water and/or wastewater were typically linked to perceptions of water being wasted or impacts on waterway health. • **Seeing water being 'wasted'.** This not only included seeing people within the community wasting water (e.g. hosing down concrete driveways or ignoring restrictions), but also extended to the actions of local government (leaving sprinklers on during a storm, perceived lack of stormwater re-use), and Sydney Water itself (allowing water from breaks to continue flowing down the street, not repairing leaks/breaks quickly enough or not being repaired the first time, resulting in repeat issues). • **Waterway health issues.** Pollution in waterways was a major source of frustration. Customers see litter in stormwater and local waterways and are concerned this will flow into the ocean, negatively impacting marine life. Stagnant water in local parks, reserves and waterways is also a point of frustration, resulting in dead fish and mosquitos, which presents potential public health risks (beyond the frustration of not being able to use or enjoy these spaces). • **Drainage problems** were also raised repeatedly as being a point of frustration. Poor drainage in local streets, parks and reserves restricts public access to, or enjoyment of these spaces as pooling water becomes mouldy and stagnant. Participants in the ***Sydney*** customer forum spoke of a lack of public access to water for humans to drink; bubblers, water stations etc.. In ***Parramatta***, customers mentioned feeling frustrated with restrictions experienced when in drought conditions, and the impact this has on the amenity of streets, parks, and other open spaces.
Across Greater Sydney	Customers also frequently commented on water wastage and waterway pollution when considering negative interactions with water/wastewater across Greater Sydney. In addition, customers raised • **Perceived lack of infrastructure maintenance, leading to increased leaks and breaks.** Customers spoke about being negatively impacted by leaks and breaks, which they attributed to a lack of infrastructure maintenance, and a need for more proactive cleaning, monitoring or maintenance to minimise the number of unplanned leaks and breaks. • **Concerns for insecure water supply in dry periods.** The frustration for customers isn't necessarily about having to live under restriction conditions, but that they don't believe enough is being done to future-proof the water supply. Customers expect Sydney Water to future-proof the network form the perspective of a changing climate, but also to guard against the strain population growth will continue to place on the network. They wanted to ensure that network capacity is being increased to meet the demands of a growing population. Participants in the ***Sydney*** customer forum also mentioned feeling frustrated with restrictions experienced when in drought conditions, and the negative impact this has on people's lives. In ***Parramatta***, customers wanted to see Sydney Water ensure there is sufficient infrastructure to support growth and development in Greater Sydney and questioned whether there is scope to increase the amount of wastewater that is recycled.

Is water quality in waterways influenced by Sydney Water? If so, would be nice to clean up waterways such as Parra River.

Residential customer | Parramatta customer forum

Anytime it rains I feel sad to see water going down the drain and into the oceans.

Residential customer | Parramatta customer forum

Some waterways used to be swimmable but are now too polluted - e.g. Parra river.

Residential customer | Parramatta customer forum

I had the sewerage system overflow out the front which then caused leakage and smell.

Residential customer | Parramatta customer forum

Wastage in parks & gardens - sprinklers on in middle of rain storms.

Residential customer | Parramatta customer forum

Pollution of waterways through littering ends up in waterways.

Residential customer | Parramatta customer forum

We're using 1.5 billion liters but only recycling 100 million liters. Could it be more?

Residential customer | Parramatta customer forum

We have a number of pipe bursts in our street and it took weeks for Sydney Water to fix the problem. We have been told that the problem is with old pipes..

Residential customer | Sydney customer forum

Seems a waste watering the garden and flushing the toilet with drinking water.

Residential customer | Sydney customer forum

I have no separate water meter so feel I subsidise others. Sydney Water tell me Strata decides bill, Strata tells me its Sydney Water responsibility.

Residential customer | Sydney customer forum

Capacity - Apart from desal how are increasing capacity to meet growth?

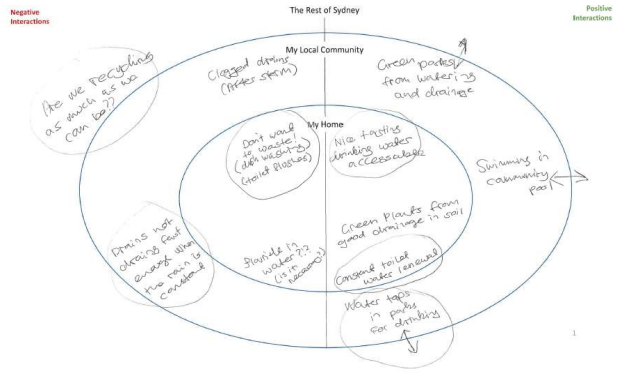
Residential customer | Sydney customer forum

A lot more infrastructure should be allocated to building/creating dams or water storage so in years of good rainfall e.g., 2022, we are doing our best to harvest/conserve rainwater for years to drought

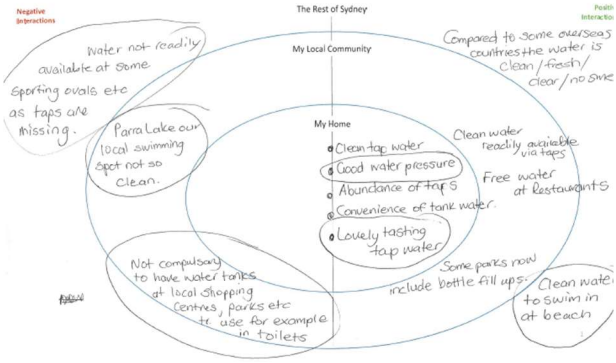
Residential customer | Sydney customer forum

On reviewing the negative interactions with water and/or wastewater, customers described feeling anxious, unhappy, angry, frustrated, worried, terrible, and concerned.

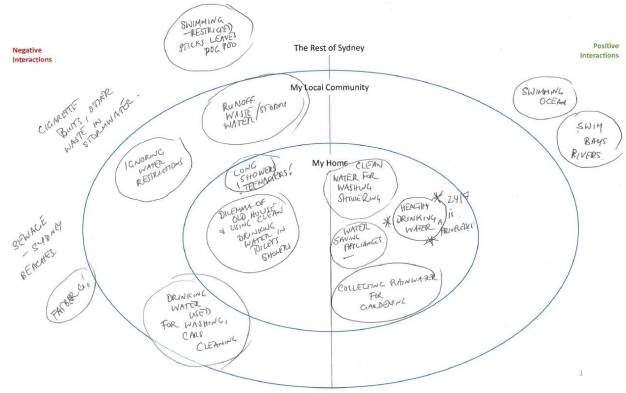
Some example outputs from the positive and negative interactions task are shown below.



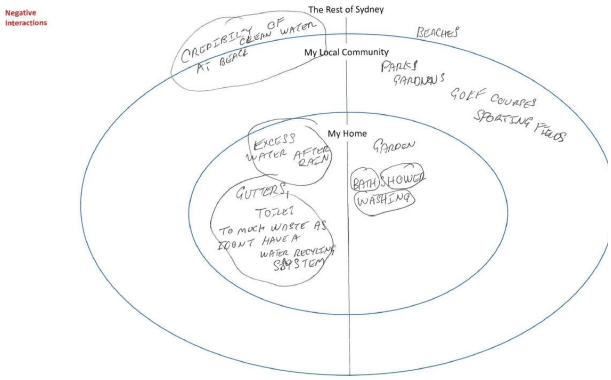
Customer completed positive/negative interaction task (**Sydney customer forum**)



Customer completed positive/negative interaction task (**Parramatta customer forum**)



Customer completed positive/negative interaction task (**Sydney customer forum**)



Customer completed positive/negative interaction task (**Parramatta customer forum**)

5.2.1 Differences observed across subgroups

SME	Positive feedback unique to SME customers • Water as a facilitator of business such as cafés Negative feedback unique to SME customers • Increased impact in the case of unplanned outages. How long will water be out? Do I send staff home?

First Nations	Positive feedback unique to First Nations customers • Fishing and boating activities • Bathing children Negative feedback unique to First Nations customers • Disrespect for culture - specifically linked to out of scope discussions about Warragamba Dam (see specific quote below for context). • Dirty swimming holes from pollution in waterways > Have to do this for our kids. No choice - DOCS checks. They should understand what it's like to have lots of kids and cousins. **First Nations customer** | Focus group > They keep talking about making the Warragamba Dam bigger and flooding Gungungurra mob sacred sites. People fighting for culture and for their rights but government doesn't want to listen. It won't even stop floods apparently, just a big money earner for the builders. Our cultural ways didn't make floods happen and we lived with the land and the water seasons. No access to water rights, something like the mob out west have only 1% of water to use and it's their water and their land. **First Nations customer** | Focus group > Can't trust the river or creek. Kids can't just go and have a swim and have fun because water is too bad or full of crap. **First Nations customer** | Focus group
CALD	Positive feedback unique to CALD customers • High quality of water in Greater Sydney (customer who speaks Mandarin) • Access to good running water all the time, *"feel privileged compared to our homeland"* (CALD customer who speaks Arabic) • Perception that water in Sydney is cheap compared to other countries, where people pay a lot for the service, but get very little due to restrictions (CALD customer who speaks Arabic) • Sydney Water's website that allows the community to have their say and to be updated on what's happening *"… community consultations are very beneficial to the new generation to voice their needs"* (CALD customer who speaks Arabic)

	> Heard about drain worms coming out from the tap in China/Taiwan, but haven't seen that in Sydney, so think the quality is good. **CALD customer (Mandarin) | Focus group** Negative feedback unique to CALD customers • Difficulty finding plumbers quickly enough after finding a leak or break, and a reluctance to contact a plumber because plumbing is an expensive service, not as affordable as in China (CALD customer who speaks Mandarin) • Belief that potable water is a waste of clean water to use for flushing toilets. Other countries (Hong Kong, United States etc.) are using grey water for toilet flushing (CALD customer who speaks Cantonese) • Health concerns that drinking tap water may negatively impact health in the long term, due to traces of chemically treated water from chlorine and lead (CALD customer who speaks Korean) • Some unaware that Sydney Water was also responsible for wastewater (CALD customer who speaks Korean)
Individuals living with a disability	Positive interactions unique to individuals living with disability • Access to swimming pools for hydrotherapy • Consistent access to hot showers for pain management when needed • Ability to maintain a garden, which support mental health and wellbeing Negative feedback unique to individuals living with disability • Affordability for individuals living on a disability support pension and who may require heavy water user to manage their disability

5.3 Translating customer interactions into priority outcomes for Sydney Water into the future (unprompted)

The intent of the interactions exercise was to encourage customers to appreciate the breadth of Sydney Water's remit. Of the identified interactions, customers selected the most critical interactions, and explored their priorities for Sydney Water (the outcomes they want to see Sydney Water achieve) in each broad area. Table 5 summarises the outcomes customers identified as priorities for Sydney Water into the future. It's important to note that these priority outcomes were completely unprompted and were driven by the positive and negative interactions customers have had with water and/or wastewater.

Table 5 Customer priority outcomes for Sydney Water (unprompted)

Key focus areas for customers	**What should Sydney Water do in this area?** ***Customer priorities for Sydney Water (in customers' own words)***	
Access to reliable, safe, quality, tasty and clean water, and safe and hygienic wastewater removal (for residential and business customers), now and into the future	Comments from participants in the Sydney customer forum: • *Ensure current supply performance is sustainable as the population grows* • *Keep servicing my area the same way* • *Take steps to minimise taste / appearance and odour issues* • *Alternate sources of water for a resilient water future (e.g. Lower quality water available for irrigation purposes – recycled water, desalination etc)* • *At present the water is excellent. This needs to be maintained*	Comments from participants in the Parramatta customer forum: • *Alternate sources, can ensure long-term visibility via dams* • *Sydney water should find a way to clean used water without chemicals or a solution to have access to untreated clean water* • *Sydney water should always ensure clean water- always* • *Fresh clean quality reliable drinking water* • *Nice clean water so that people drink it without getting worried that they might get sick* • *Clean water will become available to the growing population*
Bills need to be consistent, fair priced and equitable (single vs multi-person households, non-individual billing for apartments)	Comments from participants in the Sydney customer forum: • *Invest in new technology to increase efficiency* • *If we do not have enough capacity for increasing demand it will impact availability and price* • *Yes. To keep deals at a fair price and have hardship programmes for those having trouble paying their bills*	Comments from participants in the Parramatta customer forum: • *Restructure how billing is done, reward customers for sensible water usage* • *People who are unable to pay bills should be granted allowances* • *Should put price before profit* • *That prices don't increase too much that they become unaffordable for those on low incomes*

Local parks stay clean, healthy, and beautiful, supporting recreation, local flora and fauna and picturesque communities	Comments from participants in the Sydney customer forum: • *Yes, they should encourage councils to create more rain gardens to help with run off and to help beautify our streets* • *Supply recycled taps for use in the garden & parks* • *All parks and gardens would have sprinklers that cannot operate if there is rain* • *All parks and sporting fields would be lush, grain and safe*	Comments from participants in the Parramatta customer forum: • *Yes- they use stormwater ETC for filling local parks, they can ensure all Parklands have an adequate supply, fill of water* • *Work with councils to create better play areas in local parks* • *Sydney water should invest more money into automatic irrigation watering systems in local parks* • *Devise a way of utilising rainwater in parks within the community*
Water-based recreation is possible in Greater Sydney, and waterways are kept clean and healthy (fishing, swimming, kayaking etc)	Comments from participants in the Sydney customer forum: • *Waterway pollution is minimised (litter, stagnant local waterways impacting marine life and recreation options)* • *Yes, they are responsible for the polluted storm water running into the harbour* • *Look to find solutions to reduce the possibility of waterways being contaminated and reduce the likelihood of water being wasted*	Comments from participants in the Parramatta customer forum: • *I want to see clean rivers and a clean harbour and care about the ocean life* • *better environmental outcome for our waterways, oceans etc. This moves further to affect the world- Antarctica etc - sifting of rubbish before it hits the waterways* • *Yes, to continue keeping our waterways clear of pollution for swimming*
Water conservation is considered in planning laws and in all new developments	Comments from participants in the Sydney customer forum: • *Work with local (council/govt) & developers to set expectations & standards* • *Initial conversations take place with local government and councils so planning of future developments consider access to water* • *Ensure water pressure can meet the increased demand caused by overdevelopment in our community*	Comments from participants in the Parramatta customer forum: • *Encourage water tanks in homes.* • *Work with local councils to provide recycled water networks* • *Work with councils and local authorities to provide better usage of rainwater* • *Build storage for this recycled water. possibly more important than desalination* • *Recycled water systems fit in every home*
Water 'wasted' by customers is avoided	Comments from participants in the Sydney customer forum:	Comments from participants in the Parramatta customer forum:

through education (long showers, unnecessary watering etc)	• *Educate customers on their personal responsibility and water wastage* • *Customers are empowered to save water* • *There is a responsibility to manage water sources sustainably for everything that relies upon it/ Public involvement also required, so public education/awareness needed. Can schools talk about it in early education*	• *education - water waste - schools and more broadly* • *everybody working together to do their part for the greater good- education* • *Currently we are very complacent so public education*
Water 'wasted' by Sydney Water and Councils is minimised (sprinklers on during storms, breaks and leaks, slow to repair leaks and repeat issues)	Comments from participants in the Sydney customer forum: • *Yes, keep maintenance up. Get tickets/repair done in quick time* • *Better maintenance & faster workers to fix the problem* • *No water wastage from leaks on public roads and parks etc* • *Water wastage leads to reduced availability. Will lead to higher costs*	Comments from participants in the Parramatta customer forum: • *It makes me upset to see water running down the street, wasting much water* • *It can take up to a week to get a burst water main fixed. This is wasting so much water*
The negative impacts of unplanned outages on customers, are minimised	Comments from participants in the Sydney customer forum: • *If there is damage to properties as a result of leaks or breaks, they are repaired swiftly* • *They should fix the issue ASAP or at least notify the customers what will happen next* • *No unplanned outages: planned outages sufficiently notified and limited in time*	Comments from participants in the Parramatta customer forum: • *Yes. They should have a better method of communicating outages and progress reports on their website and phone services. Water is crucial- we need updates* • *A user-friendly website/ app that is promptly updated in regard to outages* • *All water outages are planned and communicated effectively*
Water restrictions (in drought) are infrequent because Sydney water is prepared and ready for the impacts of	Comments from participants in the Sydney customer forum: • *Can they keep rainwater from wet years to use in dry years* • *National parks have experienced extreme weather the last few years (bushfires, floods). I imagine supplying water to these regions is*	Comments from participants in the Parramatta customer forum: • *A consistent supply free of restrictions* • *if done well we should be able to reduce water restrictions during droughts* • *More water reserves and no restrictions in a drought*

a changing climate	*logistically challenging, but they will need to become more resilient as climate change worsens* • *Do everything that they can so we do not face restrictions again*	• *Pre-emptive measures to avoid more water restrictions* • *Yes, look at implementing wastewater recycling to increase drought resistance*

> Safe & clean water should be amiable to everyone with very little outages and never any contamination.

Residential customer | Sydney customer forum

> Limiting water wastage - including broken pipes, taps, & house/sprinklers left on.

Residential customer | Sydney customer forum

> Yes, they could put in better filtering/collection of rubbish/plastics at pipe outlets. If they don't act, how water world system will be irreversibly destroyed. Advertising campaign.

Residential customer | Sydney customer forum

> I feel grateful the water supplied to my home is so reliable and I can rely on fairly static water bills.

Residential customer | Parramatta customer forum

5.3.1 Differences observed across subgroups

SME	*No notable differences noted*
First Nations	Additional outcomes identified by First Nations customers • Free clean water for everyone • Kids need water and families need to let them use it without worrying about huge bills • Fairness for families • Promote and support aqua sports and rehab for our Elders • Respect renters as much as owners • Respect and value First Nations culture properly
CALD	Additional outcomes identified by CALD customers • Reassure people in-language that they can drink the tap water (CALD customer who speaks Cantonese) • Provide multi-lingual promotional material with water bills (CALD customer who speaks Cantonese) • Continue providing opportunities for the community to contribute to decision-making through consultation (CALD customer who speaks Arabic)

	• Create a regular system where new strategies are implemented to use healthier ways to treat drinking water and reduce use of chlorine and lead (CALD customer who speaks Korean)
Individuals living with disability	Additional outcomes identified by individuals living with disability • Maintain affordability for individuals living with disability, particularly if management of their disability requires increased water usage • Increase access to smart meters to support individuals living with disability manage their water use

5.4 Customer expectations of Sydney Water across key prompted areas

5.4.1 Water conservation

Customers overwhelmingly supported Sydney Water increasing investment in programs that help to conserve water. Initiatives widely supported by customers included

- **Education and marketing:** Customers supported Sydney Water investing in marketing and education programs in schools and homes that teach people how to conserve water. There was a belief that this education should happen now, so that in future droughts, water conservation habits are already in place. Customers suggested a range of strategies to appeal to customers who might be motivated differently, such as:
    - *We're all in it together*: When talking about dam levels, Sydney Water could encourage customers to work together and feel a sense of ownership over doing what they can when dam levels are decreasing.
    - *There's a benefit to you*: Customers also suggested promoting that 'using less water will decrease your bills – there's a benefit to you in this'.
- **Subsidies for water capture or conservation in homes:** Customers identified a range of investments they could make, at a household level, to conserve water. Examples included smart meters, rainwater tanks, water-saving taps and showerheads etc. Customers suggested Sydney Water could offer rebates or subsidies for customers purchasing these items.
- **Investment into infrastructure to support alternate water sources into the future:** Customers see preventative action as critical in Greater Sydney's water supply into the future. They expect Sydney Water to invest now into alternate sources of water for the future. Customers specifically suggested increased capture and re-use of rainwater, stormwater, and wastewater, and increasing access to desalinated water.
- **Influence planning rules:** Customers agreed Sydney Water has a role to play in influencing or advocating for water conservation rules as part of building and planning

codes and in the planning of new developments. Specific suggestions included rainwater tanks, grey water systems, and on-site recycled water options where possible.

- **Role model water conservation by reacting quickly to leaks and breaks:** Importantly, customers expect to see Sydney Water role model water conservation behaviours, specifically, investing for the future and reacting quickly to leaks and breaks in the network. If Sydney Water are slow to respond and customers see significant water loss, it discourages them from water conservation efforts in their homes and gardens.

When it comes to being financially rewarded for conserving water, customer reactions were mixed. Many identified that reducing water use would naturally result in bill savings as they are using less water. There was interest in understanding a benchmark level of use, and then tracking household use against this benchmark through smart meters. The reward then comes with some positive messaging from Sydney Water, along with customers knowing that they are 'doing their bit'. An alternative could be rewarding customers who have reduced their use through credits, redeemable for tap inspections or other checks within the property to ensure water is being used as efficiently as possible. It was noted that these reward programs should also be available outside of periods of drought.

> There could be a financial reward – discounts or a credit balance could add up, redeemable for tap inspections or free water checks in the home.

Residential customer | Parramatta customer forum

Perhaps more interesting to customers was the idea of penalising those with higher water use. Customers (business and residential) who continuously or excessively exceed water use benchmarks could potentially be penalised, through a higher cost of water over a certain threshold.

> Put the price up if people are using more than x level of water. This would need to take into account the size of household etc.

Residential customer | Sydney customer forum

5.4.2 Customer expectations in times of drought

In an extreme drought scenario, if forced to imagine a maximum level of restrictions in place, customers were willing to reduce their water usage between 20% and 50% (based on an average person's daily use of 180 litres). Some identified the following behaviours as those they would be open or willing to adhere to:

- Timed showers (2 minutes suggested)
- Showering every other day (though some felt this was a step too far)
- No car washing, or with a bucket only
- No, or minimal, watering of gardens
- Stopping use of swimming pools
- Closure of public pools
- Turning off public water fountains
- Water use for personal hygiene only
- Avoiding small loads in the washing machine and/or dishwasher
- Only recycled water for gardening

Others suggested capping individual water use (no more than 100 litres per person) or reduced pressure/access in non-peak times (e.g. midnight to 4am). In all cases, customers agreed that the priority should be on ensuring people remain healthy and hygienic, and that water should always be accessible for drinking and maintaining personal hygiene. Customers were however, willing to compromise on washing cars or watering gardens to ensure water remains accessible for these critical uses.

> If it's yellow let it mellow.
>
> **Residential customer** | Parramatta customer forum

The length of time restrictions should be in place was difficult for customers to articulate, however the majority felt as though restrictions could be tolerated for the length of the drought, accepting that this could be for a period of several months. Customers felt that these expectations are important to manage and Sydney Water need to be clear about timelines.

> When dam levels return to normal, there should be a gradual decrease in water restrictions. As long as the drought is impacting community, restrictions could last for years.
>
> **Residential customer** | Sydney customer forum

Customers said extreme restrictions should be reserved for the most severe droughts, with customers only expecting to be under these strict rules a handful of times within their lifetime. When asked specifically how many times they would expect to be subject to these harsh restrictions, responses ranged from once or twice in a lifetime, through to once every 15 to 20 years.

Customers also felt that rather than using restrictions as a lever in times of drought, more proactive and preventative measures should be taken when Greater Sydney is not in drought. This included the steps mentioned earlier in this section such as investment in water conservation activities and programs, and infrastructure that will protect Greater Sydney from having to experience extreme level restrictions (increased use of recycled water, stormwater harvesting, desalination etc.).

5.4.3 Greening and cooling

In times of drought, customers had mixed views on how they expect local parks, gardens, and trees to look. Some felt they should match how their gardens look – 'brown', 'dead' and 'depleted', whereas others considered the community wellbeing benefits of public parks and gardens and felt they should retain some greenery.

> It should look fantastic. Parks should be a cool space; it would have mental health benefits and would be a place for animals too.
>
> **Residential customer** | Parramatta customer forum

There is some tolerance for different levels of restrictions being placed on public open space, compared to residential properties, acknowledging this community benefit. A careful balance needs to be struck however, between maintaining a green and lush park, and providing a

comfortable / accessible place for recreation. Overservicing during a drought can lead to customer frustration.

When it comes to greening and cooling communities, customers expect Sydney Water to:

- Partner with, or advocate for, Councils to plant natives or drought resistant/tolerant plants. Customers felt this should be the default option, ensuring plants are tolerant of dry conditions and drought.
- Collaborate with Councils to use smart irrigation systems. Customers expect local parks, gardens, and trees to be watered in the most effective way (checking soil moisturiser levels for example), at the most effective time of day (early morning or late evening to avoid evaporation). This smart irrigation approach is something customers expect not only in times of drought, but as business as usual.
- Use lower quality, non-potable water for irrigation (such as desalinated water, recycled water, harvested rainwater or stormwater).
- Protect significant or ancient trees as a priority.
- Ensure new developments have adequate green space, irrigated with lower quality, non-potable water.

> You need some green space in each suburb – at least 5km from home. But it shouldn't be watered with drinking water.

Residential customer | Parramatta customer forum

> Use recycled water for watering so you don't deplete other sources. If recycled water is being used to keep parks green, that's ok, but we need to be educated about it, so we know, or else it'll piss us off!

Residential customer | Parramatta customer forum

5.4.4 Wastewater discharge to oceans and rivers

Customers agreed that Sydney Water *should* improve their current practices and invest to further reduce the number of pollutants released into the ocean, and into inland waterways (e.g., creeks, lakes, rivers). There was a strong belief that more should be done to recycle wastewater rather that releasing it into oceans and waterways, and customers felt there would be considerable benefits of recycling and reusing this wastewater. Customers saw recycled wastewater as being an affordable, climate-independent, environmentally sustainable alternate water source, which would also have the benefit of not releasing potentially harmful pollutants into oceans and waterways, and negatively impacting marine life.

> Why can't it be recycled to make usable again? We need to increase the capacity for recycling water.

Residential customer | Sydney customer forum

> We can't be dumping crap in the crown jewels.

Residential customer | Parramatta customer forum

5.4.5 Water aesthetic (taste, odour)

Customers had a low tolerance for taste or odour issues, unless in the rare case of a significant natural disaster (i.e., major flooding event, bushfire). Outside of a natural disaster situation, customers expect Sydney Water to consistently provide access to safe, clean, water. They saw this as Sydney Water's fundamental role and had a low tolerance for water aesthetic issues they see as preventable with adequate infrastructure maintenance.

Again, beyond a significant natural disaster, customers identified the following as likely causes of water aesthetic issues:

1. **Water supply has become contaminated.** Customers see this as a very rare and very serious scenario, where the water supply has become contaminated (through some serious fault, event, or even a terrorism scenario). This was viewed as a once in a lifetime event, where people may need to boil water prior to use or avoid using mains water at all. It is a situation customers felt Sydney Water should aim to avoid at all costs.
2. **Lack of network maintenance leading to murkiness / discolouration of water**. Customers perceived odour or discolouration as being linked to poor or inadequate maintenance of the network. Although customers understood that the infrastructure is ageing, they said Sydney Water should be maintaining or renewing the existing infrastructure to avoid these issues. Some had tolerance for experiencing aesthetic issues once per year (for a short period), provided the water remained safe to drink.

Very few customers had experienced a water aesthetic issue and were therefore reluctant to support Sydney Water doing more in this area. Customers were supportive of Sydney Water prioritising maintenance to maintain service levels around aesthetics, as well as communicating well in the rare event of a water aesthetic issue.

Customers said timely and clear communications from Sydney Water are critical in these situations. Customers expect to be notified as soon as possible via an immediate channel (SMS is preferred) with clear instructions as to what to do (e.g., run the tap for 2 minutes before use, boil water before use etc.) and for how long to take these measures.

> If you buy a beer and somethings wrong, you'd return it because you paid for it. Sydney Water need to maintain the current costs and maintain the current quality.

Residential customer | Sydney customer forum

> …only do more if it's a wise economical decision. But they should put some investment into it if events become more frequent.

Residential customer | Parramatta customer forum

5.4.6 Carbon emissions

There was very low awareness of what Sydney Water is currently doing to reduce carbon emissions.

Customers became aware, through the research, that Sydney Water is a major energy user, however remained mixed as to whether Sydney Water has a greater responsibility for reducing carbon emissions than other government agencies or private organisations. Some felt Sydney Water should move no faster than the NSW Government target of 2050, whereas others saw Sydney Water as an environmental organisation more than a government entity and were therefore held to a higher standard of environmental responsibility with more urgent expectations for reaching net zero (between 2030 and 2040).

> No, it's everyone's responsibility. They should reduce [carbon emissions] in line with everyone else.

Residential customer | Sydney customer forum

> Yes, they have a responsibility to do this as a big energy user, but they're equally responsible as other energy users, as a natural resource there is a moral obligation at 'top of food chain'.

Residential customer | Parramatta customer forum

Customers agreed that as a large energy user and government entity, Sydney Water should educate the community about what they are doing to reduce carbon emissions and when they aim to reach net zero. Although reaching net zero is important to customers, it was not the most important priority for all customers, with many agreeing that Sydney Water should remain focussed on quality and maintenance first.

> It's not the number one priority… it's a nice to have. Don't divert money away from quality.

Residential customer | Sydney customer forum

> It should be top, but realistically it isn't. They need to balance ongoing maintenance with broader, wider, environment concerns.

Residential customer | Parramatta customer forum

Customer forum (**Sydney**) September 2022

Customer forum (**Parramatta**) September 2022

5.4.7 Differences observed across subgroups

SME

5.4.7.1 Droughts and restrictions

Specific business initiatives aimed at nurturing a water scarcity mindset were well received, when directed at both staff and customers (e.g., signs in toilets and next to sinks).

SME customers were highly supportive of smart meters and other technology to support their business increase awareness of usage. They were cognisant that they may not always be able to change their usage of water if it is critical to the functioning of their business, so knowing that they can monitor it provided some reassurance.

5.4.7.2 Carbon emissions

Some SME customers expressed reluctance to paying higher bills now, to cover the cost of investment decisions that would be unlikely to impact their business in the future (i.e., 30+ years into the future).

> If you're telling me - Oh, let's pay for something for thirty years away, I'm not investing in that… Five to ten years, yes, I'm here, and I'm there for you, and I will support you. You know what I mean.
>
> **SME customer** | Focus group

First Nations

5.4.7.3 Droughts and restrictions

When it came to expectations in times of drought, First Nations customers widely supported all water saving and recycling efforts discussed. This, however, was not

restricted to drought periods; these customers felt it was important to take a preventative approach that should mitigate water loss and shortages for inevitable and cyclical dry seasons and drought periods.

> Our old people knew how to read the seasons and knew their country. Never took too much and always in harmony with the land. We have to get back to those old ways.
>
> **First Nations customer** | Focus group

First Nations customers suggested Sydney Water could provide discounted billing or incentive programs for households that used water saving approaches that led to reduced household consumption. There was considerable concern, however, for the need to address socioeconomic disadvantage so that First Nations families and households would not be disadvantaged by lack of access to water saving devices, installations, or technology rollouts, by living in rental accommodation rather than owning a home.

Additionally, there was a concern for some that discounts or assessments for water savings needed to be offered on an equitable basis. First Nations families with more children and multi-generation households were commonly noted as significant risks. There were also concerns that some groups may take advantage of schemes to benefit financially, while not actually doing the water savings. Some drew analogies to land clearing and carbon schemes that *"look good on paper but always end up being a rort"*.

Some also noted the difficulty for rental households to benefit from water saving toilets and flush devices (which they aware of from their workplaces or shopping centres), as they were not in control of the hardware or refitting options. They felt that to be equitable, those with lower incomes or welfare-dependent should have their water saving options provided free or heavily subsidised, and that any rebates should be on the basis of 'per head' or household size, rather than assuming a standard non-kinship household.

Conversely, many recommended that non-compliance should be penalised in times of drought where clear breaches were apparent (not a simple neighbour complaint but proven active non-compliance). However, First Nations customers had concerns about penalty approaches due to perceived bias or stereotyping of First Nations consumers by regulators and investigators.

> The government always says it's doing this or that for the poor old home owner whose place is now worth a million bucks. But they do nothing for any of us who have to rent.
>
> **First Nations customer** | Focus group

> Tell me how it's fair that the big McMansions going up round here pay the same or less than us living in an old fibro housing commish joint?
>
> **First Nations customer** | Focus group

First Nations customers' tolerance of water restrictions was based on the high variability of water use per day in different households. For example, a higher number of children in a household is likely to significantly increases water usage as a normal part of life. Although customers expressed tolerance of the idea of essentially halving average daily use, the main risks identified were in ensuring that basic household activities were maintained, including clothes washing and baths for children.

> They have to understand if you have five kids you are going to have to use more water than some old fella living in his unit.
>
> **First Nations customer** | Focus group

Timeframes for drought conditions were difficult for people to judge or predict. For some, the recent COVID-19-related lockdowns and endless rolling timeframes created a high degree of concern for long periods of restrictions and monthly (calendar month) periods were thought by many to be the most easily recognised and achievable timeframes.

> Just like another Dry July only it's about water.
>
> **First Nations customer** | Focus group

> Keep it clean and simple, none of this check your app, look on the website, watch the f***ing news every night.
>
> **First Nations customer** | Focus group

5.4.7.4 Greening and cooling

On the topic of greening and cooling, the perspectives of First Nations customers were consistent with findings from other groups. One exception was a request for special areas in local communities involving older trees and community gathering

areas should be prioritised for water supply to ensure the health of the local ecosystem and maintenance of *"a few nice areas even in the hardest times"*. First Nations customers also agreed that First Nations cultural knowledge and land practices should also be a focus of any water management planning and decisions to provide water to parks or green spaces.

5.4.7.5 Managing impacts on oceans and waterways

First Nations customers questioned why *"bad water"* and pollution was allowed to enter the system in the first place, expecting Sydney Water to have barriers, filters, or other mechanisms in place. The connections between inland rivers, waterways and oceans were regarded as an important issue, with cultural fishing activities and changes to the oceans being commonly reported by those frequenting these areas. Treatment and recycling of wastewater, as well as improvements to reduce pollutants, were strongly supported.

> The more people coming into Sydney the worst it's going to get. They're building a whole new city down the road near the airport what do they think that's going to do to the river?
>
> **First Nations customer** | Focus group

Finally, First Nations customers advocated strongly for dual signage at publicly-accessed waterways, including use of First Nations place names and First Languages in signage.

> This here is all Darug land. Even though I'm Wiradjuri I think the local language should be used on all their things.
>
> **First Nations Customer** | Focus group

> Bet they don't even know what Warragamba means.
>
> **First Nations customer** | Focus group

CALD

5.4.7.6 Droughts and restrictions

Korean participants had very low levels of awareness and understanding of alternate water sources; although they may have seen signage about parks or gardens being irrigated with bore water, some were uncertain how it applies to them. There was scepticism around the safety of desalinated water and most were unsure how to use rainwater tanks.

Korean participants were understanding of the need for, and use of restrictions, however were conscious about some not being able to reduce their water use as

	much as others. Instead of rewards for reducing use, they suggested implementing savings on water saving devices. Korean participants were also less likely to be willing to considerably reduce their use throughout restrictions, instead willing to somewhat reduce their water use over a longer period. **5.4.7.7 Managing impacts on oceans and waterways** A Mandarin speaking customer was concerned about the water quality in Sydney after hearing that the Japanese government releases their radioactive wastewater into the Pacific Ocean – they questioned how Sydney Water is going to respond to that and keep Greater Sydney's water safe for use. Korean participants had a very low awareness of the water cycle and wanted to learn more. One participant suggested a water "museum" to help people understand how the water and wastewater system work. There were great concerns from Korean participants about the potential risks from wastewater outflows into oceans and waterways. They were particularly concerned for potential contamination of fish that are caught and eaten. **5.4.7.8 Water aesthetics** CALD customers (Cantonese speaking) were particularly satisfied with water quality and felt that Sydney Water should tell more people in-language, that the tap water is safe to drink. They felt it should be advertised in-language in water bills.
Individuals living with a disability	**5.4.7.9 Droughts and restrictions** When it came to expectations in times of drought, the only unique consideration for individuals living with disability was consideration that some may need more water to manage their disability. Sydney Water could work with these customers to understand their unique needs and to develop a way forward that ensures the wellbeing of individuals is not compromised. For example, discounted access to smart meters, or discounted access to water saving devices (e.g., water saving showerhead). Increased access to smart meters was also identified as having a supplementary benefit of minimising the need for meter readers, which were described as an unnecessary and sometimes stressful 'knock on the door'.

5.5 A summary of customer priorities for Sydney Water into the future

Following the process of generating priorities for Sydney Water, Kantar Public staff collated and coded these priority outcomes before presenting them back to customers as part of the customer forum. Participants then used a short online survey accessed via QR code to prioritise the identified outcomes.

How did the prioritisation task work?

Thanks so much everyone. I need you to now break every research rule – I need you to get out your phones! On the screen at the front you'll see a website – I'd like you to go to this website and enter the code you see on the screen. Let your table lead know if you need some help.

Once you're into the website, you'll see a list of all of the priority areas discussed tonight. You might see some that your table discussed, and you might see some that are new to you – they are ideas from other tables. You also have 100 points to use.

Take a minute or so to look at the list, and once you've had a good look, we want you to assign your 100 points to the outcomes that you want Sydney Water to focus on in the next 10 years. You can share your points across these outcomes however you want; you might give 5 outcome areas 20 points each, or you might give 10 areas 10 points each. Or you could give one area 50 points, and 50 areas 1 point! Whatever works for you. The main thing is that you give however many points you want, to the areas you want SW to focus on.

The following outputs were generated, live in the sessions.

Customer forum (**Sydney**) September 2022

Customer forum (**Parramatta**) September 2022

Customers who participated in the Sydney customer forum prioritised continuing to provide safe, clean and quality water (21%), and reduce and remove pollution from waterways (12%). Customers in Sydney also rated water conservation activities as a priority, specifically in-home technology, and community education around being water smart (9% and 8% respectively).

Table 6 Customer identified outcomes for Sydney Water (Sydney customer forum)

Priority outcomes identified	%
Continue safe, clean and quality water supply and access	21%
Reduce and remove pollution from waterways	12%
Provide in home technology to help homes be water smart	9%
Provide / deliver community education programs / resources about saving water etc.	8%
Routine maintenance to prevent and fix things like leaks	7%
Reduce the need for water restrictions by having the right infrastructure	7%
Facilitate ways to sustainable recycle and collect water	7%
Be a world leader / set standards around sustainability through technology and innovation	5%
Incentivise / reward low use	5%
Use technology to reduce operating costs and reduce bills	5%
Subsidise water savings / capture devices e.g. shower heads, water tanks	4%
New construction should have grey water alternatives	4%
Penalise high water use	4%
Maintain public green spaces during restrictions (with recycled water)	3%

Customers in Parramatta similarly prioritised continuing to deliver clean, quality water (12%), however equally prioritised proactive network maintenance and investment in infrastructure for recycling wastewater (both 12%)

Table 7 Customer identified outcomes for Sydney Water (Parramatta customer forum)

Priority outcomes identified	%
Be proactive in managing pipes - replace / repair before broken	12%
Develop more infrastructure for recycled water / wastewater	12%
Maintain clean, quality water supply	12%
Be proactive in managing and storing stormwater / rain water (in local areas and for in homes)	10%
Reward / promote water saving products / devices in the household	7%
Maintain affordability	7%
Educate customers (e.g. recycling wastewater, net zero, waterwise etc)	6%
Maintain clean and safe waterways / water recreation areas	5%
Incentivise / reward low water users	4%
Partner with renewable energy companies / hydro electricity	4%
Penalise high water users	4%
Be proactive and modernise communications (e.g. live updates app, traffic light system for water restrictions, dam levels)	4%
Focus on ways to encourage use of recycled / wastewater	3%
Use more recycled water in green / public spaces	3%
Educate / incentivise industry to use recycled water	3%
Limit water restrictions / be pre-emptive to avoid	2%
Reduce chemicals in drinking water	1%
Publish net zero targets and work towards them	1%

5.5.1 Differences observed across subgroups

SME	SME customers held consistent views to the views already reported in this section. There were two exceptions: • Specific business initiatives to nurture a water scarcity mindset were well-received, when directed at both staff and customers (e.g., signs in toilets and by sinks). • SME customers were highly supportive of smart meters and other technology to increase their awareness of usage
First Nations	Some of the priorities of First Nations customers aligned with the findings already mentioned, including the continued supply of clean and safe supply of drinking water, and improvements to infrastructure (including water supply, recycling, pollution screening, weather mitigation, and pressure consistency for inner city residents). Additional priorities identified by First Nations customers included • Cost reductions and prevention of bill shock • Adequate supply to meet the needs of large families, especially children's needs • Pricing to reflect larger family needs and community realities • Faster and more personal customer service systems, including shop front outlets and non-screen or non-call centre methods • Cultural integrity and respect, including First Nations land use approaches, and understanding local group priorities.
CALD	CALD customers (Cantonese speaking) were particularly satisfied with water quality and felt that Sydney Water should tell more people in-language, that the tap water is safe to drink. They felt it should be advertised in-language in water bills.
Individuals living with disability	Additional outcomes identified by individuals living with disability included: • Maintain affordability for individuals living with disability, particularly if increased use is associated with managing their disability • Provide increased access to smart meters to support individuals living with disability to manage their water use

Consolidating the findings across all customer research inputs revealed the following list of customer-led priorities for Sydney Water:

Customer priorities	Why is this important to customers? Qualitative insights
Minimise and reduce breakages in the network	Customers saw water as a precious, valuable resource. Seeing water gushing, flowing, or even leaking down the road or in a public space was frustrating and seen as wasteful. When Sydney Water is slow to react to leaks and breaks (and allow water to continue to leak for days or even weeks), it created frustration among customers, signalling Sydney Water must not value water conservation to the same extent.
Improved stormwater management, storage and capture in local areas and homes	Customers believed Sydney Water could make better use of rainwater and stormwater, by capturing, storing, and reusing this water where a lower quality of water is tolerable (e.g. irrigation), therefore saving potable water for consumption and hygiene. Harvested stormwater and rainwater could also be used to maintain parks, gardens, and trees within communities, contributing to the amenity of communities.
Improve resilience to drought (through increased uptake and usage of recycled water or desalination)	Customers recognised the challenges associated with population growth and changing weather patterns, and they saw how this could lead to more frequent water shortages in times of drought. As such, the need for additional water sources is an important priority for Sydney Water.
Reduce the period in which Greater Sydney experiences or requires water restrictions.	Customers recognised that Sydney Water cannot control the weather; but having water restrictions in place is a constraint on people's lives and minimising the time spent with these in place is viewed as a priority for Sydney Water. Proactive measures taken now (stormwater capture, increased wastewater recycling), to minimise restrictions in the future, was viewed favourably.
Increase water savings / reduce water usage across Greater Sydney AND improve community knowledge about water and how to minimise usage	Customers accepted that even outside times of drought, they have an individual responsibility to save water and reduce their personal use of water. They felt Sydney Water plays an important role in helping customers to reduce personal use, and by increasing their focus on these important community-based water saving programs. Customers suggested education programs, communications, and rebates/subsidies for in-home water saving devices as ways Sydney Water could do this.
Maintain water quality and cleanliness at current levels	Given the essential role water plays in people's lives, maintaining access to a clean and safe drinking water supply was seen as critical for customers. Greater Sydney's water is trusted, and ensuring that current standards do not slip, was a high priority for customers.
Ensure waterways and water recreation areas remain clean and safe to use	Customers acknowledged the benefits of local waterways to amenity, physical and mental health, and social connectivity. Waterways that are safe to use were highly valued; and waterways that are polluted or unsafe for swimming were undesirable and should be avoided.
Ensure water and wastewater bills remain affordable	As a fundamental human need, customers felt strongly that water and wastewater bills must remain affordable, and that the benchmark for affordability should be applied based on lower incomes to maintain affordability for all. Customers also supported the use of hardship programs to support those who may be financially vulnerable.

Proactively modernise communications with customers (e.g. live updates on dam levels, traffic light levels for water restrictions)	Customers recognised that gaps exist in their knowledge about water and wastewater. They believed that more communication and information would help them manage their water use more effectively and feel more informed around planned and unplanned outages.
Contribute to a cooler environment through the maintenance of green public spaces	COVID-19 highlighted the importance of usable public spaces and their impact on physical and mental health. Customers wanted to see public spaces planted and irrigated smartly, to maintain greenery and amenity where possible, while keeping water use low. They also expected drought-tolerant natives to be prioritised in new open space areas, and irrigation with lower quality grey or recycled water, not potable water.
Reduce the discharge of wastewater pollution to rivers and the ocean beyond current standards	Customers felt a strong desire to protect oceans and waterways, and expected Sydney Water to hold itself to a similar standard. Customers felt that far too much wastewater is sent out into the oceans and waterways, when it could be treated and re-used for a range of benefits (reducing waterway pollution, alternate water source etc.).
Reduce the risk of drinking water experiencing issues with odour or taste after occasional changes in the environment (such as flooding, heatwave, fire or high wind events)	Customers understood that some events impacting water aesthetic (taste, odour, appearance) are outside of Sydney Water's control (such as in the case of extreme weather events or natural disasters). However, they felt that poor network maintenance amplifies the problem and leads to more frequent instances of taste and odour events.
Reducing net carbon emissions to zero by 2050	Customers felt that Government must lead the way when it comes to achieving net zero carbon emissions and therefore feel that Sydney Water should also reduce net carbon emissions to zero by 2050.
Minimising the impact of outages (both planned and unplanned)	Customers, both residential and business, valued consistent access to water. Outages can disrupt home life and cause lost production and sales for businesses.
Maintaining a standard of customer service that meets or exceeds customer expectations	Customers had an expectation that they will receive a high level of customer service when interacting with Sydney Water through a range of available channels. Customer expectations around seamless and easy digital interactions are increasing, with strong interest in engaging with Sydney Water online.

6 What we heard: stakeholder priorities for Sydney Water

In this section...

This chapter outlines the findings from one-on-one interviews with stakeholders identified by Sydney Water as part of Phase 1. This includes:

- 6 interviews with local and state government representatives
- 6 interviews with Major Developers
- 6 interviews with Value Makers, and
- 6 interviews with Service Critical High Businesses.

6.1 Stakeholder context and introduction

A range of critical stakeholders were identified by Sydney Water and engaged in Phase 1, through a series of one-on-one interviews with a team of highly experienced Kantar Public researchers. Interviews were semi-structured in nature, allowing the conversation to flow openly and naturally, in line with the challenges and priorities identified by individual stakeholders, and allowing for adequate exploration of their specific experience with Sydney Water.

It is critical to note that each stakeholder type had an entirely unique relationship with, and perspective on, the priorities Sydney Water should be focussed on into the future. Although some similarities existed, and are summarised below, there were specific nuances within each stakeholder type. It is for this reason that this chapter summarises the feedback from each stakeholder group as discrete groups.

Consistent priorities for Sydney Water across stakeholder groups were

- A need to address the age of infrastructure and the ability for the current network to support increasing demand of a growing population
- A need to respond to a changing climate and guaranteeing a secure water supply into the future (including through increased capture/harvesting, water conservation and recycling)
- The criticality of educating the community about how to conserve water and take on a water scarcity mindset, which may be challenging following recent flooding
- Reviewing Sydney Water's ways of working, to ensure the organisation is set up to enable and facilitate timely communications and efficient decision-making
- Reducing carbon emissions

6.2 Local and state government representatives

6.2.1 Relationship and interactions with Sydney Water

Government representatives described a reasonably collegiate relationship with Sydney Water. The stakeholder's role within the specific government authority often dictated the extent to which they have an ongoing strategic or operational relationship with Sydney Water, with connections regularly made at the assets, operations, technical and engineering roles, and to a lesser extent at the more strategic levels.

Bills for council facilities are typically dealt with through a facilities team, and paid for by an accounts team, suggesting that there are multiple touchpoints for Sydney Water to consider when engaging with government as a stakeholder type. Additionally, critical information may not be best shared through bills as they are typically received by a Finance or accounts team.

Interactions between Sydney Water and government representatives typically take place in the case of

- Emergency responses such as sewer overflows, leaks and breaks
- Shared interests around parks, gardens, and reservoirs
- Collaborative environmental endeavours
- Monitoring water quality and agal blooms via Sydney Water's monitoring lab
- Monitoring usage across Council owned/operated facilities, and
- Receiving and paying bills.

Although a very small number of stakeholders mentioned having access to a dedicated account manager within Sydney Water, those that did said this person was often unavailable and slow to respond, forcing stakeholders to liaise with Sydney Water via the main switchboard.

6.2.2 Challenges facing Sydney Water, and the outcomes that must be prioritised

Challenges identified by government representatives, and therefore priorities for Sydney Water to address, included:

- **Resilience of the existing infrastructure network** – government representatives held concerns for some of Sydney Water's existing infrastructure, acknowledging that some of the network (in the Sydney CBD for example) is almost 150 years old. They felt that a proactive, efficient, and cost-effective monitoring and replacement program will be required to ensure that these assets continue to function effectively and are replaced in a timely manner with as little disruption as possible. Stakeholders felt this is likely an expensive exercise for Sydney Water and costs need to be managed accordingly, which prompted some concerns from stakeholders about Sydney Water's ability to execute this.
- **A changing climate and guaranteeing a secure water supply into the future** – government stakeholders stressed the criticality of acting now to future-proof water and wastewater infrastructure across Greater Sydney into the future. This included ensuring the network has sufficient scope to expand to support new developments and can cope with

demand through increased urban infill. Stakeholders anticipated that future-proofing the water supply in a changing climate needs to incorporate a range of sources, ranging from desalinated water through to recycled water and stormwater. Stakeholders expected Sydney Water to be planning for the future now (through climate adaptation plans and strategies) and believed that an organisation such as Sydney Water has the tools and resources to be able to do this effectively. Stakeholders were open to collaborative efforts in this area.

- **Low price of potable water makes it challenging to commercialise recycled water** – because potable water is so cheap, it makes selling recycled water more challenging to commercialise for local government (and potentially Sydney Water), as customer or community expectations of the price of water are low. Stakeholders suggested Sydney Water could encourage uptake of recycled water, promoting the benefits of using recycled water over potable water beyond price (where appropriate).
- **Increasing costs to do business** – following recent global events, government representatives identified that the cost to do business (cost of labour and materials in particular) is increasing. They anticipate that this will impact Sydney Water, placing additional pressure on the cost of capital and operating costs.
- **Minimising pollution in waterways to facilitate recreation opportunities** – again with a growing population and increased urban infill, the need for open space and waterways that facilitate health, wellbeing, and social connectivity opportunities is critical. Government representatives identified a need to ensure waterways, beaches, and other places remain clean, safe to use, and free from pollution, despite increased use and therefore potential for increased pollution.

Government representatives felt that the highest priority areas for Sydney Water should be addressing the ageing infrastructure, reducing carbon emissions to reach net zero, investing in increased recycled water capacity, and placing a dedicated focus on innovation, collaborating across government, industry and customers to reach a shared benefit.

Other priorities, albeit less commonly mentioned, included:

- **Increasing access to the network** – government representatives identified a range of ways for Sydney Water to increase connections to the network, including through supporting new developments with new infrastructure (currently Sydney Water is perceived as holding up new developments considerably), and increasing access to the wastewater network in the Blue Mountains (which was described as having to truck out wastewater and trade waste to the North Shore).
- **Providing more information about Sydney Water assets** – including where the network is, specifically. Government representatives referenced many times they had been required to contact Sydney Water to ascertain where assets are and been disappointed with a lack of clarity in the response from Sydney Water.

- **Increasing access to smart meters for local government facilities** – this would enable facilities management teams within councils to be aware earlier of potential leaks/breaks outside of billing processes.

Government representatives were open to the idea of joint initiatives and collaborative efforts to see Sydney Water make progress against these priorities.

> Sydney Water needs to look at its continuing asset management, be upfront and say to the people, look, we want to provide the service, but in in the provision of that service to you this is what the impact is going to be on you. Put it right in front of someone and if people can come out and say we don't want to increase the rates… we say well that could compromise our ability to provide the service, so you know don't beat around the bush. Put all your cards on the table.

Local government representative | In-depth interview

> "Yes, it's the same challenge I have in roads operations. You know, I'm dealing in many areas with roads that have been there for 50 years, and you know sort of now we're having to manage that you you've got the same challenge as me it's managing your assets with not a lot of increase in the income which is coming into that area."

Local government representative | In-depth interview

6.2.3 Reactions to prompted areas

Droughts and water restrictions

This area was an extremely high priority for government representatives. Restrictions are an important lever for maintaining access to water for critical uses during times of extreme drought, and for influencing the behaviours of customers and community. Stakeholders stressed the criticality for Sydney Water in continuing to explore and utilise alternate sources of water (recycled, rainwater, stormwater etc), and educate the community on these sources, to demonstrate and communicate forward planning, as well as build security and resilience into the supply.

Greening and cooling

With local government having a large remit in the management and maintenance of local parks, gardens, and reserves, greening and cooling is a critical consideration for these stakeholders. As mentioned above, access to alternate, climate-independent sources of water is crucial to maintaining parks and open space to continue to offer benefits to the community and the environment.

Local government representatives felt there is a key role for Sydney Water to play when it comes to exploring and advocating for alternate water sources for irrigation. However, these customers quickly challenged any suggestion that Sydney Water has a role to play in the development and maintenance of parks and open space, beyond support with alternate water sources for irrigation.

Stakeholders agreed that any increases in service levels for parks and open space must be achieved without increased demand for potable water and instead, stakeholders agreed that future irrigation must come from recycled water.

Managing impacts on oceans and waterways

Rather than releasing wastewater into oceans and waterways, stakeholders said they are keen to see Sydney Water explore capturing, treating, and reusing this wastewater for irrigating parks, gardens, trees and open space. This would also serve additional benefits of minimising contaminants being released into oceans and waterways and mean there is less reliance on potable water for irrigation.

Where stakeholders represented harbour or beachside LGA's, they spoke of the importance of these waterways in the context of community health and wellbeing outcomes. Minimising any negative impacts on these waterways was seen as critical and stakeholders felt that Sydney Water should be striving towards ensuring these waterways are accessible to community members as much as possible, and that closures should be avoided at all costs.

Water aesthetics

Relative to other priorities, aesthetics were of a lower priority to government representatives. They felt that beyond the occasional disruption or issue, the current performance is satisfactory. They cautioned that no reduction to service should be considered, being a fundamental component of Sydney Water's offer, however no additional level of service is required either.

Carbon emissions

Government representatives agreed that Sydney Water needs to show leadership when it comes to reaching net zero carbon emissions and aim for an ambitious target of net zero by 2030, or well in advance of the NSW Government target of 2050.

Stakeholders were uncertain about what Sydney Water is specifically doing to reduce carbon emissions. Although they recognised that action is likely being taken by Sydney Water, they believed that more could be done. Additionally, stakeholders said that as a major utility with extensive land ownership, Sydney Water has a responsibility to be ahead of other organisations and role model their efforts, commitments, and achievements to others.

> From a sustainability viewpoint, I'd look at expanding desalination… there's merit in doing that. … They can also create a lot of power, so I'd be trying to offset that initiative with possibly solar or wind power, at those locations to assist in managing environmental costs.

Local government representative | In-depth interview

> Water treatment to the highest standard possible. Ensuring microplastics etc. are not contributing to decline in biodiversity. The beach lifestyle is a valuable part of why people live here, they need to ensure that beaches are safe and water quality is good.

Local government representative | In-depth interview

6.3 Major Developers

6.3.1 Relationship and interactions with Sydney Water

Major Developers described quite a tumultuous relationship with Sydney Water. Although some Major Developers interviewed acknowledged they have an account manager, they saw this person as a messenger rather than a decision-maker when it came to the specific issues Major Developers deal with in the context of Sydney Water.

Interactions between Sydney Water and Major Developers typically included negotiations around the establishment of services in new developments. Generally, those interviewed managed Greenfields developments in Western Sydney, which require timely establishment of water and wastewater infrastructure to service the new development.

There was consistent feedback from Major Developers that when it comes to these interactions, Sydney Water is unresponsive, reactive rather than proactive, and slow to work with. In the words of one Major Developer, the result of this is *"…costing millions while they wait".*

6.3.2 Challenges facing Sydney Water, and the outcomes that must be prioritised

Challenges identified by Major Developers included

- **Major Developers expected Sydney Water to improve the way it estimates demand for housing. The current model, from the perspective of Major Developers, is not working.** Major Developers believed Sydney Water needs to look beyond a 5-year time horizon towards the next 10 or 20 years into the future and be planning now for the investment required to provide services to these future communities. Major Developers wanted to see Sydney Water more involved and collaborative in the early stages of development planning, beyond simply looking at infrastructure delivery and connections to the network. They felt it was critical that Sydney Water's infrastructure delivery aligns with the demands of industry and does not in any way inhibit development, (which they felt was currently happening).
- **Linked to the point above, Major Developers expected Sydney Water to become more agile and flexible in the way they make decisions.** They saw decision-making at Sydney Water as being extremely slow and inefficient, feeling held up by the bureaucracy of the organisation. There was also a view that the IPART regulatory process also requires increased flexibility, in that Sydney Water starts the process 24 months before receiving the funds, limiting the ability to respond to new developments with agility and flexibility.
- **Major Developers see Sydney Water as being significantly under-resourced when it comes to delivering services to new developments. They expected Sydney Water to rethink their resourcing model and find efficient ways of working that speed up the delivery of major works.** Major Developers see a lack of adequate resourcing at Sydney Water as one of the factors influencing significant delays in establishing infrastructure for new developments. They felt Sydney Water should be exploring ways to create an increased resource base to expedite delivery, such as using the private sector.

- **Major Developers expressed great frustration with the slow speed of communications from Sydney Water. They expected Sydney Water to communicate in a more timely and collaborative manner.** Although this is explored further in Phase 2 of the engagement program, Major Developers expressed a strong desire for Sydney Water to improve timeliness of responses and approvals. The Department of Planning and Environment was used as an example of a process that works, where it has started a concierge service and meet regularly to understand any issues they may be having. It was suggested that Sydney Water consider a similar approach.

6.3.3 Reactions to prompted areas

The prompted areas with the highest criticality to Major Developers were carbon emissions and, to a lesser extent, droughts and water restrictions. Greening and cooling were seen as more of a local government remit, and water aesthetics and managing impacts on oceans and waterways were not at all relevant to Major Developers. and therefore other more critical areas to these stakeholders were prioritised as part of the discussion

Droughts and water restrictions

Although not their most critical priority for Sydney Water, Major Developers had some ideas for potential initiatives for Sydney Water's consideration in this area.

- Collaborating with Major Developers to reach efficient water use
- Introducing water restrictions when required
- Consider drought-based pricing structures to build appreciation for the value of water
- Consider treatment of wastewater closer to the source and reusing within the local community, rather than via deep-water ocean outfalls, enabling use of lower-quality water for non-potable uses
- Consider working with Major Developers and/or builders on a water-smart demonstration home with water saving technologies installed and a demonstration of water savings via these technologies. This collaboration may motivate consumers to make water conservation choices when in the home design and selections process. Similarly, Sydney Water could collaborate with universities undertaking research in this space

Carbon emissions

There was very low awareness as to what Sydney Water is currently doing or has done to reduce carbon emissions, and Major Developers felt that reducing carbon emissions was a key issue for Sydney Water, as it is all organisations.

As a government organisation, there was an expectation that Sydney Water be aligned, at a minimum, to the NSW Government target of net zero emissions by 2050, but Major Developers interviewed had mixed views about whether Sydney Water should be working towards a more ambitious net zero target (i.e., by 2030). If possible, most agreed that Sydney Water should be striving to achieve net zero earlier, following well researched and best practice approaches.

Greening and cooling

With much of the greening and cooling of new developments coordinated between Major Developers and local government, there was a strong desire for Sydney Water to stay out of this conversation, at risk of further complicating the situation, adding delays, and creating confusion. Major Developers interviewed outlined their required compliance with regulations for urban greening and cooling as prescribed by local government. If Sydney Water played an increasing role (e.g., could set new regulations) in this space, this would concern to Major Developers and could create confusion if there is misalignment in local government and Sydney Water regulations or standards.

Suggestions from Major Developers for Sydney Water when it came to greening and cooling included

- Collaboration with local government and Major Developers, where appropriate, minimising any potential for duplicated efforts
- Efficient use of infrastructure that is well communicated and coordinated across both levels of government, where appropriate
- Explore options for temporary use of recycled water in residential developments, in times of extreme drought (portable recycled water when in most need of irrigating public open space)

Managing impacts on oceans and waterways

Major Developers provided no commentary around managing impacts on oceans and waterways, as this was identified as much less relevant to their interactions with Sydney Water. This topic area had no impact on Major Developers, though one did identify an opportunity in Western Sydney to 'shandy' wastewater at the source, before releasing into oceans and waterways. Others supported Sydney Water reducing the level of wastewater being pushed into the ocean, but this was expressed as a personal rather than professional position.

Water aesthetics

As mentioned, Major Developers provided no commentary around water aesthetics as this was identified as irrelevant to their interactions with Sydney Water.

> They mis underestimated the rate of demand so are slower to keep up with services [than they should be]. Sydney Water won't service an area to the date specified. We make major purchase decisions on their servicing estimates. We can't commit until we know the infrastructure will be there. Surrounding areas in Leppington, Gregory Hills Edmonston Park Willowdale have all run out of supply. Constrained catchments. No wastewater or insufficient wastewater facilities means we can't produce homes. [hamstrings development exacerbates problems with housing shortages so it is a real problem for Sydney].
>
> **Major Developer** | In-depth interview

> Having the vision to see itself and see its place as being the enabler of new housing new development in the west in the Greenfields areas. Nothing can happen without them. Council can't approve development unless they are convinced services are going to be made available. We are about to settle a five-property sight 25 acre it as da cc we can pre sell it tomorrow but Sydney water won't service 2026. We need certainty to be able to buy land and that water and sewer is going to be available in the given time frame. More resources in planning to manage all the major projects that they have on. It is such a critical thing that their resourcing levels are paralysing the growth of Sydney.

Major Developer | In-depth interview

> I'm juggling chainsaws and they keep throwing snakes, lions, and scorpions at me.

Major Developer | In-depth interview

> Resourcing is probably the biggest thing – they seem to be inadequately resourced to fulfill their role. … The amount of delays that are being experienced is unprecedented and it's quite frustrating and costly to the business.

Major Developer | In-depth interview

> There isn't anyone who has been allocated as their relationship manager, I think now for close to 12 months. That's been permanent, that's a problem and that's basically the result of… they just can't seem to source the people. There is a lack of technical knowledge within Sydney Water, and I think there's a lack of technical knowledge on the latest technologies within Sydney Water and there's no individuals who you can actually go to and get advice.

Major Developer | In-depth interview

> I mean everything seems to have come to a bit of a crunch now, cause no matter who you go to in the industry, everyone's complaining about the same thing. There's no response from Sydney Water, there's no answers coming from Sydney Water. Turnaround times are slow, the workload that's out there is lower than what it was pre-COVID but they can't keep up with the workflow. I don't know why, I don't know where they lost people… it's just falling apart.

Developer | In-depth interview

> Stick to timelines, and it is brutal for us when they don't we have to walk away from projects. They Didn't select the new site for wastewater treatment plant in time and should have been on it five to ten years earlier it took such a long time to select the site. Then we had to get all their approvals licences to sort it out. We

> are relying on temporary infrastructure at the moment, the capacity is all used up. The down-stream infrastructure that need to be in place is not there. They over promised, under delivered. They need to be realistic about time frames.

Major Developer | In-depth interview

> The biggest problem is a delay in delivering wastewater services which is having near catastrophic consequences for us. They commit to time frames, and we commit to construction, and they don't keep to their time frames, and this leads to significant consequences for our cash flow. March was delayed to December and we need cash flow to keep it going. It delays revenue for 9 months, and its $10s of millions per project. When you are at a credit limit you can't go out and borrow another 50mil, we are stretching out our creditors and it's a really painful situation for our creditors who are caught in this. The problem for us is it is so critical, and we can't get them to respond quick enough and we are staring down the barrel of a $50 million gap in cash flow. It means we have to renegotiate contracts with vendors which costs substantial amounts of money and all these costs stem from a delay in connecting wastewater. A couple of weeks ago we walked away from $5 million dollars because we didn't have confidence that Sydney Water could connect services.

Major Developer | In-depth interview

6.4 Value Makers

6.4.1 Relationship and interactions with Sydney Water

Value Makers that were engaged in the research included plumbers, engineering consultants, property managers, landscape designers, and architects, and those in similar roles/professions. Although aware that they have a slightly elevated relationship with or connection to Sydney Water, Value Makers are largely unaware that they are considered a dedicated stakeholder group in the eyes of Sydney Water. Value Makers described a reasonably transactional relationship with Sydney Water, with their interaction types and frequency largely influenced by their profession.

Examples of interactions between Value Maker types and Sydney Water included

- For property managers - frequent interactions around billing and invoicing, reporting leaks/breaks, change of address requests, etc.
- For landscape architect / design / construction - limited interactions, project dependent, typically would have completed interactions around connections to new build, prior to this value makers works commencing, otherwise ad-hoc interactions.
- For engineering consultants - typically, at project design stage, when discussing water pipes, drainage design, council and Sydney Water liaison.
- For plumbers -frequently in contact with Sydney Water, usually to report leaks/breaks on customer properties, or if noticed in the street, often speaking with Sydney Water about backflow prevention, anything to do with Sydney Water infrastructure.

Most Value Makers did not have a dedicated relationship or account manager in place with Sydney Water (just one Value Maker interviewed had a formal arrangement), despite interacting frequently (in some cases every day). All stakeholders from this group were very receptive to the idea of having a more personalised and collaborative ongoing relationship with Sydney Water

6.4.2 Challenges facing Sydney Water, and the outcomes that must be prioritised

Challenges identified by Value Makers included

- **A changing climate and future water shortages will require community education and a range of alternate water sources, particularly for non-potable uses.** Value Makers stressed the criticality of educating the community about water conservation methods and encouraging a water scarcity mindset, given the climate continues to change. They acknowledged this will be challenging following recent flooding. In addition, they identified increased water harvesting, capture, and recycling (rainwater tanks, underground storage, stormwater capture, desalination), should be part of a secure water future for Greater Sydney.
- **Ageing infrastructure and increased network maintenance is required, with consideration of population growth.** Value Makers, specifically plumbers, see the number of leaks and breaks increasing, along with frequent complications around backflows on customers' properties. They expressed an urgent need for Sydney Water to continue maintaining infrastructure to minimise significant network failure in future years,

leading to a period where Sydney Water will need to wear (and pass on to customers) extensive infrastructure replacement costs.

- **Sydney Water lacks sufficient knowledge of their existing infrastructure and inaccurate information available to Value Makers is a significant pain point.** Value Makers, specifically those in construction, engineering, and plumbing, expressed frustration with Sydney Water's database and maps of the underground network. The actual underground network frequently contradicts Sydney Water's written plans, resulting in many examples of network damage due to inaccurate plans. Value Makers suggested Sydney Water use new technology or other innovative methods to carry out a survey of all assets, enabling accurate information to be provided to key stakeholders.

  Inaccuracies in information also extended to billing issues for Value Makers, with property managers regularly impacted by meter number issues and incorrect data. This has led to tenants being charged incorrectly or for another tenants' usage. Value Makers said a lack of ownership or responsiveness from Sydney Water further amplifies these issues.

- **Sydney Water's slow response times create pain points for Value Makers.** Value makers described turnaround times for seemingly simple enquiries taking Sydney Water up to three weeks to respond to, which creates delays for Value Makers in their own projects. Understanding expected service levels around response times and communications is a critical component of Phase 2 of the engagement program and will be further explored in the Phase 2 report.

The highest priority areas for Sydney Water, identified by Value Makers, is in the maintenance of the network and ageing infrastructure, and ensuring the network continues to meet demand into the future, with deep consideration for a changing climate and a growing population (reduced availability of water, yet increased demand).

> Ageing infrastructure… it's getting worse and worse. Not enough is being done to get on top of it and in time it will cause a major issue… we're going to reach a major infrastructure cliff and will need to drastically increase the price to be able to deal with it.

Value Maker | In-depth interview

> There is no doubt that their assets are ageing. You see these things happen on the news and see people's reaction to not having water for a couple of days… the human race has become a lot less tolerant of interruptions.
>
> The number one challenge is staying on top of problems with their assets and prioritising jobs as well as they can. They are under resourced they always have been. Most problems happen after hours as pressure builds at night - 99% of the time bursts happen late at night and that costs more to deal with.
>
> Sydney Water obviously know how old their infrastructure is, and the renewal of older pipes is important before they become a situation. Many pipes in the ground are over 100 years old. They need to get on top of the ones that are the

> highest risk. Knowing what is oldest and replacing it prior to it becoming a burst pipe requires a huge database. What I see happening is waiting 'til the situation arises, then fixing it, rather than doing prevention.

Value Maker | In-depth interview

> We will be facing extremes in the future. We need greater numbers of rainwater tanks, we need to be catching rainwater and storing it, underground storage and recycled water for irrigation.

Value Maker | In-depth interview

> As Sydney expands, are we going to continue to build on smaller blocks or will we increase the number of units? More units mean more people per square meter, and the infrastructure needing to service this number of people will need updating (e.g., pipe size / pump size). Everything needs to cope with increasing numbers of people.
>
> [Sydney Water] have to look at potential population growth, climate variables, land usage and the actual topography of land… what happens if Sydney continues to expand (beyond Blue Mountains, for example)? They need to consider the infrastructure and forward plan for this.

Value Maker | In-depth interview

> The timing to get [Sydney Water] to engage with us causes an issue. We have to get in touch a month before, and then they have a 2–3-week response time. They are responsive rather than proactive. Sessions like this are good, but we'd like a relationship. We are a private consultancy. They are our customers but also our advisors and service providers.
>
> This is about timing of response… provide great technical service and we entrust them, it's a shared responsibility. Ideally, it would be one week for a response or quicker, I want response in 2-3 days.

Value Maker | In-depth interview

6.4.3 Reactions to prompted areas

The prompted areas with the highest criticality to Value Makers were droughts and water restrictions, and carbon emissions. Greening and cooling, and managing impacts on oceans and waterways, were less, but still somewhat relevant to Value Makers, while water aesthetics was not at all relevant to Value Makers and therefore not discussed.

Droughts and water restrictions

Value Makers expected Sydney Water to be preparing now for a changing climate and increased frequency and length of dry periods. Like other customer and stakeholder segments, Value Makers believed firmly that restrictions should not be the only lever used in times of drought and that

Sydney Water should have back up plans in place (well in advance of drought) to guarantee a secure water supply to Greater Sydney.

In advance of drought, Sydney Water needs to be innovative, considering plants being used and advocating for gardens that include drought resilient plant life and water catchment areas that help water to be retained on site and ensure it makes its way into soil profile.

Water capture mechanisms suggested by Value Makers included overflow channels, secondary dams, condensation traps, reservoirs, alongside increased use of groundwater, recycled water and desalinated water.

Value Makers identified a challenge with restrictions being that people see these as 'prescriptive' or 'punishment' (even though it is no one's fault that we are in drought) and should instead be used as a back-up plan. Value Makers challenged Sydney Water to consider consumer focused interventions to drive the desired behaviours, prior to drought:

- Alternative technologies and water-saving devices that will help consumers and encourage them to practice water conservation behaviours (for example, smart meters)
- Community education - have frank conversations, such as *"in a few years' time, we'll be in a drought, we need to think about water conservation."* Encouraging personal responsibility for water conservation in the community and creating unity around a shared goal – *we're all in it together*. Value Makers did recognise this will be challenging following several years of La Nina, where flooding has presented more immediate challenges than drought.
- Lead from the front. Getting to leaks and breaks quickly, and proactively identifying leaks or breaks before a customer is aware, will demonstrate a commitment to water conservation at Sydney Water.

When water becomes less available, Value Makers also suggested Sydney Water may need to increase the price of water to help reduce demand.

Carbon emissions

Value Makers felt that reducing carbon emissions was among the more critical issues facing Sydney Water. As a government organisation, there was an expectation that Sydney Water be aligned, at a minimum, to the NSW Government target of net zero emissions by 2050. Value Makers felt that if achievable earlier, Sydney Water should be striving to achieve net zero as soon as possible.

There was very low awareness among Value Makers as to what Sydney Water is currently doing, or has done, to reduce carbon emissions, and there was much interest from this stakeholder group in receiving this information.

Value Makers supported Sydney Water acting now to reduce carbon emissions, and provided the following as suggestions for Sydney Water's consideration:

- **Consolidating Sydney Water's office space.** With the impacts of the COVID-19 pandemic on workplaces seeing a shift towards much more flexible work arrangements, Value Makers suggested Sydney Water encourage and enable hybrid and work from home

practices. This would have the benefit of reduced office space requirements and therefore a reduced carbon footprint.

- **Comprehensively reviewing Sydney Water's fleet policies and protocols.** An example was provided about one Sydney Water representative driving alone for up to 2-hours, return, in a diesel four-wheel drive, to attend a face-to-face meeting. The Value Maker who relayed this example said this was completely unnecessary and that default behaviours like this should be critically reviewed from the perspective of environmental impact.
- **Investing in innovative environmental thinking.** Value Makers encouraged Sydney Water to review the way they work and business practices with a 'think outside the box' approach, challenging the status quo and boldly trialling new approaches to minimising Sydney Waters carbon emissions.

Greening and cooling

While this area had lower relevance to Value Makers, they stressed the importance of the benefits of greening and cooling, and the importance of maintaining green spaces, especially in drought conditions. Like most other groups involved in the research, Value Makers expected to see Sydney Water capturing and using non-potable environmental water (rainwater/stormwater) for irrigating parks and open space.

Value Makers expected Sydney Water to be thinking expansively, strategically, and innovatively in this area, suggesting ideas like slowing down water runoff, directing through swales, therefore helping to contribute to greening, cooling, and enabling ecological support of the local environment.

Value Makers were keen to see Sydney Water demonstrate forward-thinking and thought-leadership in the greening and cooling space.

Managing impacts on oceans and waterways

Value Makers saw pollution in waterways as a significant problem, and something that should be addressed by Sydney Water. There was a desire to capture pollution before it reached oceans and waterways, potentially channelling it elsewhere for re-use. One such suggestion was to leverage technological developments and recycle compostable waste, converting it into fertiliser that could be used on plant life or crops.

Again, having lower relevance to Value Makers, their desire for Sydney Water to act in this space was based less on their perspective as a Value Maker, and more on what they believed is the right thing to do environmentally.

Water aesthetics

As mentioned, Value Makers provided no commentary around water aesthetics as it was identified as irrelevant to their experiences with Sydney Water.

6.5 Service Critical High Businesses

6.5.1 Relationship and interactions with Sydney Water

Service Critical High Businesses had the closest relationship with Sydney Water of the stakeholder groups engaged as part of the program. Many had long-term professional relationships with an account manager or key contact within Sydney Water, with whom they interact frequently and described positively. Having an account manager allowed large business stakeholders to contact Sydney Water directly and receive a response in a timely manner.

The greatest challenge with the account manager approach, as was identified by large business stakeholders, was that the relationships hinge on the individual account manager. If an account manager retires or leaves Sydney Water, stakeholders mentioned that often it can take many months, or longer, for an appropriate replacement to be found.

Examples of interactions had between major business customers and Sydney Water included:

- **Day to day contact, usually with an account manager.** This is typically for network maintenance, operational requests or other enquiries, on an 'as needed' basis.
- **Structured meetings with an account manager.** Most Service Critical High Businesses also mentioned being part of formalised meetings with their account manager to more broadly discuss how things are going. The frequency of these meetings differed depending on the stakeholder, with some meeting with Sydney Water monthly, whereas others did so much less frequently (6-monthly or annually).
- **Major change or investment discussions.** Stakeholders may initiate meetings if they are exploring changes to their business, operations, ways of working, or are expanding their operations. Typically, these meetings were initiated by the stakeholder organisation, held on an as-needed basis, and attended by not only their Sydney Water account manager, but also likely more senior decision-makers within both organisations.
- **Billing.**
- **Trade waste.** In addition to the above points, Service Critical High Businesses with trade waste also have routine trade waste inspections, along with unannounced 'spot check' visits from Sydney Water.

Stakeholder preferences with the type and frequency of contact with Sydney Water will be explored further in Phase 2.

> The challenge is turnover… for a while we had a great account manager, then he left. We had issues after that. Trying to get consistency after that was hard – we went through 2 or 3 hard ones before finding a good one.

Service Critical High Business | In-depth interview

> We have quite a good relationship with Sydney Water. We have a business customer representative who we, you know, can interact with to get information and we are in quite close contact with them.

6.5.2 Challenges facing Sydney Water, and the outcomes that must be prioritised

Challenges identified by Service Critical High Businesses included

- **Ageing infrastructure and a growing population are going to create a major problem for Sydney Water if proactive action is not taken now.** Service Critical High Businesses believed that the existing infrastructure is not sufficient to meet the demands of a growing population into the future. They saw the age of much of the existing network being a problem, amplified by a perception that Sydney Water is slow to act in terms of maintenance, and has been slow to increase the capacity of the network to cope with the increasing demand due to population growth, particularly from a wastewater perspective. One Service Critical High Business spoke of their specific wastewater network concerns, suggesting the network may only be licenced for certain volumes and that when major weather events happen, this can create vulnerabilities in the network and lead to increased wastewater overflows. Stakeholders agreed that the current Sydney Water infrastructure is ageing, and the original pipes are no longer sufficient. Service Critical High Businesses expected Sydney Water to be acting now for the future and saw technology and other innovations as key to addressing these challenges.

- **With a changing climate, Sydney Water need to ensure the security of the water supply as drought conditions intensify, and proactively motivate community adherence with water conservation behaviours in preparation for drought.** Service Critical High Businesses identified two key priorities for Sydney Water when it comes to drought and water security:

  Firstly, Service Critical High Businesses expected Sydney Water to be making proactive decisions now, forecasting how to deal with a changing climate, and aligning demand with an adequate supply of alternate water sources. One stakeholder acknowledged that a drier, El Nino climate will be starting in the next few years and Sydney Water need to know how the dry season will affect demand. Stakeholders said they expect Sydney Water to plan and act now for when the drought comes, so Greater Sydney is prepared, in terms of augmenting the water that is needed for consumption. There were some concerns that *"… I'm not sure that Sydney Water's model of primary treatment of treatment within region then pumped out in deep ocean outfalls is sustainable long-term"*. These Service Critical High Businesses suggested increased investment in technology for water capture and storage, and exploration of other innovations around purified recycled water, for example.

  Secondly, Service Critical High Businesses believed Sydney Water need to deliver more community education around water security into the future. A need was identified to change public perceptions around water security *before* Greater Sydney is in drought. Recent rain and flooding may have led to water security being taken for granted *"…people have short memories but not too long ago we had water restrictions and couldn't water your lawn or wash your car"*. Stakeholders felt community education and messaging

was required to motivate water conservation behaviours and educate the community on water sources that will support Greater Sydney's water security into the future. Stakeholders also highlighted a need to overcome any community resistance to purified recycled water. They suggested Sydney Water prioritise building community confidence and acceptance with purified recycled water as just one element of Greater Sydney's Water security for the future.

- **Organisational challenges are holding Sydney Water back from meeting the needs of Service Critical High Businesses.** When considering Sydney Water as an organisation, stakeholders discussed perceptions of an ageing workforce, the loss of experienced consultants, increased outsourcing, concerns about adequate resourcing, and being slow in getting things done. Service Critical High Businesses instead suggested that Sydney Water needs to adopt a much stronger customer focus, being more proactive and responsive to client issues and opportunities, and being better at following through, taking ownership over issues (rather than outsourcing), and minimising the need for customers to chase Sydney Water. There was a belief that Sydney Water needs to become agile as a workforce and more responsive, to build confidence among large business customers.
- **Reducing carbon emissions should be a priority.** With Service Critical High Businesses themselves working towards reducing carbon emissions, it is critical that Sydney Water does the same. There was agreement that achieving net zero carbon emissions should happen as soon as possible, provided it remains commercially viable. As a government organisation, Service Critical High Businesses see a myriad of opportunities for Sydney Water to trial more innovative methods to work towards net zero emissions.

> With the changing climate too, and an increasing population, you have to change technologies. You can't just rely on dams and make them bigger and bigger, although that seems to be what they've just agreed to do. To be able to do that, you need to be in the face of the community a bit more. I think it's always been historically [that] Sydney Water flies under the radar because water doesn't cost people that much and as long as your tap turns on and your toilets will flush, then it's good. It's kind of… good If no one notices we're there. We're not doing the wrong thing as opposed to trying to get more out there about water conservation and the importance of water.

Service Critical High Business | In-depth interview

> Sydney Water's ability to move quickly is not well known, their ability to not move quickly is legendary. I think that and some of it's about the nature of their business, it's static asset, very high maintenance cost, that sort of thing and a very large network, so maybe throwing that hand grenade is isn't really fair, because I think it's a really difficult job they've got, but I think that Sydney Water's ability to pivot and focus on innovation… how do you turn something that is as mundane as water into an innovation opportunity.

Service Critical High Business | In-depth interview

> I think there's a really interesting perspective about consuming recycled water… you can't drink water that's been through reverse osmosis because it's recycled. Yet that's common in big parts of Europe, Asia… we don't want to do it here, it's only good if it falls from the sky, if it gets recovered, it's bad. I think that mentality significantly limited Sydney Water's ability to… let's call it close loop, close up that economy of water management around major capital cities. The challenge I see with that is it ties them to a very expensive treatment model long-term.

Service Critical High Business | In-depth interview

6.5.3 Reactions to prompted areas

The prompted areas with the highest relevance to Service Critical High Businesses were *droughts and water restrictions*, and *carbon emissions*. The remaining areas were much less relevant to Service Critical High Businesses, who were more interested in discussing priorities and challenges (outlined on the previous pages) that were highly specific to their businesses.

Droughts and water restrictions

Separating personal perceptions around droughts and water restrictions from the business perspective was often challenging for stakeholders. From a commercial perspective, Service Critical High Businesses expect Sydney Water to be preparing for drought prior to drought occurring. Like most, they agreed that instilling positive habits in the business and residential community is critical in seeing Greater Sydney through droughts into the future.

Stakeholders felt that Sydney Water should be doing more to fund technologies that support processes like reverse osmosis, recycling grey water back into the system, and helping to avoid single-use water. Similarly, stakeholders suggested Sydney Water should support major businesses to implement in-house water conservation initiatives. One stakeholder interviewed had implemented an 'Every Drop Counts' program, which led to the installation of a range of water-saving meter devices on equipment to help understand which machinery was water-intensive, where water wastage was prevalent, and subsequently managed to identify and decrease water wastage.

Service Critical High Businesses also felt strongly about carefully matching sources of water with the need / use purpose, for example using potable water for drinking, and lower quality recycled water for irrigation or firefighting.

One of the most significant commercial impacts is cost, and Service Critical High Businesses suggested that business and industry will be motivated to conserve water if there are cost benefits in doing so (or conversely, penalties for misuse or overuse of water).

Greening and cooling

The extent to which greening and cooling has a direct impact on a Service Critical High Business depends on whether or not the business runs or requires green space as part of their operations. For a drinks manufacturer for example, greening and cooling is not critical, however for a major racecourse, sporting ground, or similar business, greening and cooling is more important.

Just one Service Critical High Business in this phase felt that greening and cooling had an increased relevance to their business, though between onsite water capture for irrigation (a dam and rainwater), drought tolerant gardens, and a relationship with Council for supplying recycled water, they felt Sydney Water had a limited role to play in this element of their business. The only potential for long-term impacts in the case of this stakeholder, was if there are conflicts between the local Council and Sydney Water on the issue.

Managing impacts on oceans and waterways

Although Service Critical High Businesses personally and environmentally supported the idea of reducing the impacts on oceans and waterways, from the perspective of their business, the impact of Sydney Water making changes in this area (doing more, less, or the same) would have minimal to no impact on their business.

Some stakeholders were surprised to learn that just 7% of wastewater is recycled, and they felt much more could be done to maximise recycled wastewater as a potentially valuable resource in a secure water future, and to also reduce potential harm to waterways and oceans in Greater Sydney.

Water aesthetics

Service Critical High Businesses agreed that water aesthetics have a minimal impact on their business operations, and therefore from their perspective, should not be a priority focus area for Sydney Water. Beyond maintaining the current service levels and continuing to meet the health/safety/quality standards, continuity of the current water aesthetics was stated as sufficient.

Carbon emissions

Service Critical High Businesses felt that reducing carbon emissions was one of the more critical issues facing Sydney Water. There was very low awareness as to what Sydney Water is currently doing to reduce carbon emissions, and many assumed that more could be done.

Service Critical High Businesses were interested in evidence from Sydney Water that progress is being made towards net zero carbon emissions, and that the target year for net zero should be before 2050. Some suggested that Sydney Water should be aiming for “as soon as practical ahead of 2050”, whereas others were interested in understanding what a staged approach to net zero could look like, with interim targets (i.e., 50% reduction in carbon emissions by 2035).

Stakeholders agreed that Sydney Water has a unique position as a large organisation and therefore can influence other organisations, including their customers, suppliers, and other partners, to follow their lead. One Service Critical High Business (who provided the commentary below) suggested partnerships, consortiums, and shared endeavours with other organisations may help Sydney Water progress more quickly than simply *“…going it alone”*.

> I think we all have equal [responsibility], being one of the other highest energy users in in the Sydney area. I think we've all got an equal responsibility. I'm not sure Sydney Water has particular responsibility but also, essentially being government… walking the talk a bit as well.

> It's not a preference, it's not we think we might… like our business we're in the same boat, so we're net zero by 2050, 50% reduction by 2030. I would argue that Sydney Water needs to have this from a business standpoint, needs to have not just a 2050 target because 2050 is a long way away I think it's there's some interim targets that are about demonstrating intent but also action.
>
> I think that's something that's going to be key for them and whether it's Sydney Water or it's the airports or it's our little paper mill, they're the same issues. As far as energy reduction Sydney Water is already doing that. … They've got biogas that they're burning for electricity generation. I think what the opportunity that Sydney Water might have is to work in consortium with other large businesses because I think that the challenge from a business standpoint and we're in this position at the moment is that often as a single company to put the get the investment up for generating green energy or carbon, you know, reducing your carbon impact through for electricity primarily, it's difficult to do as a company, but as a consortium, it becomes much more possible. It might be that Sydney Water needs to think a little bit more broadly about how they partner, so rather than going it alone and trying to solve it themselves, do they partner with business… to come up with a more holistic solution.

Service Critical High Business | In-depth interview

7 What we heard: ranked relative importance of customer priorities

7.1 Context

After a thorough review of the qualitative findings, the next stage of the research involved reducing all the customer priorities discussed above into common themes and then ranking them in order of relative importance. This formed the list (discussed below) of unprompted, customer-recommended priority outcomes tested in this section.

Of the 15 priorities tested in this phase, customers ranked the following most highly:

- Maintaining safe and clean drinking water
- Ensuring water and wastewater bills remain affordable, through careful cost management, guarding against future cost spikes and offering payment plans that help to make bills more manageable
- Ensuring waterways and water recreation areas remain clean and safe to use by reducing wastewater pollution to rivers and the ocean

The reason for understanding relative importance is to understand which outcomes should be prioritised by Sydney Water in its strategic planning, and which outcomes should be tested in a WTP exercise conducted in the third stage of Phase 1.

Summary of the key priorities

Following the customer forums, an analysis session was conducted to refine feedback received from customers into clear, outcome-focused, quantifiable customer priorities. This was an extensive session and included the team of moderators from the qualitative phase and economic regulatory experts. The objective of this session was to take the large amount of customer feedback and distill it into a list of common themes, that were actionable, outcome-focused priority areas for Sydney Water. Table 8 below showcases this process.

Table 8 Priority outcomes refinement exercise

Common customer Feedback	Is this outcome focused or process focused	What is the potential underlying area of focus?	What are the potential customer motivations underpinning this? To be explored further	Actionable priority outcome for Sydney Water
Minimise and reduce breakages in the piping networks	This is a process (the outcome is reduced water loss)	Efficiency of water use / resource conservation	1. Keeping bills low	**Reducing water loss by minimising leaks and breaks in**

			2.	Environmental benefits of conserving water	**Greater Sydney's pipe networks**
Improved stormwater management, storage and capture in local areas and homes	Process (the outcome is reduced water loss to ocean, evaporation, etc.)	Efficiency of water use / resource conservation	1. 2.	Keeping bills low Environmental benefits of conserving water	**Reducing water loss to the ocean by improving stormwater management, storage, and capture**
Increased water savings/ reduced water usage across Greater Sydney	This is an outcome	Efficiency of water use / resource conservation	1. 2.	Keeping bills low Environmental benefits of conserving water	**Increasing water savings and reducing usage through community-based water saving programs**
Maintain water quality and cleanliness at current levels	Outcome (Potential for multiple interpretations – drinking water quality or the quality of waterways for recreation etc.)	Water quality	1. 2.	Public Health Environmental health	**Maintaining safe and clean drinking water**
Improve community resilience to drought (through increased uptake and usage of recycled water or desalination)	Outcome (implies improved water security / less restrictions)	Water security	1. 2.	Less impact on customer Less impact on society in general	**Enhancing the water network's resilience to drought through building more water recycling and/or desalination capacity.**
Ensure waterways and water recreation areas remain clean and safe to use	Outcome	Recreation/ livability	1.	Improved/ safer recreation	**Ensuring waterways and water recreation areas remain clean and safe to use (by reducing wastewater**

				pollution to rivers and the ocean)
Ensure Water and wastewater bills remain affordable	Outcome	Affordability	1. Less impact on customer (financial specific)	**Ensuring water and wastewater bills remain affordable (through careful cost management, guarding against future cost spikes and offering payment plans that help to make bills more manageable)**
Proactively modernise communications with customers (e.g. live updates on dam levels, traffic light levels for water restrictions)	Process (the outcome is better informed customers – possibly leading to 'desirable behaviours')	Communications and education (also water conservation)	Customers who want to see the whole community use less water are motivated by: 1. Keeping bills low 2. Environmental health	**Ensuring better informed customers by improving and modernising communications to assist them with managing their water use**
Reduce the period in which Greater Sydney experiences or requires water restrictions.	Outcome	Water Security	1. Less impact on customer 2. Less impact on society generally	**Reducing the frequency and duration of water restrictions**
Contribute to a cooler environment through the maintenance of green public spaces	Outcome	Livability	1. Health and well being	**Contributing to a cooler environment and more pleasant green public spaces through the establishment/ maintenance of trees and vegetation**

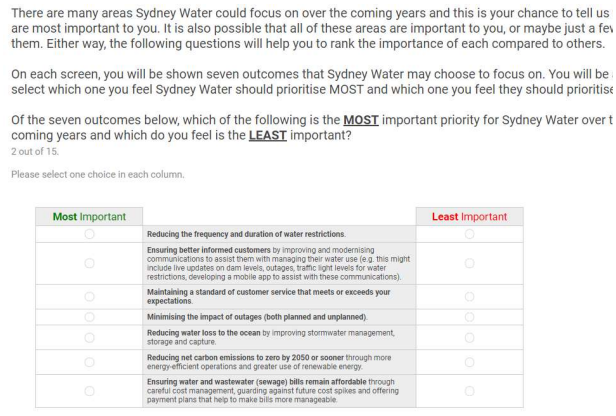
Reduce the discharge of wastewater pollution to rivers and the ocean beyond current standards	Process (the outcome could be safer recreation or habitat protection)	Environment / sustainability	1. Safer recreation 2. Healthier environment	**Ensuring waterways and water recreation areas remain clean and safe to use by reducing wastewater pollution to rivers and the ocean**
Reduce the risk of the drinking water experiencing issues with odour or taste after occasional changes in the environment (such as flooding, heatwave, fire or high wind events)	Outcome	Water quality	1. Public health 2. Aesthetics	**Reducing the chances of your drinking water occasionally smelling or tasting different after unplanned events**
Reducing net carbon emissions to zero by 2050	Outcome (Some may say reduced carbon emissions is an intermediate outcome, with the intended ultimate outcome being to stabilise the climate change and reduce consequent risks to the planet),	Environment / sustainability	1. Environmental health	**Reducing net carbon emissions to zero by 2050 or sooner through more energy-efficient operations and greater use of renewable energy**
Improved community knowledge about water and how to minimise usage	Process (the outcome is better informed customers – possibly leading to better water use practices)	Communications and education (also water conservation)	Customers who want to see the whole community use less water are motivated by: 1. Keeping bills low 2. Environmental health	**Increasing water savings and reducing usage through community-based water saving programs**

Maintaining a standard of customer service that meets or exceeds customer expectations	Outcome	Customer experience/ service levels	1. Less impact on customer	**Minimising the impact of outages (both planned and unplanned)**
Maintaining a standard of customer service that meets or exceeds customer expectations	Outcome	Customer experience/ service levels	1. Improved customer experience	**Maintaining a standard of customer service that meets or exceeds your expectations**

7.2 Ranking customer priorities by order of relative importance

As seen in the previous chapter, a key output of the customer forums was an extensive list of customer recommended priorities. These are, in essence, a laundry list of what customers believe Sydney Water should focus on. During the forums, we did not attempt to validate the prominence or relative importance of each priority across the wider population. This was explored in this stage of the research through a quantitative exercise which incorporated a Best Worst Scaling (BWS) methodology, also known as MaxDiff, which is the focus of this chapter.

MaxDiff surveys take advantage of an individual's ability to reliably identify extremes ('best' and 'worst') in a set of three or more items, with respect to a continuum such as importance. MaxDiff elicits a discriminating ranking of items, free of scale bias, and is simple and intuitive for participants to complete. It involves showing participants a series of scenarios that include a subset of items from a master list. A simplified example of how BWS works is shown below using a screen shot from the survey that participants completed.



There are many areas Sydney Water could focus on over the coming years and this is your chance to tell us are most important to you. It is also possible that all of these areas are important to you, or maybe just a fe them. Either way, the following questions will help you to rank the importance of each compared to others.

On each screen, you will be shown seven outcomes that Sydney Water may choose to focus on. You will be select which one you feel Sydney Water should prioritise MOST and which one you feel they should prioritise

Of the seven outcomes below, which of the following is the **MOST** important priority for Sydney Water over t coming years and which do you feel is the **LEAST** important?

2 out of 15.

Please select one choice in each column.

Most Important		Least Important
○	Reducing the frequency and duration of water restrictions.	○
○	Ensuring better informed customers by improving and modernising communications to assist them with managing their water use (e.g. this might include live updates on dam levels, outages, traffic light levels for water restrictions, developing a mobile app to assist with these communications).	○
○	Maintaining a standard of customer service that meets or exceeds your expectations.	○
○	Minimising the impact of outages (both planned and unplanned).	○
○	Reducing water loss to the ocean by improving stormwater management, storage and capture.	○
○	Reducing net carbon emissions to zero by 2050 or sooner through more energy-efficient operations and greater use of renewable energy.	○
○	Ensuring water and wastewater (sewage) bills remain affordable through careful cost management, guarding against future cost spikes and offering payment plans that help to make bills more manageable.	○

MaxDiff survey – example screenshot

By observing how Sydney Water Customers make their decisions and change their responses when presented with multiple choice tasks, we can determine how they rank the items relative to each other.

The attributes discussed in Table 8 were included in the experimental design for the BWS task, which was programmed into an online survey using sophisticated survey software. The language used in the survey was designed to be simple and easy to follow for the general population. Prior to launching the survey, the scripted survey link was peer-reviewed internally and cognitively tested for ease of use, and to ensure clarity and understandability of the tasks. Members of Sydney Water's customer engagement working group and Heads of Business also reviewed the content and framing of the survey prior to launch, to ensure the technical accuracy of the language used.

7.3 Selection of customer priorities to test in the MaxDiff exercise

A total of 15 customer priorities were selected to be ranked by relative importance. These included:

- Maintaining safe and clean drinking water.
- Ensuring water and wastewater bills remain affordable through careful cost management, guarding against future cost spikes, and offering payment plans that help to make bills more manageable.
- Ensuring waterways and water recreation areas remain clean and safe to use by reducing wastewater pollution to rivers and the ocean.
- Enhancing the water network's resilience to drought through building water recycling and/or desalination capacity.
- Reducing water loss by minimising leaks and breaks in Greater Sydney's pipe networks.
- Increasing water savings and reducing usage through community-based water saving programs.
- Improving natural waterways and habitats to protect the environment.
- Reducing water loss to the ocean by improving stormwater management, capture, and storage.
- Reducing the chances of drinking water occasionally smelling or tasting different after unplanned events (such as flooding, heatwave, fire or high wind events).
- Minimising the impact of water outages (both planned and unplanned)
- Contributing to a cooler environment and more pleasant green public spaces through the establishment/maintenance of trees and vegetation.
- Maintaining a standard of customer service that meets or exceeds expectations.

- Reducing net carbon emissions to zero by 2050 or sooner through more energy-efficient operations and greater use of renewable energy.
- Reducing the frequency and duration of severe water restrictions.
- Ensuring better informed customers by improving and modernising communications to assist with managing water use (e.g. live updates on dam levels, outages, traffic light levels for water restrictions, a mobile app to assist with these communications).

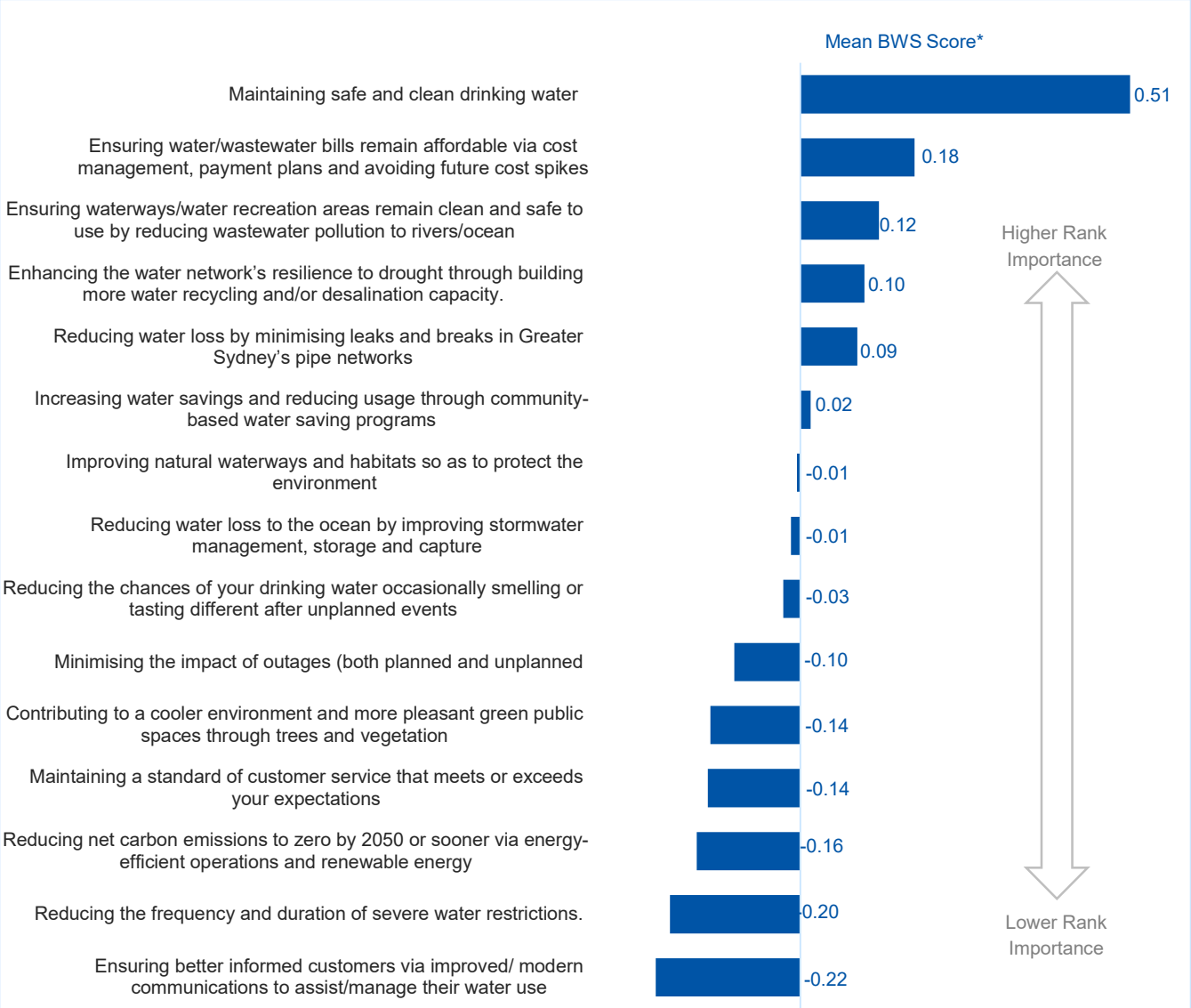
7.4 Ranking of customer priorities

7.4.1 Overall Rank Order

Overall, the three most important priorities to residential customers were:

- maintaining safe and clean drinking water
- ensuring water and wastewater bills remain affordable, through careful cost management, guarding against future cost spikes, and offering payment plans that help to make bills more manageable, and
- ensuring waterways and water recreation areas remain clean and safe to use by reducing wastewater pollution to rivers and the ocean.

Figure 2 Customer ranked priorities



Base: Total sample (n=1,537)

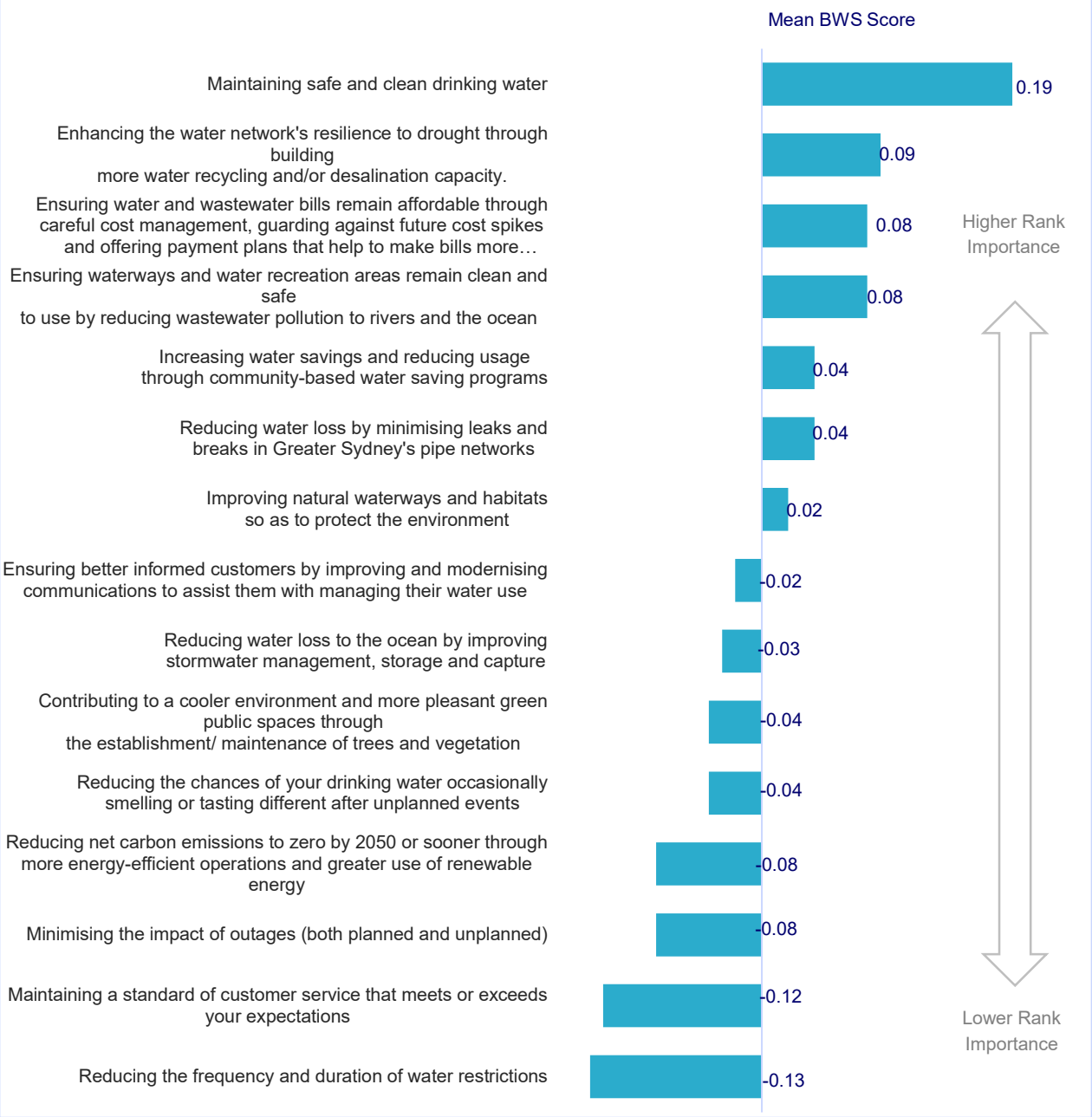
Please Note: The BWS scores provide an interpretation of customers choices when they are forced to trade off some priorities for others. BWS scores reveal the relative ranking of importance. Priorities which were ranked as lower in importance may still have value to respondents.

7.4.1.1 Subgroup ranked priorities

The following figures show some of the key subgroups included in the research and how the priorities deemed relatively more important closely mirror the main population.

Figure 3 shows the rank order of priorities amongst the First Nations population, by relative importance, which was largely consistent with the overall population.

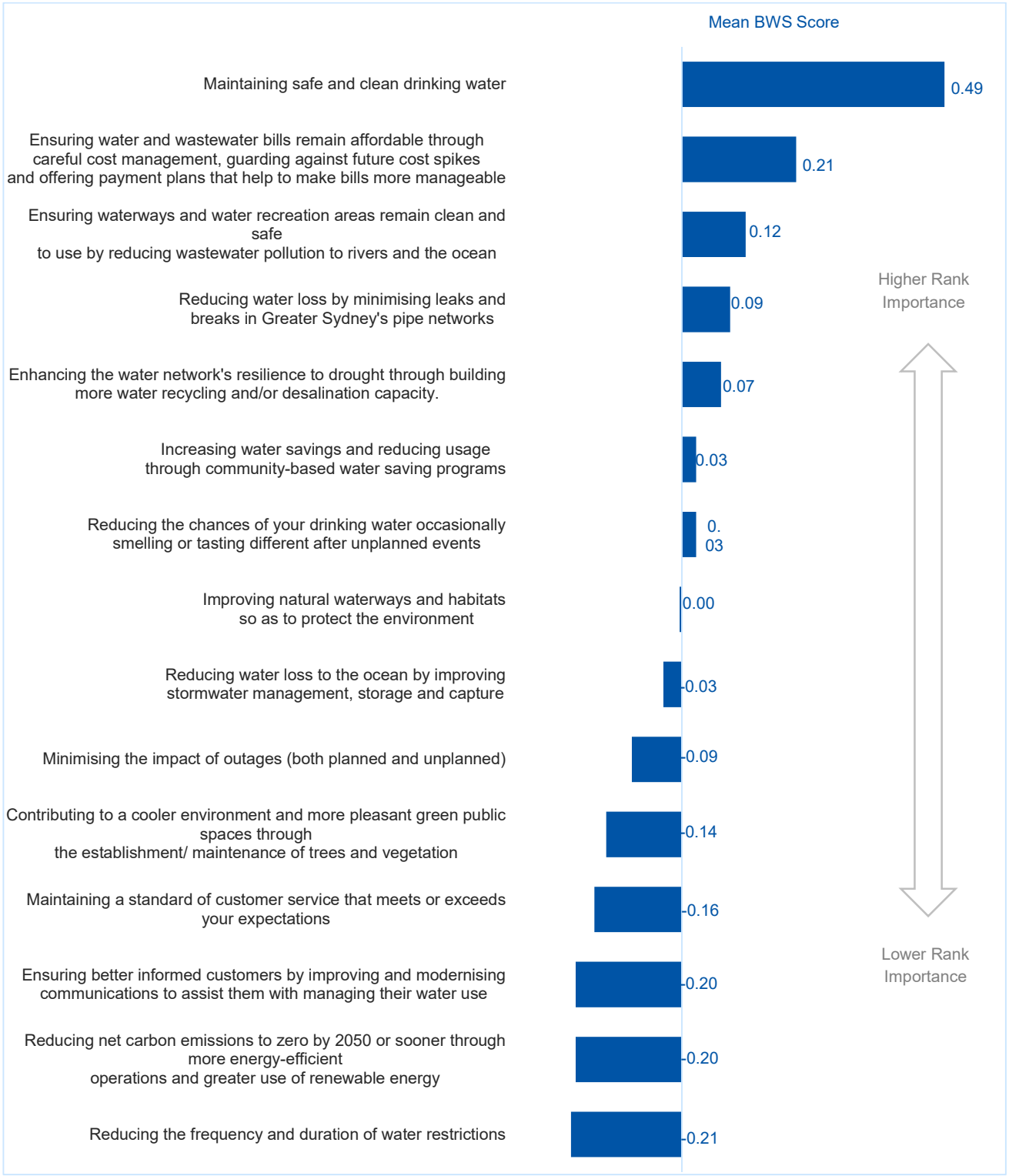
Figure 3 Customer ranked priorities – First Nations



Base: First Nations respondents (n=55)

Figure 4 shows the rank order of priorities by relative importance, amongst the financially vulnerable population, which was largely consistent with the overall population.

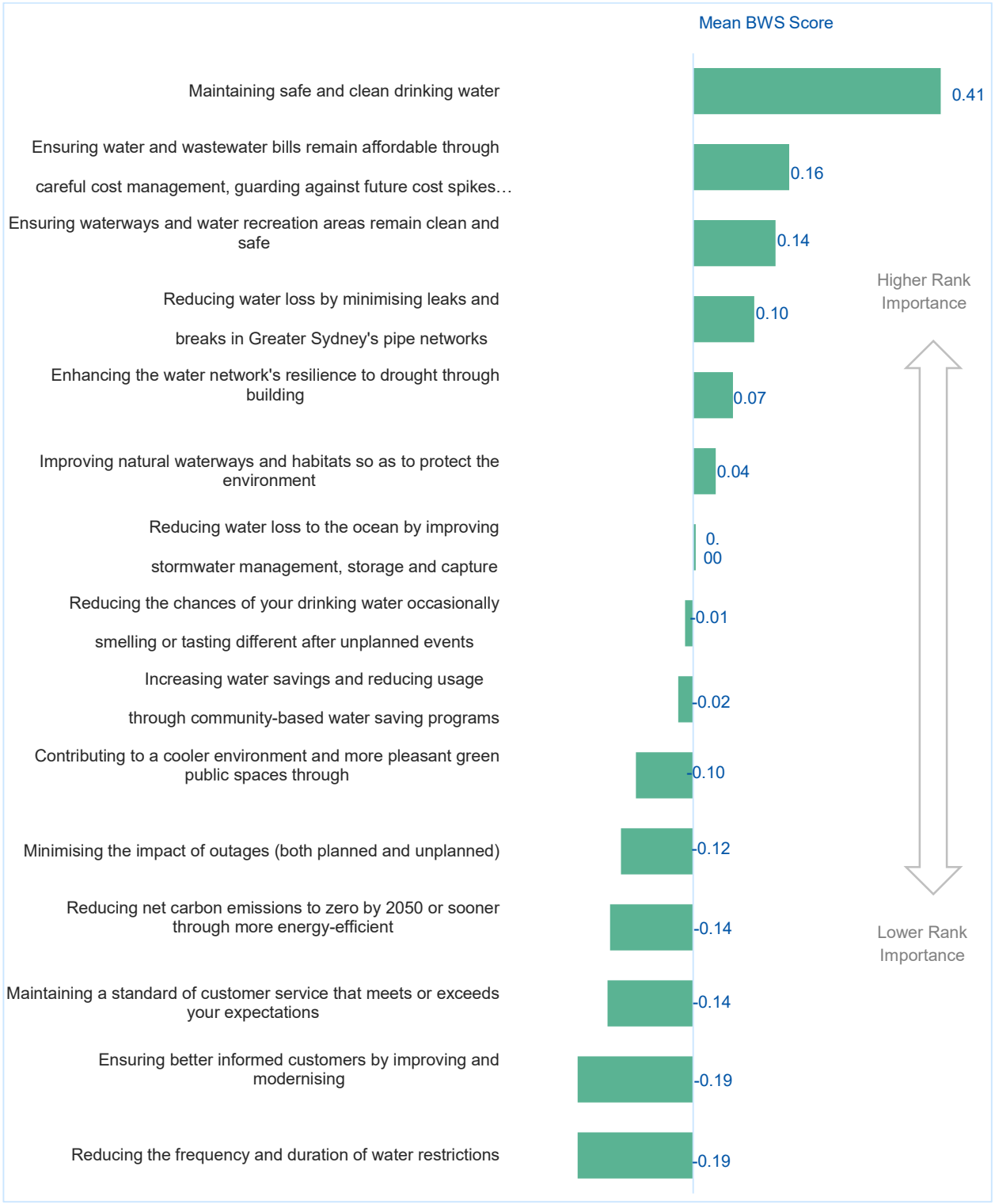
Figure 4 Customer ranked priorities – Financially vulnerable



Base: Financially vulnerable respondents (n=281)

Figure 5 shows the rank order of priorities by relative importance, amongst the population living with a disability, which was largely consistent with the overall population.

Figure 5 Customer ranked priorities – Individuals living with a disability



Base: Respondents living with a disability (n=229)

7.4.2 Motivations underpinning the ranked priorities

Following this ranking exercise, customers were presented their top 3 priorities (or 4, if tied) and asked to provide justification for why they considered these most important. This data was subsequently coded by an internal Kantar Public team to identify the key themes customers provided as justification for their final, ranked priorities. The top three priority areas are identified below, with the full coded data is displayed in Appendix F.

7.4.2.1 Maintaining safe and clean drinking water

Safe and clean drinking water was identified as the main priority for Sydney Water, which was mainly due to the essential role it plays in customer's lives.

Within the open-ended comments, common responses from customers related to water being an essential service that is required to maintain life and ensure human survival. Alongside this, there were frequent comments about the need for clean and safe drinking water to ensure good health and wellbeing within the region and prevent sickness and disease. Some customers further indicated that ensuring safe and clean drinking water was the primary responsibility of Sydney Water, and therefore should be prioritised above other activities. This supported the qualitative findings, where customers highlighted the essential role water plays in people's lives and thus the need to ensure continued accessibility to safe and clean drinking water.

> *It's the most important thing we have; we must always have clean water to live.*
>
> **Residential customer |** MaxDiff survey

> *Every human being needs water. It should be easily accessible and reliably clean.*
>
> **Residential customer |** MaxDiff survey

> *The primary role of Sydney Water is the provision of clean and safe drinking water - focus on that.*
>
> **Residential customer |** MaxDiff survey

7.4.2.2 Ensuring water and wastewater bills remain affordable through careful cost management, guarding against future cost spikes and offering payment plans that help to make bills more manageable

Affordability was also considered a key priority for Sydney Water, with customers specifically noting the need to consider cost of living pressures and current high levels of inflation when delivering essential services like water and wastewater services.

Within the open-ended comments, customers noted the importance of keeping costs affordable to ensure they could continue to pay their bills. Additionally, customers highlighted financial pressures due to the continuously rising cost of living and high rates of inflation. Other customers also pointed to water as an essential service, thus necessitating it being accessible and affordable for everyone. This included some who believed that the prices should be kept tight to ensure the

protection of the financially vulnerable, pensioners, retirees, people living with a disability and others who had a critical reliance on water and wastewater services.

> *With rising costs in every area of our lives, the base costs of water and sewerage services needs to be managed.*
>
> **Residential customer |** MaxDiff survey

> *The cost of living has increased quite strongly recently. There needs to be some type of safeguard against a sudden rise in water costs.*
>
> **Residential customer |** MaxDiff survey

> *Bills must be affordable. We cannot assume water can have an infinite price if it is essential to life.*
>
> **Residential customer |** MaxDiff survey

7.4.2.3 Ensuring waterways and water recreation areas remain clean and safe to use by reducing wastewater pollution to rivers and the ocean

As the third-highest priority, customers described their desire to see Sydney Water maintain the cleanliness and safety of waterways and water recreation areas for a number of reasons. This included to protect the natural environment and habitats and avoid negative impact on wildlife. Additionally, there appeared a general expectation from customers that Sydney Water would prioritise this area to ensure that rivers, oceans, and waterways are kept clean and unpolluted. Other customers also pointed to maintaining public health as a key reason for their ranking.

> *They need to ensure pollution does not enter our water areas at all, [as it would] effect everything and everyone.*
>
> **Residential customer |** MaxDiff survey

> *Safe clean waterways for fishing and recreation. It is our back yard and must be protected as a priority.*
>
> **Residential customer |** MaxDiff survey

> *Looking after the environment and reducing water waste is vital for our planet and survival.*
>
> **Residential customer |** MaxDiff survey

> *We need to maintain rivers and oceans for our own well-being and the food chain.*
>
> **Residential customer |** MaxDiff survey

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

8.1 Context

The Willingness to Pay (WTP) research sought to estimate customers' dollar-value preferences and trade-offs for the priority outcomes (or service attributes) identified in the qualitative research. A discrete choice experiment (DCE)[2] 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. 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 Greater Sydney residents, 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 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.

[2] Also known as choice modelling

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.

Overall, the DCE revealed the following:

- Drinking water aesthetics (taste and odour) had the highest level of relative attribute importance. Surveyed customers were particularly sensitive to deterioration in this attribute relative to current levels. The dashboard presents an estimate of customer WTP to prevent this attribute from worsening below current levels.
- Healthy Water ways and habitats also have high levels of attribute importance.
- Other attributes assessed as having a high level of influence in the choices made by customers are water for green public spaces and capturing rainwater for re-use through storm water harvesting.

These findings indicate that customer service offers that include improvements in the above attributes are likely to have higher overall WTP than those that do not.

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.

The DCE was designed to allow WTP to be estimated for different sub-groups (or segments) of the respondent sample. For example, the dashboard displays WTP for different segments based on income, gender, age, First Nations, etc. The WTP results for these different groups should be interpreted with reference to the qualitative research results presented earlier in this report, which help to build further insights about what motivates the preferences of different customer segments.

8.2.1 What the dashboard can and should be used for:

What the dashboard can be used for

- Simulating WTP estimates for different, mutually-exclusive service packages (i.e. alternatives to the status quo).
- Comparing WTP estimates of each service package against the actual cost of implementing that alternative. Since WTP represents the perceived additional monetary value of that option to customers, WTP values can be used in cost-benefit analysis. Where WTP exceeds the cost of implementing an alternative, this would be prima facie evidence to indicate that the service would be in the long-term interests of customers.
- Determining which attributes will provide the greatest return on investment when either improvements are made to these attributes, or action is taken to prevent service levels deteriorating below current levels.

What the dashboard doesn't tell you or should not be used for

- Identifying an optimised portfolio of service offerings. To achieve this objective it is necessary to conduct a CBA with fully costed estimates of each attribute and service level.
- Using the DCE results to explain why some attributes are of greater relative importance than others. While the results provide a good indication of customer preferences and WTP for alternative services and outcomes, they do not fully explain why particular customers have preferences for certain outcomes. Where the dashboard provides the *what*, qualitative insights set these results within the context of customers' motivations, and hence provide the *why*.
- Drawing firm conclusions about how WTP varies across different customer segments. Caution should be taken when interpreting WTP values for subgroups using the dashboard. Subgroup WTP values are presented as the average values for respondents in each of the subgroups, but some subgroups have small numbers and any differences in WTP values may be the result of 'noise' in the data (i.e., greater heterogeneity in small samples) and not a direct effect of membership to that subgroup.

8.3 Study Methodology

8.3.1 Study Design

DCE is 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'.

8.3.2 Why use a DCE?

Every year we make thousands of choices based on our individual preferences and value frameworks. Decisions often involve trading off multiple product attributes at the same time. For example, the decision concerning which make and model of car to purchase usually involves considering multiple attributes such as fuel economy, design aesthetics, road handling, comfort, price, etc. In DCEs, survey participants are presented with a series of 'choice sets' with each containing several alternatives described by a common set of attributes. Every choice set includes a 'status quo' option and two or more alternatives. The importance weighting individuals place on each attribute, and how that impacts decision-making, is determined via experimental design and modelling.

DCEs were first developed in the 1930s allowing for comparisons of two alternatives, and later extended to multinomial choices in the 1980s, with a common application being to transport research, where commuters are asked about their preferred choice of transport mode, be that car, train, bus, ferry, bike etc. (Thurstone et al, 1931, Louviere et al, 1982; Louviere et al, 1983). DCEs are now used in many fields to understand and model the trade-offs and preferences revealed by the choices that people make.

8.3.3 DCE vs. contingent valuation

Prior to the rise of DCEs, common methods to measure preferences included descriptive statistical analysis, rating scales, time trade-off, standard gamble, and specifically, the contingent valuation method (CVM), which is capable of estimating WTP, but only for improvements in a single attribute (or changes in multiple attributes but tested one at a time in isolation from one another). Previous Sydney Water pricing studies have employed a combination of CVM and DCEs to evaluate Greater Sydney residents' preferences for different priority service areas.

CVM 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 the trade-offs people are willing to make between multiple attributes, thus enabling a more realistic decision-making context (or frame of reference) than testing preferences for singular attributes (which is often at odds with the real-world context in which people make decisions). Therefore, DCE provides researchers with a considerable advantage over CVM (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 defined in real markets, DCEs allow for investigation of levels of attributes that do not yet exist in real markets (Lancsar and Louviere., 2008).

8.3.4 DCE attributes for Sydney Water survey

The attributes and levels used in the DCE were derived through an iterative methodological process. First, qualitative customer forums and an extensive program of focus groups and in-depth interviews (covered in earlier sections of this report) were conducted by Kantar Public. The results of these forums informed the development of customer-recommended priority outcomes to be tested in a best-worst scaling (BWS) exercise. Following this, an in-depth workshop was

conducted with Sydney Water's internal Customer Engagement Working Group, Kantar Public, Synergies and CaPPRe (the project team). This workshop examined which priority areas ranked highest in the BWS exercise and used this information to convert and refine these into the final 12 attributes.

From here, the project team developed and refined three to five realistic levels for each attribute for inclusion in the DCE design. Sydney Water deliberately elected not to include extreme attribute levels that would be unrealistic or infeasible.

The final attributes used in the DCE include:

1. Cost (Owners: Total quarterly water bill, Renters: Monthly rent)
2. Number of recreational waterways considered to be in good or very good condition
3. Community water saving programs and how much they reduce customer water usage
4. Healthy waterways and habitats and the number that are in poor or good health
5. The taste and smell of drinking water and the number of complaints received each year
6. The proportion of customers affected by outages
7. Water for green spaces, and how brown and dry vs lush and green public spaces are
8. Customer service resolution times
9. Net zero carbon and at what date Sydney Water achieves this
10. The frequency in which water restrictions during drought are experienced over a 10-year period
11. The percentage of water lost from leaking pipes
12. How much rainwater is captured and reused

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	Attribute Description shown in DCE	Attribute Levels	Current/status quo fixed levels (Levels of each attribute as currently delivered by SW)
Number of recreational waterways	The number of clean and safe beaches, rivers, creeks, lakes, and streams for recreation like swimming, kayaking, fishing, boating, paddling, etc. There are currently 115 swim sites across Greater	98 good/very good sites	98 good/very good sites
		103 good/very good sites	

	Sydney and the Illawarra, measured by the following grading system: Very good = Excellent water quality, almost always suitable for swimming. Good = Good water quality, suitable for swimming most of the time. Fair = Generally good water quality except for 3 days after rainfall or when there are signs of pollution. Poor = Water quality is susceptible to pollution and is not always suitable for swimming, avoid swimming during and 3 days after rainfall. Very poor = Water quality is very susceptible to pollution and often not suitable for swimming. Avoid swimming. Additional sites refer to either the creation of a new site to a quality that is good or very good, or improving an existing site to a quality that is good or very good.	108 good/very good sites	
		113 good/very good sites	
		118 good/very good sites	
		123 good/very good sites	
Community water saving programs	Water saving programs include ways to help customers use less water (e.g., education and information, subsidies for efficient shower heads and toilets, etc.)	Customers will save 2% water use	Customers will save 2% water use
		Customers will save 4% water use	
		Customers will save 6% water use	
		Customers will save 8% water use	goal for 2030
		Customers will save 10% water use	
Healthy waterways and habitats	Urban waterways are those that are impacted by the growth of the city and human activities. The health of urban waterways across Sydney is described as either 'poor', 'fair', or 'good'. Waterways described as 'poor' have low water quality, little biodiversity, and litter around them. They are less natural, and vegetation has been removed and replaced with concrete or pipes due to erosion from too much rainwater. Waterways described as 'good' are healthy, beautiful, feel natural, and provide habitats for plants and animals and nature to flourish. This means being safe from pollution, natural habitats thriving, and restoration of concrete channels to a more natural, pleasant state that supports plants and animals.	Most urban waterways in Sydney are in 'poor' health	Most urban waterways in Sydney are in 'poor' health
		Most urban waterways in Sydney are in 'fair' health	
		Most urban waterways in Sydney are in 'good' health	

DCE Attributes	Attribute Description shown in DCE	Attribute Levels	Current/status quo fixed levels
	On average, the number of complaints Sydney Water receives each year about drinking water, while safe to	double the complaints	

Drinking water taste and smell	drink, smelling or tasting different. This is often due to major rainfall and flooding events.	same complaints	400 complaints/year
		half the complaints	
Proportion of customers affected by outages	Proportion of customers affected by unplanned outages (greater than 5 hours) each year caused by broken pipes. Outages affect customers' water supply.	3%	
		2%	2%
		1%	
Water for green spaces	Water allocated for green public spaces, helping to build a cooler environment. Public green spaces include parks, sporting fields, golf courses, and gardens.	Public spaces brown and dry over summer	Public spaces brown and dry over summer
		Public spaces green over summer but brown and dry during drought	
		Public spaces green over summer and during drought	
Customer service resolution time	The time it takes Sydney Water to resolve a general enquiry or issue you raise with them about your account on a non-urgent matter. Contact may be made through a self-service portal, website, or call center and enquiries include things like copies of account statements, change of mailing address, query on water usage, application for pension rebates, hidden leak allowance, and change of property classifications.	7 business days	
		5 business days	5 business days
		3 business days	
		1 business day	
		Instantly (automated system)	
Net zero carbon	How long it takes to achieve net zero carbon emissions through more energy-efficient operations and greater generation and use of renewable energy.	Reach net zero by 2050	Reach net zero by 2050
		Reach net zero by 2040	
		Reach net zero by 2035	
		Reach net zero by 2030	
Water restrictions during drought	The average amount of time (over 10 years) you may have to endure water restrictions during drought (e.g., no outdoor water use at home, work and public spaces, or rationing water).	9 months of restrictions over 10 yrs	
		6 months of restrictions over 10 yrs	6 months of restrictions over 10 yrs
		3 months of restrictions over 10 yrs	
		Less than 3 months of restrictions over 10 yrs	

Water loss from leaking pipes	% of drinking water lost through pipe leaks and breaks.	8% of drinking water lost	8% of drinking water lost
		7% of drinking water lost	
		6% of drinking water lost	
Capturing and reusing rainwater	The proportion of Sydney Water's water supply that comes from rainwater. This is done through stormwater management, storage, and capture in local areas and homes. Water can be used for agriculture, toilet-flushing, and other non-drinking uses. This is in addition to rainwater tanks in homes and businesses. For example, 1% of Sydney Waters' water supply is 5 billion litres of water or about 2000 Olympic sized swimming pools. The city currently uses 500 billion litres of water each year.	No additional rainwater	No additional rainwater
		+'0.5% (1000 olympic pools)	
		+'1% (2000 olympic pools)	
		+1.5% (3000 olympic pools)	

8.3.5 DCE Framing

Prior to completing the DCE, participants were provided with a full description of each attribute. Participants were informed that their responses would be used in decision-making about proposed changes to Sydney Water services over the next 10 years. Participants were also reminded to consider their available income when choosing alternatives with higher prices compared to the current (see section on 'cheap talk' in Capacity to Pay vs. WTP).

The payment vehicle (that is the means by which customers would pay for the specified improvements, if they agreed to do so) 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). The DCE therefore permitted estimates of household WTP rather than individual customer WTP.

The distinction between owner-occupier households and renters meant that two DCE models needed to be developed. ; the first we call the homeowner's model and the second we call the renter's model. The reason for needing to differentiate between homeowners and renters is that renters in Greater Sydney typically do not pay a water bill. In some instances they do, and sometimes renters will pay a water usage charge, but most of the time water bill costs are passed on to the renter via the landlord in their rental payments. As a result the impact of a bill increase may be obscured to a renter.

8.3.6 Experimental design

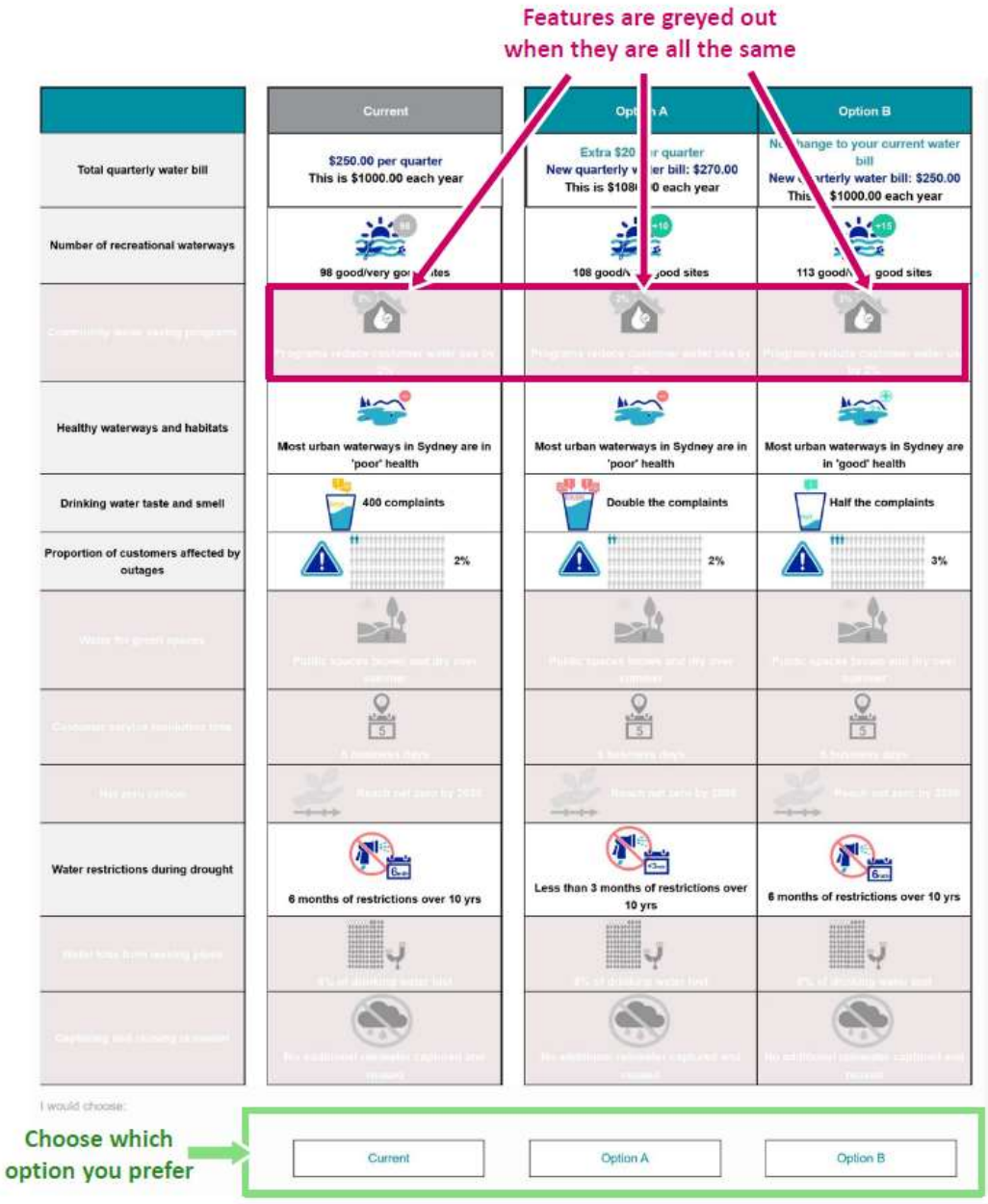
The experimental design followed best practice guidelines (Bridges et al, 2011) and the combinations of levels presented in the scenarios were designed using D-efficient design structures (Rose and Bliemer, 2009) in NGene. Checks on respondents' understanding were performed both before and after the DCE to determine sample validity.

The combinations of levels presented in the choice scenarios were designed using a partial profile design. A partial profile design is a design method in which only a subset of the possible attribute levels for each attribute are presented to respondents. This differs from a full profile design, where all possible attribute level combinations are presented to respondents. The goal of a partial profile design is to reduce the number of choice scenarios that respondents are asked to complete (reducing the cognitive burden), while still allowing for estimation of the underlying choice model. This allowed for a greater number of attributes to be tested compared to previous Sydney Water pricing studies (12 in the current study, compared to five in the previous study).

The partial design consisted of 132 choice tasks (scenarios), split up into 12 blocks, so that each participant was presented with 11 scenarios. In each scenario, six of the attributes were held constant and six varied - cost always varied. Attributes that were held constant were greyed out to help draw the eye of the respondent to those with differences. The status quo (base case) in the experiment was fixed across scenarios and represented Sydney Water's current water service offering.

8.3.7 Example choice set

An example of one choice set from the experiment is provided in the accompanying image.



Example choice set

8.3.8 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. It was also pilot-tested with 276 customers prior to launching to the full sample.

Participants were recruited to complete the online survey through five Australian research panels. 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.

Fieldwork was completed between January and February 2023. The total sample was 3,079 and the cleaned sample was 2,472 respondents. The survey took a median of 20.83 minutes to complete.

To bolster the reliability and validity of stated preference studies, it was essential that respondents 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. 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).

8.3.9 Weighting and inflation

It is worth noting that the data was not weighted. When data is obtained at the level of individual respondents, it is not uncommon for sampling weights designed to make the sample representative of the target population to 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 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 five years. If there are variables that are expected to change over time, such as 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 in the dashboard (post-model estimation) to improve interpretability of results by region. The dashboard has separate tabs, which calculate the total household WTP across Greater Sydney regions by weighing the WTP values per geographic region by the number of households in that region, including both renters and homeowners.

8.3.10 Data cleaning

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 an 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 (in less than 12 minutes)

DCE/WTP-specific cleaning:

- **Straight-lining for option A or B in the DCE:** Respondents who chose option A or Option B for 12 scenarios or more were considered straight liners and were excluded. Please note:
    - There are no differences between Option A and Option B (they are 2 hypothetical alternatives with no alternative-specific differences besides 'a' and 'b')
    - Straight liners of Option A or B who chose the status quo for all scenarios were not excluded, these were classified as non-traders. They were assumed to have a WTP of $0 (since they don't want to change from the current)
    - Non-traders with WTP $0 are still included in the WTP calculations (just not model estimates).
    - All open-ended text and data cleaning processes apply to these participants. If they chose 'current' for all scenarios, and passed all data cleaning, it was assumed they simply don't want to change or in other words their WTP=$0.
- **Most and least important attributes**: In the survey, participants' most and least important attributes and their reasons for choosing so were asked. Those who provided the same answer for both their most and least important attribute were removed from the data.
- **Low understanding**: Question wording: *Please rate your understanding of the scenarios you have just completed on a scale from 1 ("Did not understand the scenarios at all") to 10 ("Completely understood the scenarios").* Participants who had a self-reported understanding of the DCE below 6 out of 10 were excluded.
- **Income:** If a person's income (household for owners, personal for renters) was less than the maximum annual amount agreed to in the DCE, respondents were excluded from analysis.

Table 10 shows the sample numbers that were removed at each cleaning step.

Table 10 Sample removed at each cleaning step

Particulars	Number
Total attempts	5,586
Screened out	609
Incompletes	1,744
Quality removal (most/least)	9
Quality removal (attention)	162
Quality removal (failed both DCE tests)	42
Quality removal (understanding)	75
Quality removal (interview duration	0
Straightliners	10
Full completes before manual clean	2,935
Duplicate IPs	253
Poor Open text	70
Straightlining 90%	14
Unrealistic bill/rent from bounds established	48
Additional income clean: 78	78
Total manual removed	463
Final sample	2,472

8.3.11 Mitigating hypothetical bias: capacity to pay vs. WTP

Preference surveys have been criticised in the past for not producing valid measures of WTP, due to survey participants potentially signaling a desire for more service without the capacity to pay for it (known as 'hypothetical bias'; where people agree to one thing in an experiment but make a different decision when faced with a 'real-world' choice; Fifer et al., 2014).

This study assesses both a person's WTP and capacity to pay for 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 is included in the experiment (Fifer et al., 2014). The current study included several techniques, including:

- **Cheap talk:** budget reminders and consequentiality statements, including asking respondents to consider their income before agreeing to service price increases in the DCE, and repeatedly reminding them that their responses will influence real decisions
- **Certainty calibrations:** Repeatedly asking respondents how certain they were they could afford such an increase in service price
- **Personal and household income tests:** a person's income must be greater than cost of the service price; participants were excluded from analysis where their income was less than the maximum costs of service agreed to in the DCE. Non-linear income utility functions were tested as validity tests on income and suggested that income does not make a material difference to the model and the marginal utility of income is likely linear.

8.4 Analysis

All survey data outside of the DCE component can be viewed and downloaded from the dashboard provided with this study.

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.

In this DCE analysis, we estimated utility functions for each attribute and level (utility functions are parameter coefficients or numerical values that represent the magnitude and direction of influence of an attribute on a choice outcome).

The data from the survey scenarios (the DCE component of the survey) was used to model estimates of these parameter coefficients. These were then used to help understand the relative

importance of different attributes and levels in deriving overall customer utility and willingness to pay.

The econometric methods employed recognise that preferences may vary across participants, even after controlling for observed characteristics like age and gender. As such, the mixed multinomial logit models used in this study allow for variation in these preferences.

8.5 Results

Two separate models were estimated; one for homeowners (n=1,974; those who pay a quarterly water bill), and one for renters or those in social housing (n=498; those who see a commensurate increase in monthly rent to account for increases in their water services; hereafter referred to as 'renters').

8.5.1 Relative Attribute importance

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 the greatest percentage importance are the most 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.

Attribute importance: Homeowners vs. Renters

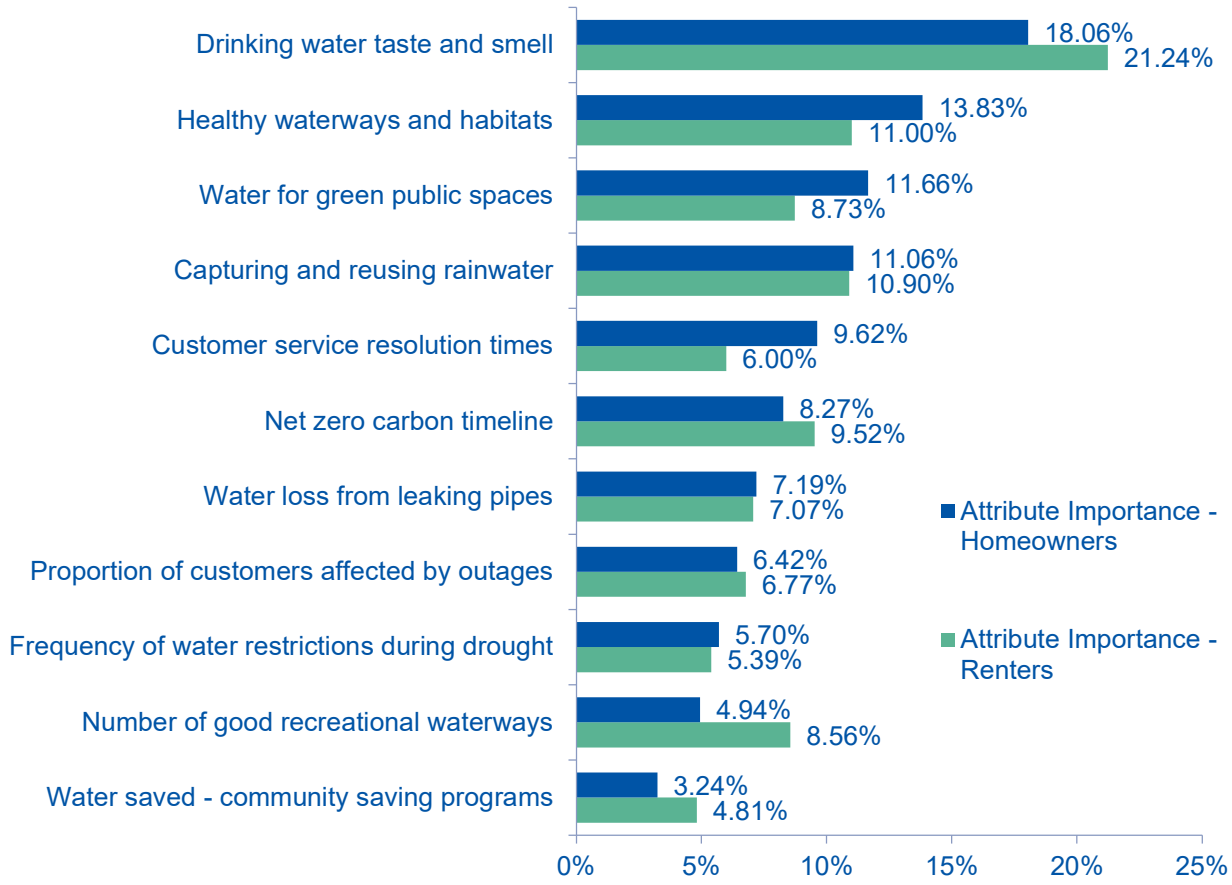
Figure 6 shows that **for homeowners**, water aesthetics (the taste and smell of water) was the attribute that had the greatest relative influence in driving customer utility. As previously explained, this attribute does not refer to the safety of drinking water. Respondents were informed that changes in taste and smell bear no relationship to the quality of water for drinking. However, given the very high importance placed on this attribute in the DCE, it is possible that some customers may not have clearly understood the distinction between aesthetics and water quality for public health. The next most influential attributes were healthy waterways and habitats, and water for green spaces.

Attributes that were relatively less influential in driving customer utility (or wellbeing) included, water saved through community water saving programs, the number of good recreational waterways, and the frequency of water restrictions.

For renters, water aesthetics (the taste and smell of water) was also the attribute that had the greatest relative influence in driving customer utility. The next most influential attributes were healthy waterways and habitats, capturing and reusing rainwater, and the timeline for achieving net zero carbon.

Attributes that were relatively less influential in driving customer utility include, water saved through community water saving programs, the frequency of water restrictions, and customer service resolution times.

Figure 6 Attribute importance – homeowners vs. renters

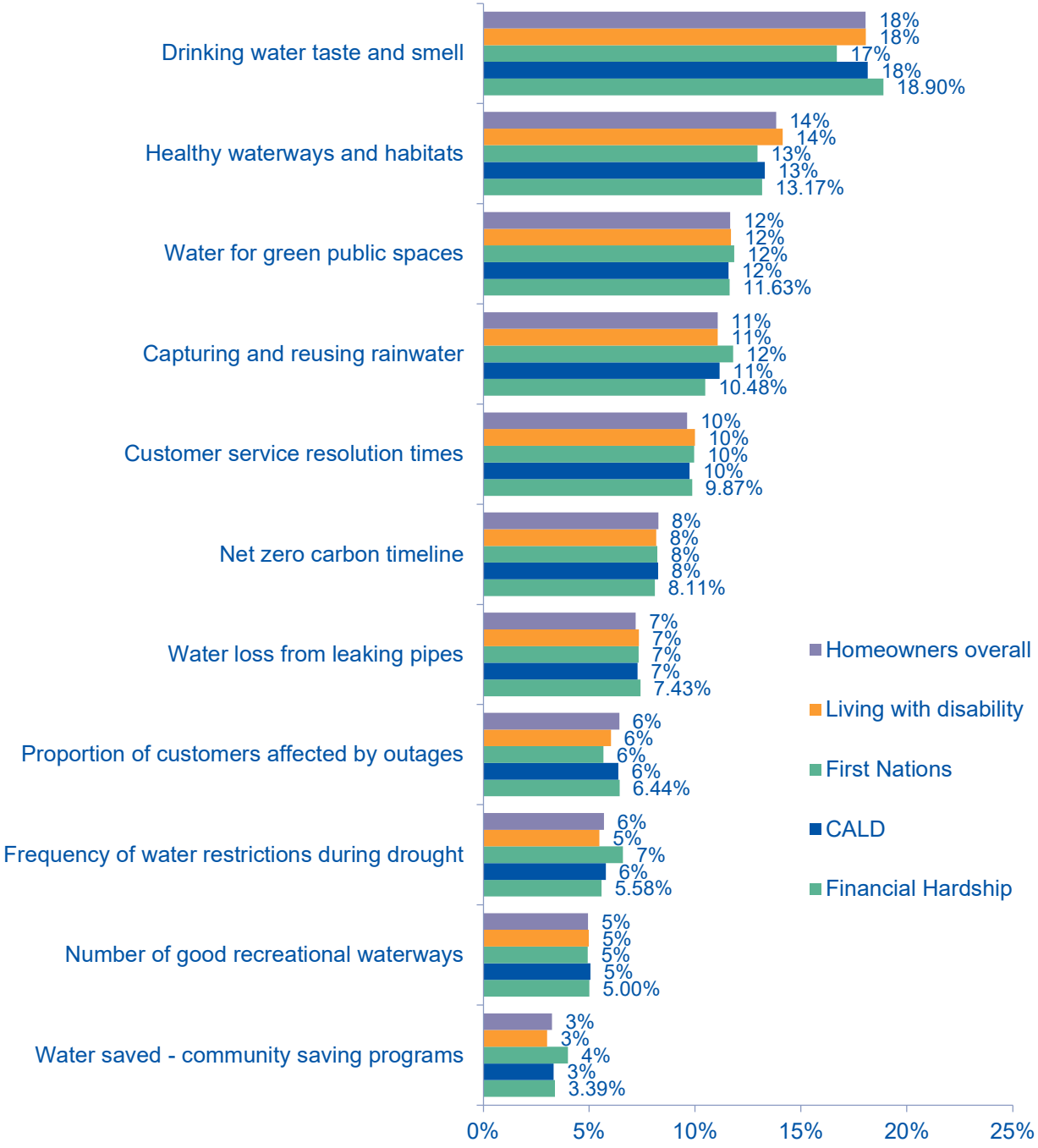


Base: Total sample (n=2,472)

Attribute importance: key subgroups (homeowner's model)

Figure 7 shows the attribute importance scores for key subgroups compared to the homeowner's model, which shows relative consistency across the different attributes.

Figure 7 Attribute importance – key subgroups – homeowners' model

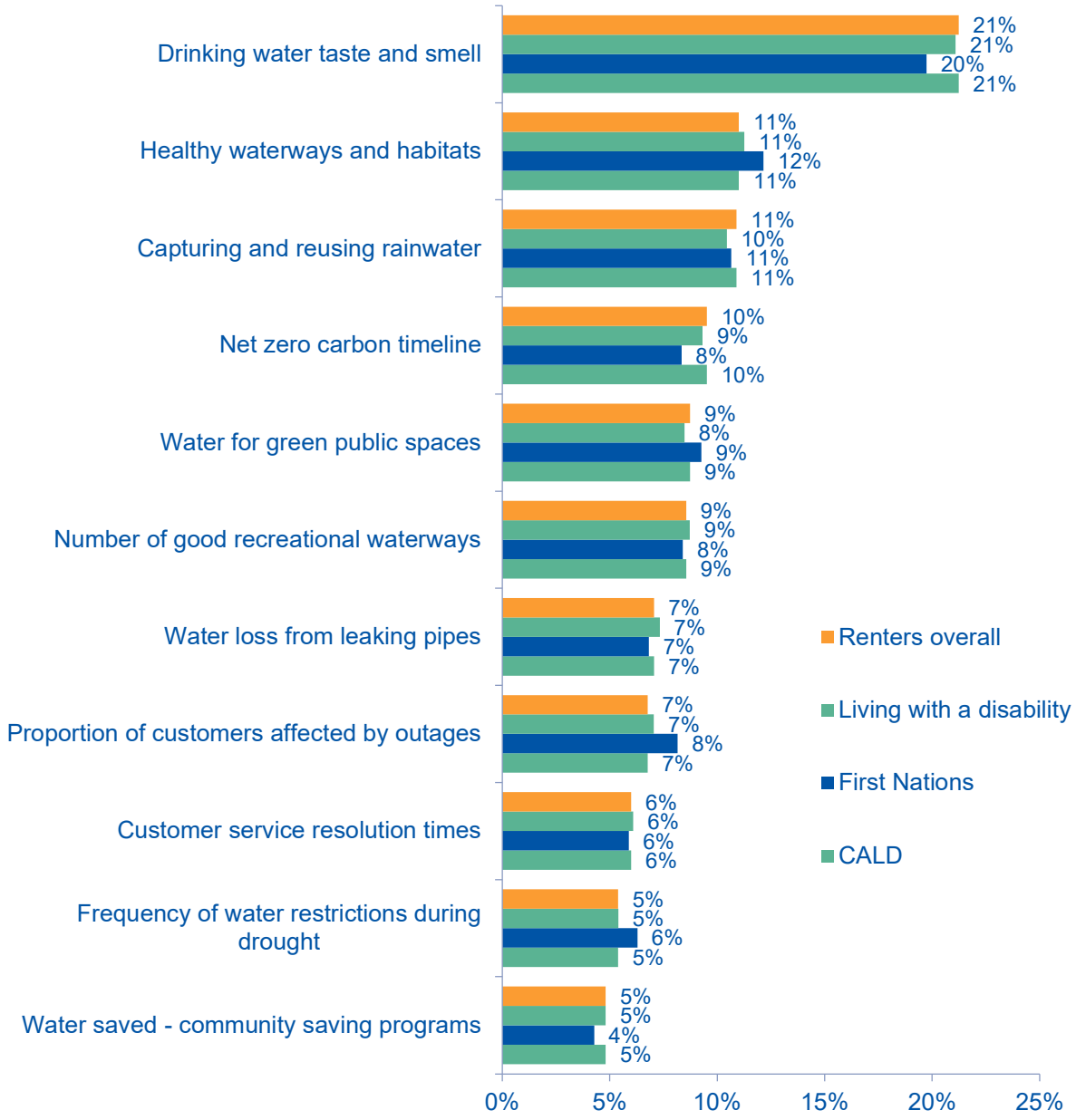


Base: Homeowners' sample (n=1,974)

Attribute importance: key subgroups (renter's model)

Figure 8 shows the attribute importance scores for key subgroups compared to the renter's model, which shows relative consistency across the different attributes.

Figure 8 Attribute importance – key subgroups – renter's model



Base: Renters' sample (n=498)

8.5.2 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.

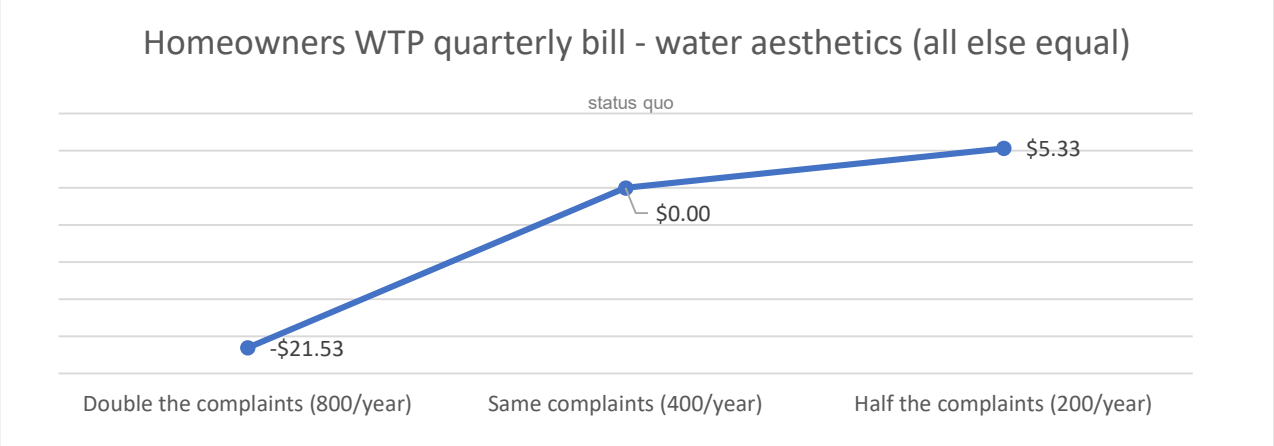
For many of the attributes, WTP was not linear over the range of levels tested. It is apparent that customers valued the first increment of improvement more highly than subsequent increments (displaying the principle of diminishing marginal returns). Another important finding is that for some attributes, customers were more value-sensitive to a decrease in service level than an improvement. This is a common finding in customer research, where losses in service are felt more acutely than an equal incremental gain (the losses are asymmetrical to the gains, when valued in dollar terms).

Drinking Water Aesthetics

An important point to note about drinking water aesthetics is that the influence of this attribute appears to be more strongly affected by **loss aversion**, a desire not to let standards slip and the need for compensation if they did; rather than a willingness to pay extra for improved standards.

For example (using the homeowner's model), when keeping all other attributes their current level, Figure 9 shows that customers were WTP $5.33 on top of their quarterly water bill to halve the number of water aesthetic complaints from 400 to 200 per year. This compares to an expected compensation of $21.53 (reduction in quarterly bill) if complaints were to double (another way of interpreting this is that customers would be WTP $21.53 each quarter for an investment strategy that would prevent a doubling of complaints).

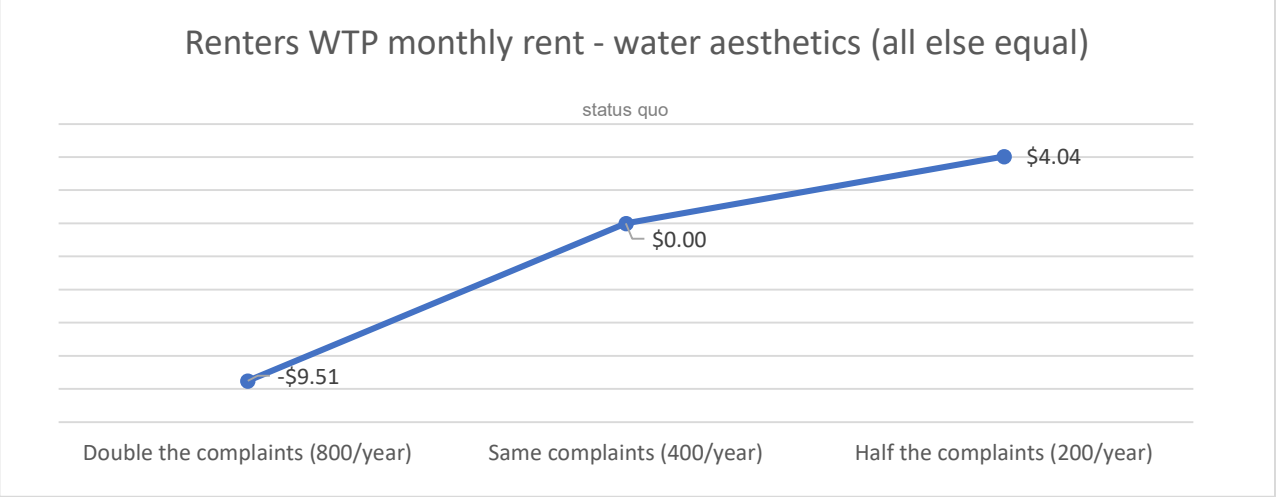
Figure 9 Homeowners' WTP quarterly bill – water aesthetics



Base: Homeowners' sample (n=1,974)

A similar outcome can be seen with renters who would expect a $9.51 decrease in their monthly rent if complaints doubled but would only pay an extra $4.04 per month to see complaints halved. Please note this chart and other charts in this section assume that this attribute is the only attribute to change, if other attributes were to change at the same time, WTP changes would be different.

Figure 10 Renters' WTP monthly rent – water aesthetics

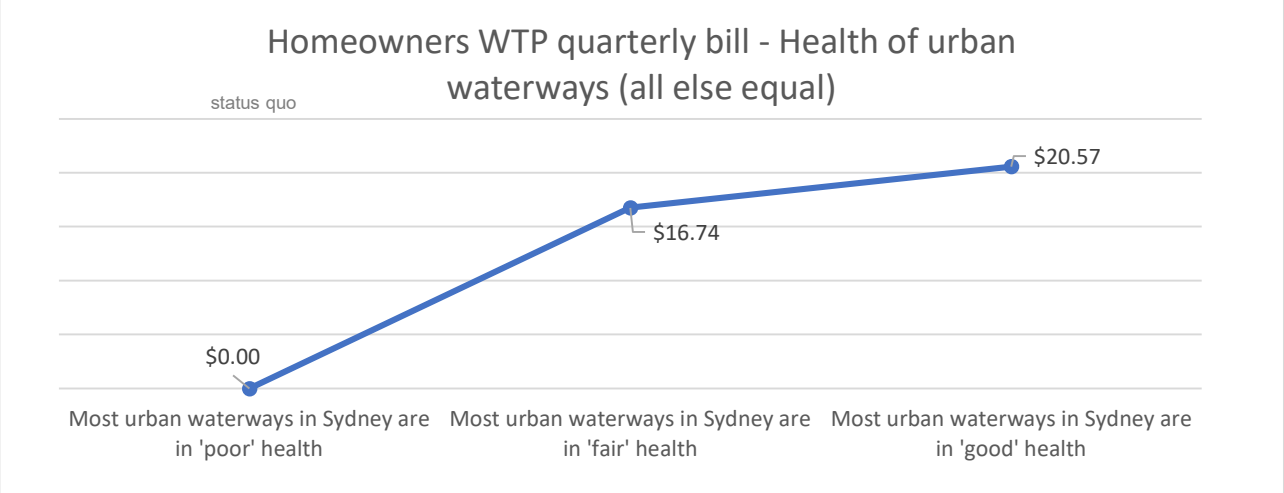


Base: Renters' sample (n=498)

Proportion impacted by health of urban waterways

Figure 11 below shows WTP for improvements in health of urban waterways. For example, if all other attributes are held constant with the status quo, customers were willing to pay an average of $16.74 extra to have most urban waterways in the Greater Sydney rated as being in fair health (when compared to a base scenario of most urban waterways in poor health). Customers were willing to pay an average of an additional $3.83 to upgrade the health further, so that most urban waterways in Sydney are rated as being in good health. This shows that the marginal utility gain between poor and fair is greater than between fair and good.

Figure 11 Homeowners' WTP quarterly bill – health of urban waterways

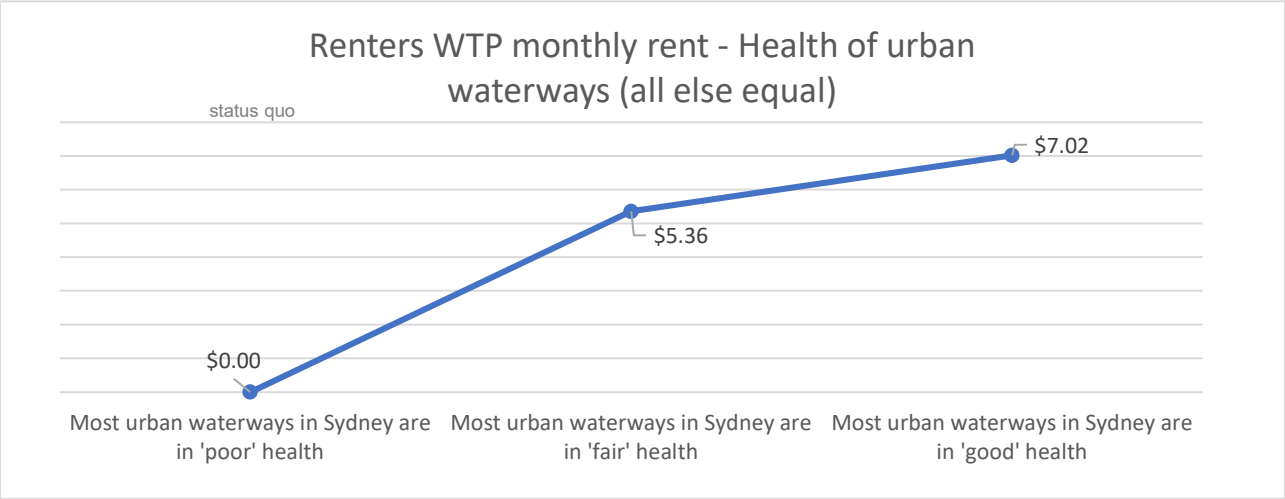


Base: Homeowners' sample (n=1,974)

For renters, a similar pattern is noted (when all other attributes are in line with the status quo). Figure 12 shows that these customers were willing to pay an additional $5.36 on top of their monthly rent to ensure that most urban waterways are in fair health (as opposed to most being in poor health). Customers said they would then pay an additional $1.66 to upgrade the health of

most urban waterways to good. The dollar cost associated with increasing waterway health from good to fair and fair to good is also unlikely to follow a linear relationship, so this difference in WTP will have strategic implications for Sydney Water if they are hoping to deliver outcomes of this nature.

Figure 12 Renters' WTP monthly rent – health of urban waterways

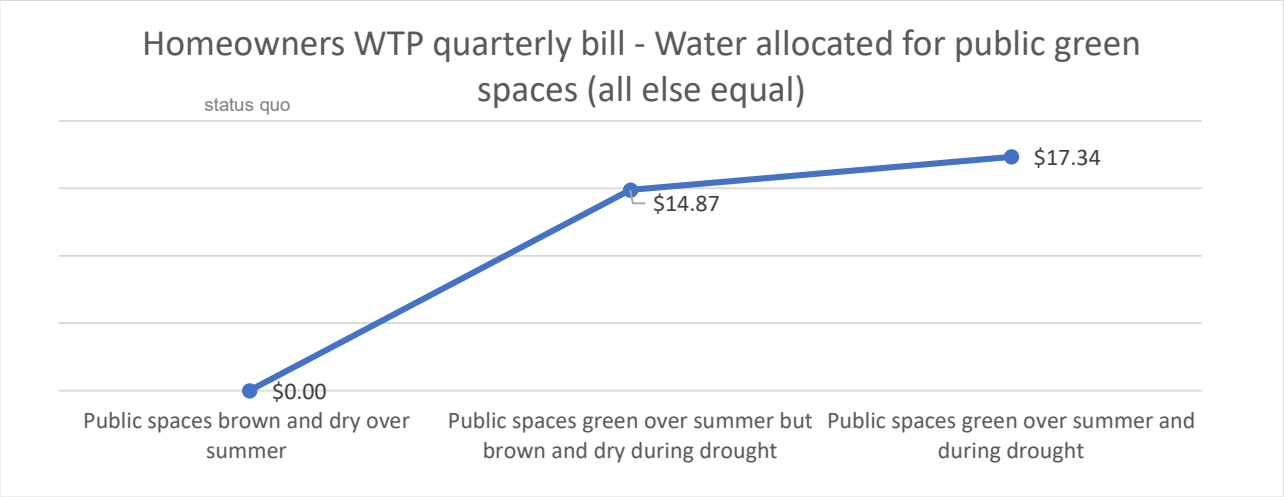


Base: Renters' sample (n=498)

Water allocated for public green spaces

Figure 13 shows customer's WTP derived from having green public spaces. For example, if all other attributes are held in line with the status quo, customers are willing to pay on average $14.87 above their current quarterly bills to see green public spaces in summer when the city isn't in drought (the current status quo level is brown public spaces in summer). Customers would also be WTP an additional $2.47 to maintain green public spaces in summer, even when there is drought, which adds up to $17.34 on top of their current quarterly bill (on average, when compared to the status quo). This suggests that green public spaces in summer are highly valued, but that when there is a drought the marginal utility derived from maintaining green spaces is somewhat diminished.

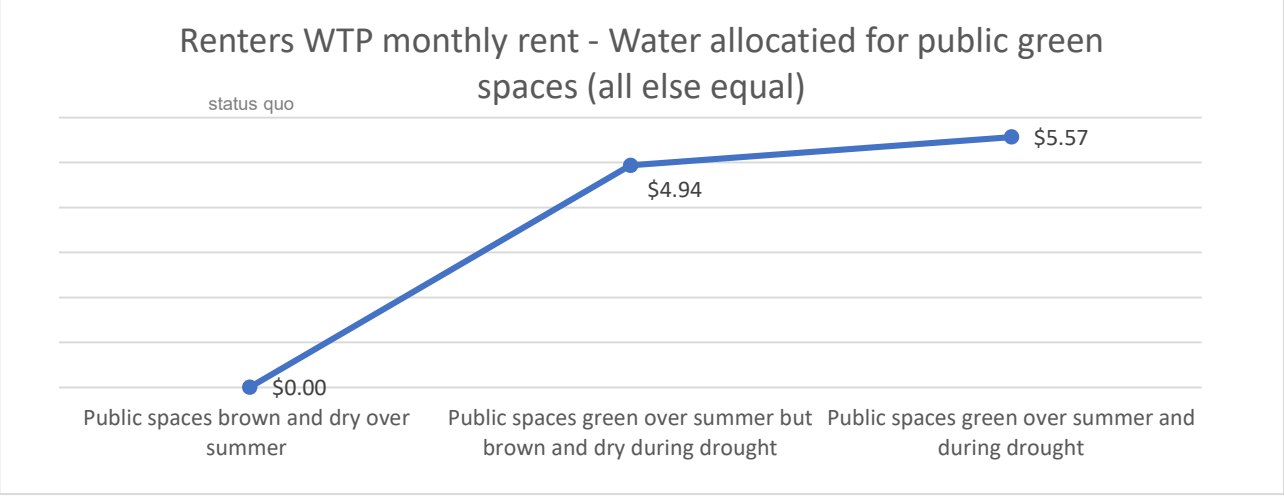
Figure 13 Homeowners' WTP quarterly bill – water allocated for public green spaces



Base: Homeowners' sample (n=1,974)

For renters, a similar pattern is noted (when all other attributes are in line with the status quo). Figure 14 shows that these customers were WTP, on average, $4.94 on top of their monthly rent to ensure there are green public spaces during summer when not in drought. They were also WTP an additional $0.63 on top of that, to keep public spaces green even in drought.

Figure 14 Renters' WTP monthly rent – water allocated for public green spaces

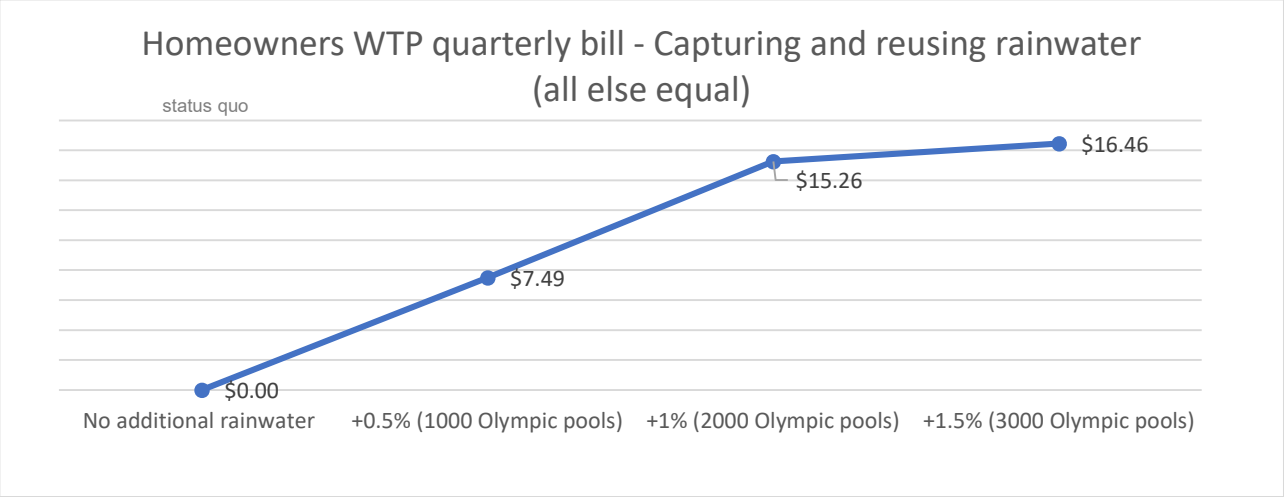


Base: Renters' sample (n=498)

Capturing and reusing rainwater

Figure 15 shows how much customers were WTP on average to capture and reuse rainwater through stormwater harvesting (when all other attributes are in line with the status quo). Homeowners were WTP an additional $7.49 to capture and reuse around 1,000 Olympic pools worth of rainwater (compared to the status quo where no stormwater harvesting takes place). On average, they were prepared to pay $15.26 above their current bill to capture and reuse 2,000 Olympic swimming pools and $16.46 above their current bill to capture and reuse 3,000 Olympic swimming pools worth of rainwater. This shows that WTP for additional capture and reuse of rainwater declines as the volume captured increases, which is likely to act as a growth constraint for this technology if it were to be approved.

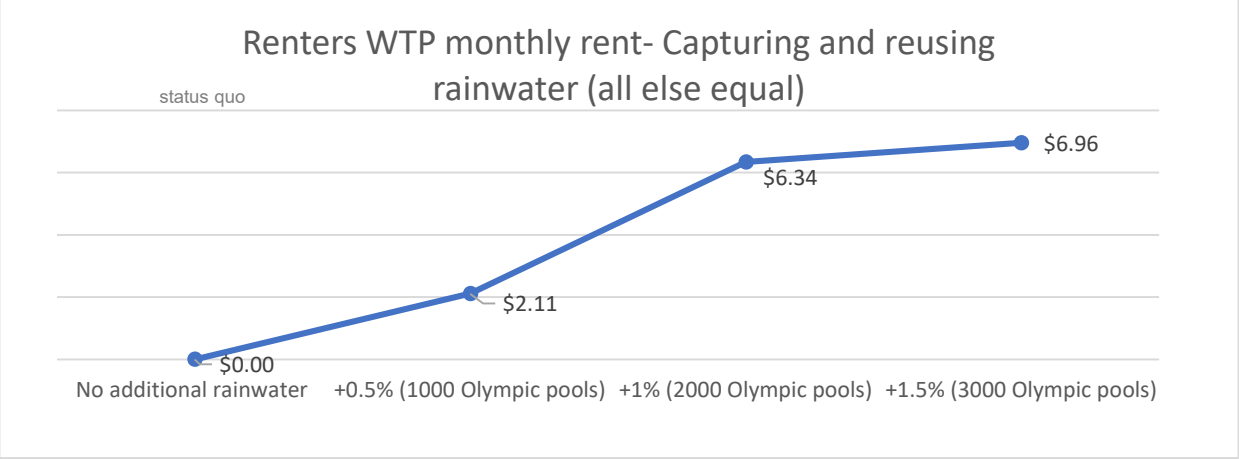
Figure 15 Homeowners' WTP quarterly bill – capturing and reusing rainwater



Base: Homeowners' sample (n=1,974)

For renters, a similar pattern is noted. When all other attributes remain the same, these customers were WTP $2.11 on top of their current monthly rent to capture and reuse 1,000 Olympic pools worth of rainwater, $6.34 for 2,000 Olympic pools and $6.96 for 3,000 Olympic pools.

Figure 16 Renters' WTP monthly rent – capturing and reusing rainwater

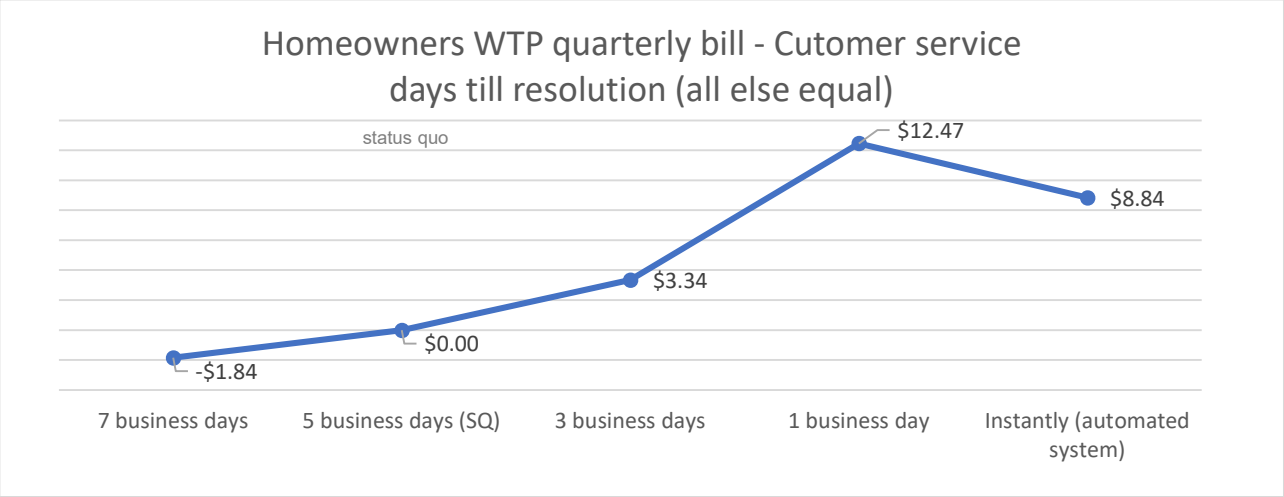


Base: Renters' sample (n=498)

Customer service number of days till resolution

Figure 17 shows WTP (or consumer surplus) increases as the number of days required for a resolution reduces. For example, if all other attributes are held at the status quo, people were WTP $12.47 above their current quarterly bills to reduce the resolution wait times from their current level (where resolution can be expected within five days) to a resolution within one day. This falls to $8.84 if resolutions were to be instant. A likely explanation for why customers were WTP less for instantaneous service is the assumption that this would mean the human element is removed and that Sydney Water are relying on bots or artificial intelligence to deliver customer service. The qualitative research shows that removing the human element from customer service is undesirable to many customers.

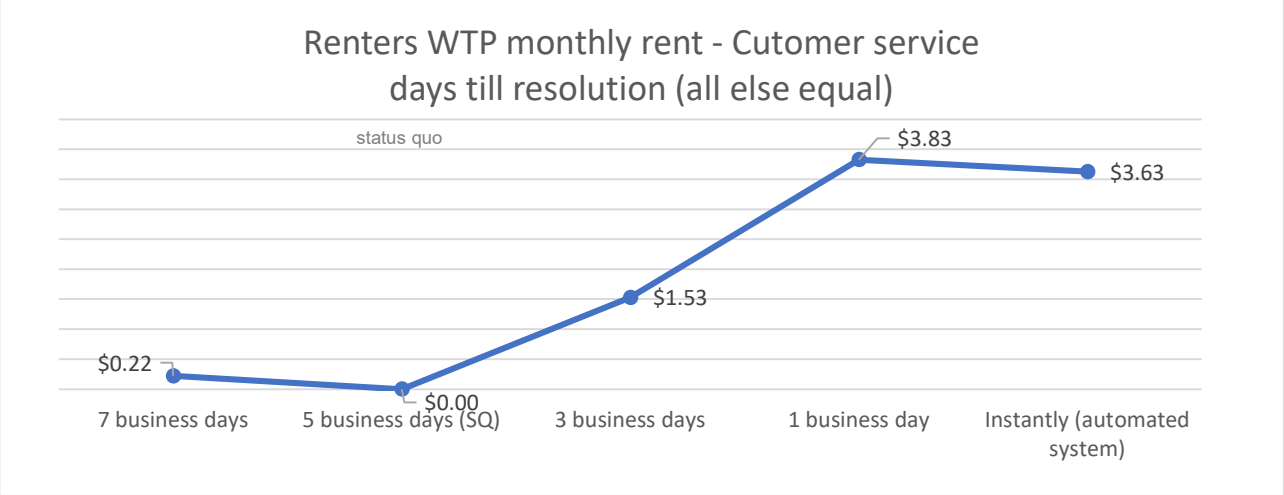
Figure 17 Homeowners' WTP quarterly bill – customer service days to resolution



Base: Homeowners' sample (n=1,974)

For renters, a similar pattern is noted (when all other attributes are in line with the status quo) with maximum utility being achieved at 1 business day. Figure 18 shows that these customers are WTP an additional $3.83 to ensure resolution times within one business day. Again, instantaneous automated resolutions were less desirable, likely linked to dissatisfaction with the removal of the human element from customer service interactions.

Figure 18 Renters' WTP monthly rent – customer service days to resolution

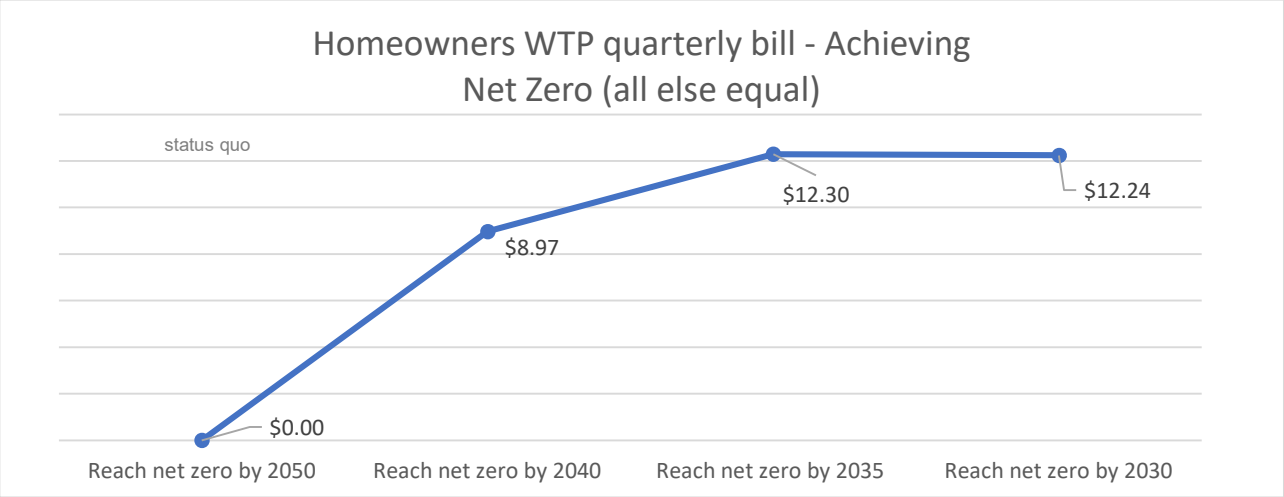


Base: Renters' sample (n=498)

Timeline for net zero

The charts below show diminishing marginal WTP (or consumer surplus) for reaching net zero carbon emissions more quickly than the status quo commitment of 2050 amongst homeowners. For example, if all other attributes are held at the status quo, people were WTP an extra $8.97 above their current quarterly bills to achieve net zero by 2040. This jumped to $12.30 to achieve it by 2035, yet these customers are only WTP $12.24 to achieve net zero by 2030.

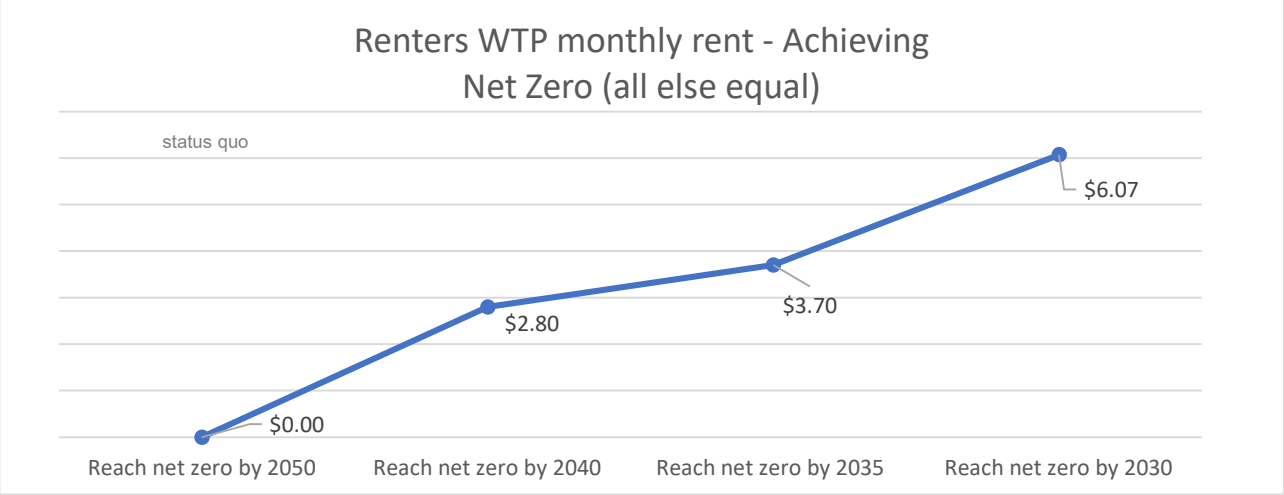
Figure 19 Homeowners' WTP quarterly bill – achieving net zero



Base: Homeowners' sample (n=1,974)

For renters, this diminishing marginal utility or WTP doesn't hold. Instead, the sentiment appears to reflect what we often heard in the qualitative research **'the sooner the better'**. Figure 20 shows that these customers were only WTP $2.80 extra on their monthly rent to achieve net zero by 2040. While this increased to $3.70 to achieve it by 2035, it jumped up to $6.07 if net zero emissions are achieved in 2030. This possibly reflects the younger demographic of renters, where younger age groups typically place a higher value on reducing carbon emissions.

Figure 20 Renters' WTP monthly rent – achieving net zero

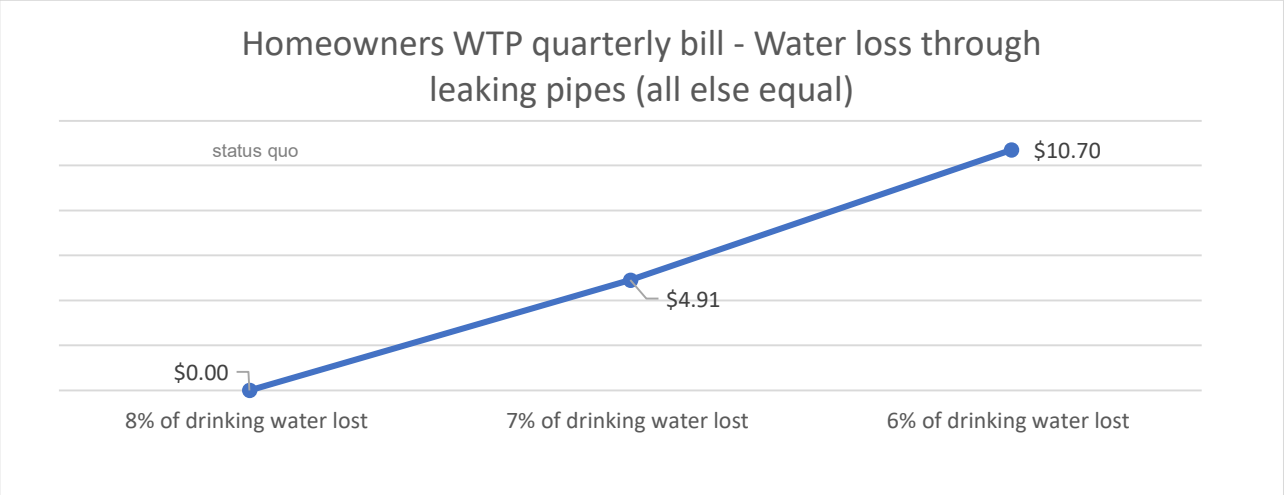


Base: Renters' sample (n=498)

Proportion of drinking water lost through leaks and breaks

Figure 21 shows customers' average WTP to reduce the percentage of Greater Sydney's drinking water that is lost due to leaks or breaks in the pipe network (when all other attributes are in line with the status quo). Homeowners were WTP $4.91 on top of their current quarterly bill to reduce the volume of water from 8% to 7% and were WTP a further $5.79 to reduce water loss to 6%.

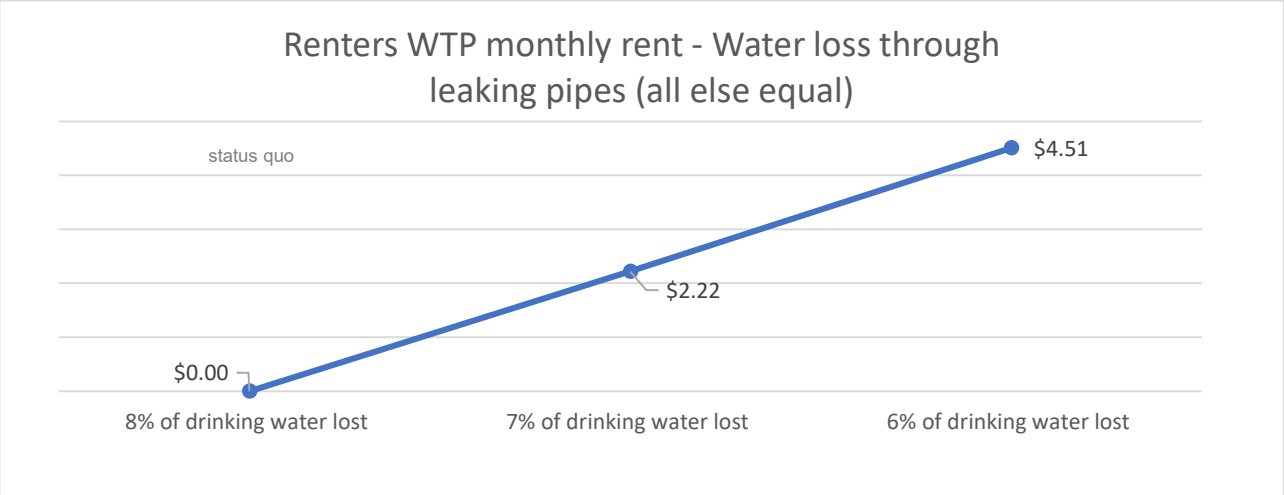
Figure 21 Homeowners' WTP quarterly bill – water loss through leaking pipes



Base: Homeowners' sample (n=1,974)

For renters, a similar pattern was noted (when all other attributes are in line with the status quo). Figure 22 shows that these customers were WTP $2.22 on top of their monthly rent to reduce the percentage of drinking water lost due to leaks and breaks from 8% to 7%. They were also WTP an additional $2.29 to reduce it further from 7% to 6%.

Figure 22 Renters' WTP monthly rent – water loss through leaking pipes

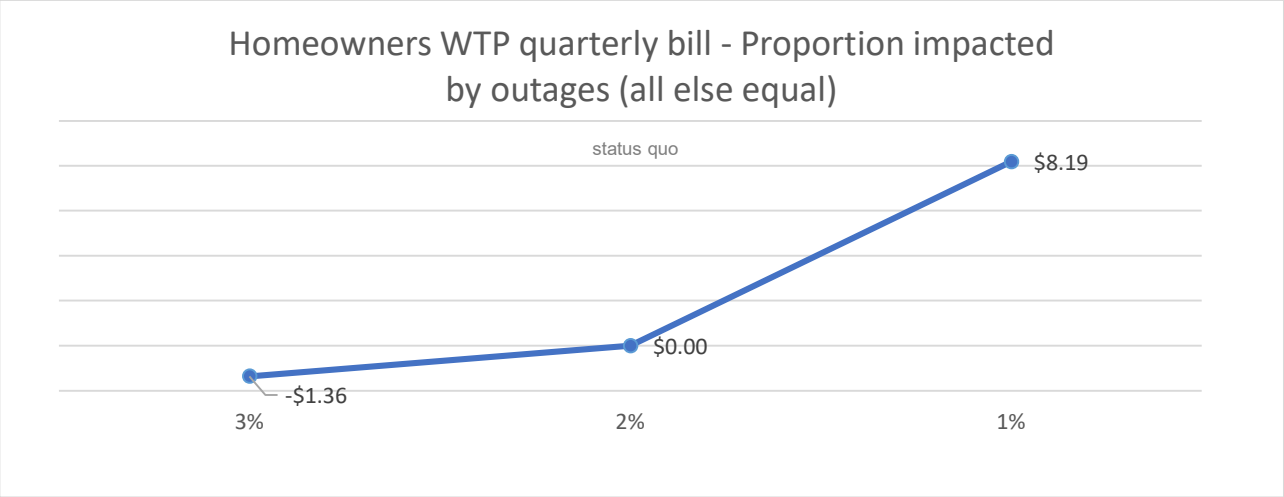


Base: Renters' sample (n=498)

Proportion impacted by outages

Figure 23 shows how WTP changes as the proportion of houses impacted by outages changes. For example, if all other attributes are held in-line with the status quo, homeowners were WTP an average of $8.19 above their current quarterly bills to reduce the proportion of households impacted by outages from 2% (current percentage) to 1%. It is also interesting to note that if outages were to increase from 2% to 3% of households, the average expected bill discount would only be $1.36.

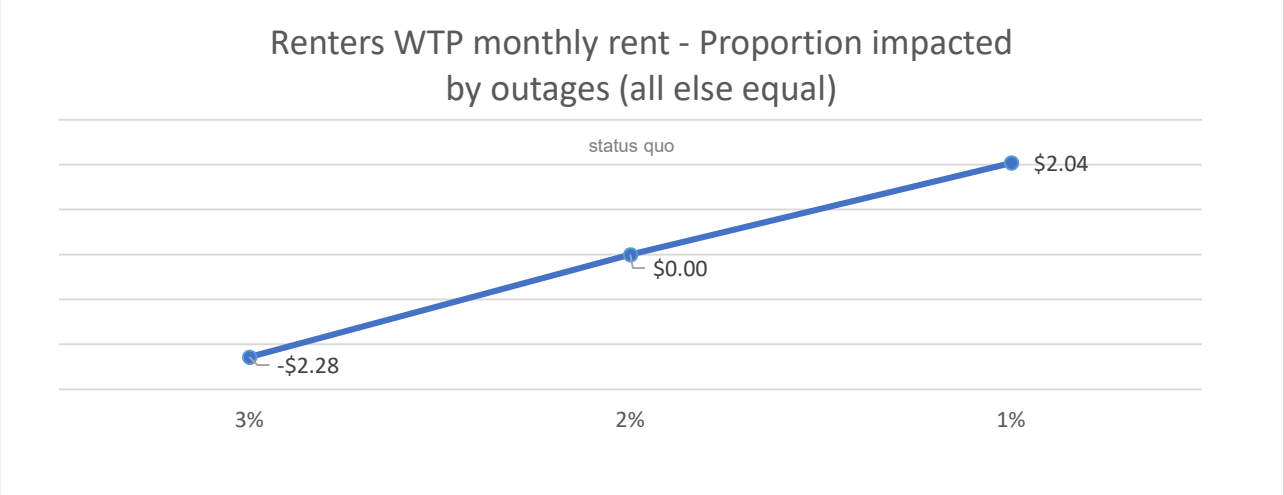
Figure 23 Homeowners' WTP quarterly bill – proportion impacted by outages



Base: Homeowners' sample (n=1,974)

For renters, the relationship was more linear (when all other attributes are in line with the status quo). Figure 24 shows that these customers were WTP $2.04 on top of their monthly rent to reduce the proportion of households impacted by outages to 1%. They would also expect a $2.28 discount, on average, if the proportion impacted were to raise to 3%.

Figure 24 Renters' WTP monthly rent – proportion impacted by outages



Base: Renters' sample (n=498)

Frequency of water restrictions

The charts below show that customers are WTP only a small amount to reduce the frequency of water restrictions. For example, if all other attributes are held in line with the status quo, people were WTP $1.95 above their current quarterly bills to reduce the frequency of restrictions from the current expected level (six months of restrictions over a 10-year period) to three months in a 10-year period.

This low WTP relative to other attributes may be due to customers being accepting that restrictions, from time to time, are a necessary part of dealing with drought, and that a frequency of six months in 10 years is not too severe.

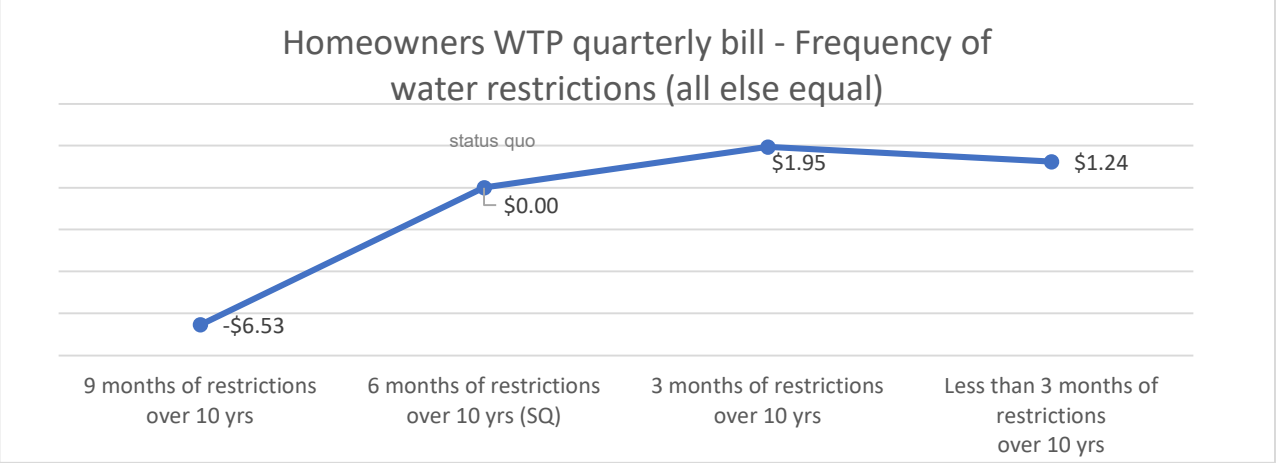
Alternatively, it may be the case that respondents were not fully cognisant of what six months of restrictions (defined in the survey as a total ban on outdoor water use in private and public places), would mean in practice for visual amenity, inconvenience, and disruption to the economy. Many of the customers surveyed may not have a good recollection of the impact of a complete ban on outdoor water use over an extended period, as the last time this occurred was in 2009.

The most recent restrictions in Sydney were applied over the period 1 June 2019 to 1 December 2020 (a period of almost 18 months). However, the first five months of this period were Level 1 restrictions, which still allowed gardens and lawns to be watered by hand or with a drip irrigation system. The more severe Level 2 water restrictions did not come into effect until 10 December 2019, when Greater Sydney's total dam storage levels were at 45%. This level of restrictions lasted for just under three months. Level 2 still allows gardens to be watered with a watering can or bucket (or with a drip irrigation system for 15 minutes). Level 2 restrictions were eased back to Level 1 on 1 March 2020 and then ceased altogether on 1 December 2020.

Given the breadth of attributes tested in the DCE, it was not possible to evaluate how preferences and WTP may change for various combinations of restriction severity, duration, and frequency – particularly if the consequences of each of these were presented in greater detail to survey participants.

Moving back to the results chart, it can be seen that loss aversion is relatively strong, with customers WTP $6.53 to prevent restrictions being increased in frequency from the current level of six months in every 10 years to nine months in every 10 years.

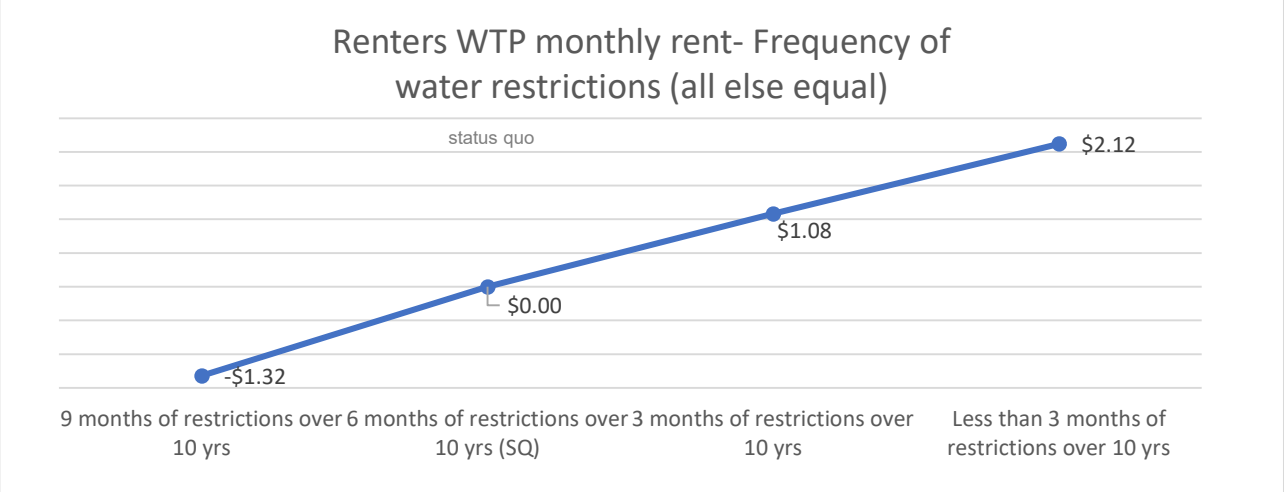
Figure 25 Homeowners' WTP quarterly bill – frequency of water restrictions



Base: Homeowners' sample (n=1,974)

For renters, this diminishing marginal utility was less apparent, with the relationship appearing more linear and there being no notable evidence of loss aversion. Again, these WTP values pivot around monthly rent rather than the quarterly water bill and this chart assumes all other attributes are in line with the status quo.

Figure 26 Renters' WTP monthly rent – frequency of water restrictions

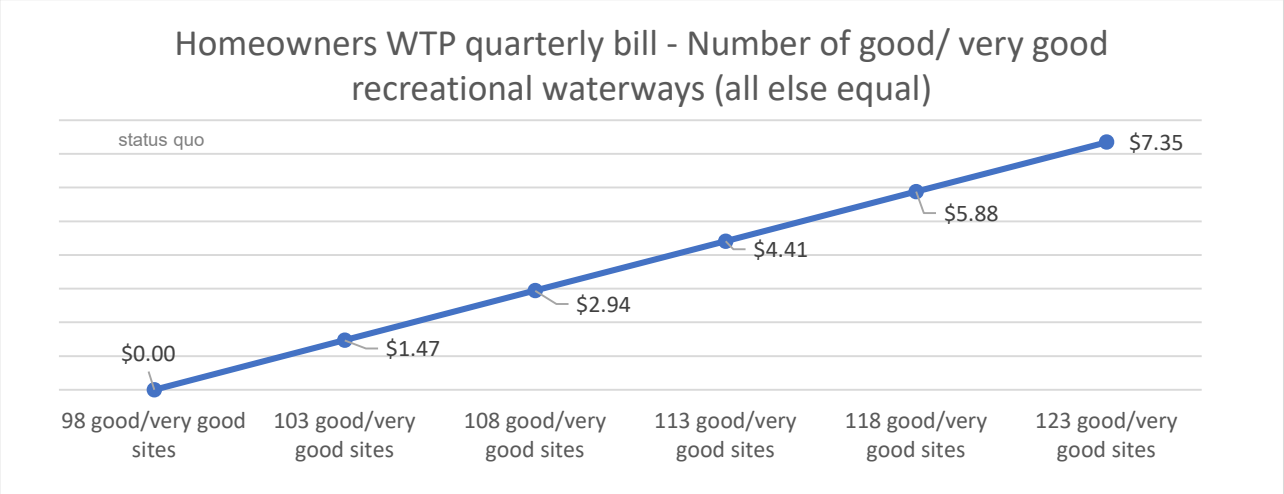


Base: Renters' sample (n=498)

Number of good/ very good recreational waterways

Figure 27 shows customers' average WTP for an increase in the number of recreational waterways deemed to be of good or very good quality (when all other attributes are in line with the status quo). On average, homeowners were willing to pay an additional $7.35 on their quarterly bill to increase the number of good/very good sites to 123, compared with the current 98 good sites.

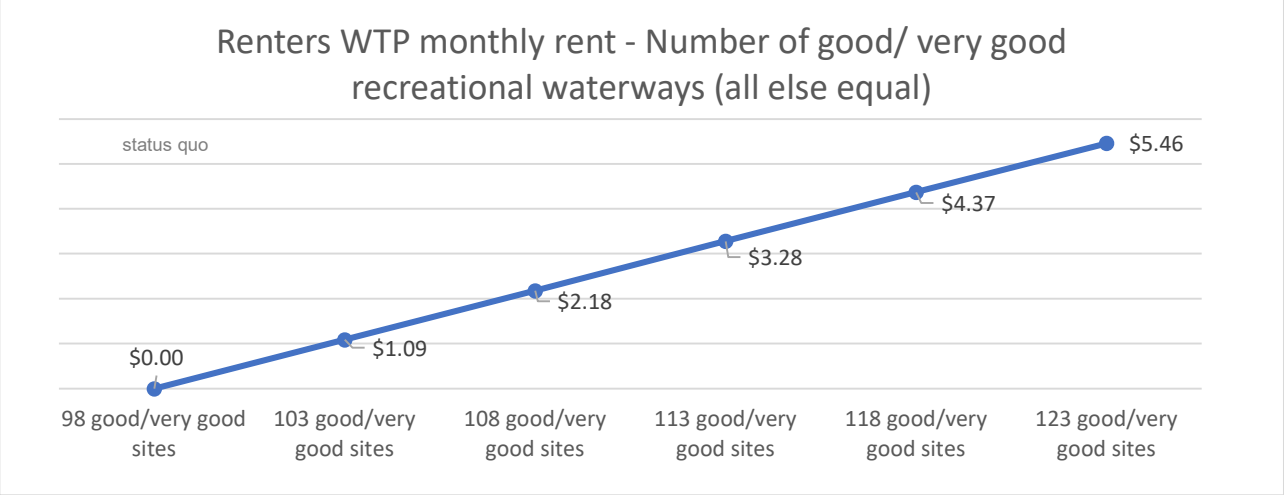
Figure 27 Homeowners' WTP quarterly bill – number of good/very good recreational waterways



Base: Homeowners' sample (n=1,974)

For renters, a similar pattern is noted (when all other attributes are held in line with the status quo). For example, on average, renters were willing to pay an additional $5.46 on top of their current monthly rent to increase the number of good/very good sites to 123 compared to a base scenario of 98 good sites.

Figure 28 Renters' WTP monthly rent – number of good/very good recreational waterways

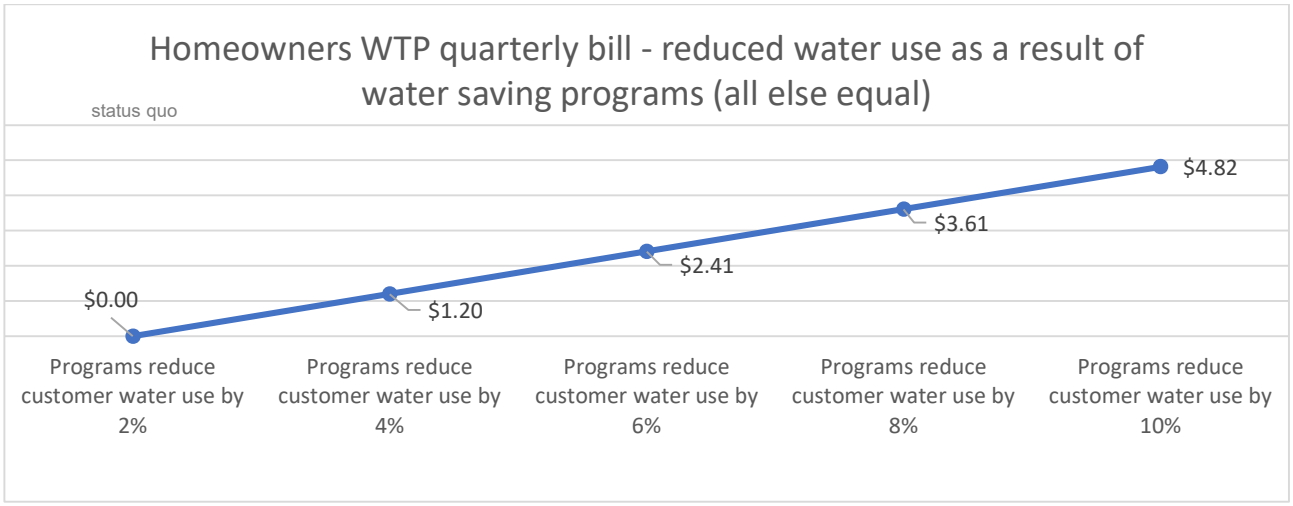


Base: Renters' sample (n=498)

Community water saving programs and reduced customer water use

Figure 29 shows customers' average WTP for an increase in the number of recreational waterways deemed to be of good or very good quality (when all other attributes are in line with the status quo). On average, homeowners were willing to pay $4.82 on top of their current quarterly bill to reduce customer water use by 10% as a result of water saving programs.

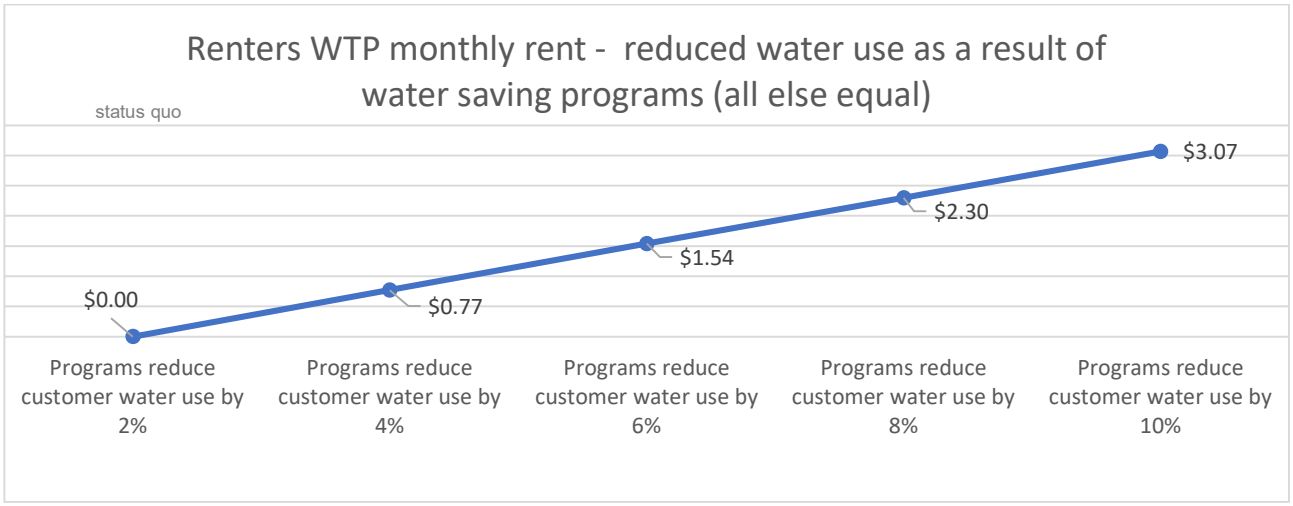
Figure 29 Homeowners' WTP quarterly bill – reduced water use through water saving programs



Base: Homeowners' sample (n=1,974)

For renters, a similar pattern is noted (when all other attributes are held in line with the status quo). Renter were willing to pay an average of an additional $3.07 on top of their current monthly rent to reduce customer water use by 10% as a result of water saving programs.

Figure 30 Renters' WTP monthly rent – reduced water use through water saving programs



Base: Renters' sample (n=498)

8.5.3 Scenario analysis and simulation

Table 11 contains three hypothetical examples of simulated WTP for different service packages for homeowners. Each WTP value can be interpreted as the additional monetary benefit that homeowners perceived to be associated with that service package (as a whole).

- **Scenario 1: "The economiser package":** The levels of each attribute are either kept in line with the status quo or made worse, in this situation customers expected an average discount of $31.26 off their quarterly bill to derive the same utility as they do currently.
- **Scenario 2: "Going Green":** The levels of environmentally focused attributes have been increased while others have primarily remained in line with the status quo. In this scenario customers were WTP, on average, an extra $31.89 per quarter for the package of improvements.
- **Scenario 3: "Boosting customer service":** The levels of customer service quality outcomes (outages, resolution times, frequency of restrictions) have been improved while others have primarily remained in line with the status quo. In this scenario customers were WTP, on average, an extra $28.42 per quarter for the package of service improvements.

Please note that these are **hypothetical** scenarios that were presented as **examples only**. They represent a possible package of outcomes that Sydney Water could conceivably present to customers for feedback if they were deemed optimal from both a strategic and cost perspective. The actual scenarios that Sydney Water will present to customers has not yet been decided. Further simulations can be run to test and optimise alternative packages of outcomes using the dashboard accompanying this report, where the corresponding WTP of each scenario can be observed. Total WTP or total consumer surplus is only one element of the final offer. The costs of delivering these outcomes, as well as a range of other strategic considerations will factor into what Sydney Water ultimately deliver.

Table 11 Hypothetical WTP scenarios

Attribute	Option 1 – The economiser package	Option 2 – Going green	Option 3 – Boosting customer service
WTP$	**$ -31.26**	**$31.89**	**$28.42**
Recreational waterways	98 good or very good sites	123 good/very good sites	98 good or very good sites
Community water saving programs	Customers will save 2% water use	Customers will save 2% water use	Customers will save 10% water use
Healthy waterways and habitats	Most urban waterways in	Most urban waterways in	Most urban waterways in Sydney are in 'poor' health

	Sydney are in 'poor' health	Sydney are in 'good' health	
Drinking water taste and smell	Double the complaints (800/year)	Double the complaints (800/year)	Half the complaints (200/year)
Proportion of customers affected by outages	3%	3%	1%
Water for green spaces	Public spaces brown and dry over summer	Public spaces brown and dry over summer	Public spaces brown and dry over summer
Customer service resolution time	7 business days	7 business days	Instant (automated system)
Net zero carbon	Reach net zero by 2050	Reach net zero by 2030	Reach net zero by 2050
Water restrictions during drought	9 months of restrictions over 10 years	6 months of restrictions over 10 years	Less than 3 months of restrictions over 10 years
Water loss from leaking pipes	8% of drinking water lost	8% of drinking water lost	8% of drinking water lost
Capturing and reusing rainwater	No additional rainwater	+1.5% (1000 Olympic pools)	No additional rainwater

9 Glossary and bibliography

9.1 Glossary of terms

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

Acronym	Descriptor
CALD	Culturally and Linguistically Diverse
DCE	Discrete Choice Experiment
Greater Sydney	Greater Sydney (including the Blue Mountains and Illawarra)
IPART	Independent Pricing and Regulatory Tribunal
LGA	Local Government Area
LTCOP	Long-Term Capital and Operating Plan
SMEs	Small to Medium Sized Enterprises
SMS	Short Message Service; text message
Value Maker	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.

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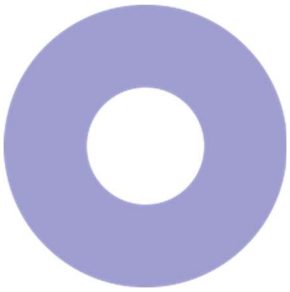
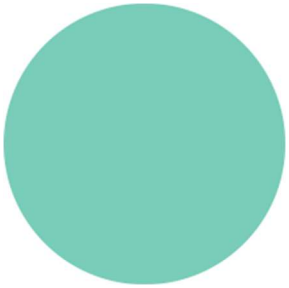


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