FROM INSIGHT TO INFLUENCE

Draft Water Resources Management Plan 2024

Thematic analysis

Final Report

Prepared for SSC

Prepared by Impact Research

20 September 2022

Project No. 1345

South Staffs Water

Cambridge Water

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1. Glossary

Abbreviation	Definition
AMI	Advanced Metering Infrastructure
AMR	Automatic Meter Reading
BVP	Best Value Plan
CAM	Cambridge Water supply region
CO2	Carbon Dioxide
Covid-19/Pandemic	The Covid-19 Pandemic impacts that commenced in March 2020 and are still ongoing.
HH	Household (customers)
NEUBs	Non-Essential Usage Bans for business customers
Net Zero	Cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere, by oceans and forests for instance. Often used as shorthand for the UK Net Zero goals, which is for the UK to achieve Net Zero emissions by 2050.
NHH	Non-household (customers)
MCDA	Multi-Criteria Decision Analysis is a sub-discipline of operations research that explicitly evaluates multiple conflicting criteria in decision making. Cost or price is usually one of the main criteria, and some measure of quality is typically another criterion, easily in conflict with the cost.
ODI	Outcome Delivery Incentive: Ofwat provide financial payments to water companies from customers for water companies performing beyond their committed levels of service ('outperformance payments') or from water companies to customers for performing below their commitments ('underperformance payments').
PR19/24	Price Review 2019/2024
PSR	Priority Services Register
SME	Small and Medium-sized Enterprises
SRO	Strategic Resource Options
SSC	South Staffs Water (encompassing both supply regions)
SSW	South Staffs Water supply region
TUBs	Temporary Use Bans for household customers
WRAP	Water Resources Advisory Panel
WRE	Water Resources East - water resources regional planning group
WRMP19/WRMP24	Water Resources Management Plan
WRW	Water Resources West - water resources regional planning group
WTP	Willingness to Pay

2. INTRODUCTION

Impact Research were commissioned to work with SSC for the following:

- To deliver a robust triangulation of customers' and stakeholders' priorities that underpins the narrative of SSC's plans:
    - Robustly triangulate evidence relating to WRMP to support all key decisions
    - Support the development of SSC's Performance Commitment (PC) package
    - Support the development of SSC's ODI rate setting
    - Triangulate WTP values to set central, upper and lower values.
- To support the development of SSC plans with triangulated valuations and insights to best deliver 'public value'
- Create an insight matrix from SSC's trackers to assist in the delivery of the PR19 plan and guide PR24
- Enable both SSC challenge panels and board to effectively challenge the approach plus independent review by a third-party expert

This report is one of two resulting from phase one of the project, triangulating foundation evidence to inform development of WRMP24 (and subsequently PR24):

1. Technical triangulation – the process of drawing together all relevant data sources and combining them within a formal framework that will ultimately produce the value ranges suitable for the MCDA and investment modelling.

2. **Combined thematic insight** (this report) – articulating these results and wider inputs that cannot be formally included in the above, to guide SSC in the development of their draft plans.

This report summarises the combined thematic insight from a review of almost 40 pieces of evidence including research reports, literature reviews and white papers from SSCs region, other water companies and relevant third parties. It will be used by SSC to inform and guide the development of their WRMP24 plans and will form an evidence base to support the final plans. The report will be updated in 2023 in light of further evidence from customer engagement including business as usual engagement and feedback from wider stakeholders such as Ofwat over the next year.

3. APPROACH

Systematic review

The review has been conducted by external consultants Impact Research Ltd., using a systematic framework agreed with SSC from the outset. SSC identified areas that are key to WRMP24 and therefore the analysis and report were structured under these sub-headings, as follows:

WRMP24 key areas – thematic reviews		
1.	**Best Value Planning and investment priorities**	
2.	**Environmental destination**	
3.	**Service level and resilience to drought**	
4.	**Balancing demand and supply side options**	
5.	**Demand side options**	Leakage
		Water recycling
		Behaviour change
		Metering – including smart technology
		Supporting low-income and priority households
6.	**Source preferences, reservoirs and water transfers** – including associated water quality impacts (Cambridge Water focus)	
7.	**Acceptability and affordability of WRMP24 plans**	

Each data source was individually reviewed with a particular focus on conclusions and key findings that related to the topics highlighted above. Over 70 documents were reviewed for relevant content, and 37 were included in the final report, including published and unpublished documents from the following organisations:

- SSC (Cambridge, South Staffs and Combined region reports)
- Anglian Water
- CCW
- Hafren Dyfrdwy
- MOSL
- Severn Trent
- Sustainability First
- UKWIR
- Welsh Water
- WRE
- WRW

An Excel Spreadsheet was created to serve as the key data collation tool. The tool has one sheet per topic area and common columns to each, comprised of critical information about the data source including date of data collection, contextual environment, sample size, objectives of study, applicable region and method of data collection. Each report constitutes one line in the sheet (on every worksheet for which there was evidence relevant to that topic). Any insights relating to the topics above were recorded in the sheet using summary bullet points or similar. Any key sub-group differences were also recorded in order that consistencies or differences over time could easily be identified and customer groups highlighted that might be influencing any changes in perceptions. Once all the literature was reviewed, key insights were summarised for the most part in chronological order, highlighting trends over time and key audiences that need to be considered for each topic. Insights gathered from regions outside of SSC's operating area were summarised towards the end of each subsection in order to differentiate SSC customer views from those outside the region.

As SSC will be submitting two WRMPs, one for each supply region, the report draws out where there are significant differences between the two supply regions in stakeholder and customer preferences and views. Where this is not stated the reader should assume the findings reflect the views of customers/stakeholders of both supply regions. A summary is also provided in Section 11 of the report.

The summarised findings were then converted to prose during the report writing process, using verbatim comments and figures for clarification and expansion where appropriate, to answer the objectives set by SSC. Each objective is listed in the review as a subsection, under the wider topic headings. The insights have not in this case been given any particular "weights" in terms of

their representativeness in the report e.g. qualitative and quantitative research are presented with equal importance to the reader and respondent expertise on a particular topic has not increased or decreased the validity of any findings presented from that piece of research. The findings have simply been described with any appropriate context for interpretation e.g. the world environment at the time of the data collection or any limitations of the research identified.

This process is highly replicable and can be scrutinised by interested stakeholders as required. This review complies with the best practice framework outlined below to provide a robust and reliable approach to triangulation for this thematic review.

The best practice framework

SSC has committed to the over-arching recommendations of the triangulation framework put forward by CCW's extensive review of PR19 triangulation work[1], the essential features of their recommended best practice for triangulation are as follows:

2021 Grouping	Key activities	How the review has met recommendations
A strategic approach to collecting customer evidence	• Undertaking a phased and iterative approach • Developing a consistent and transparent decision framework • Putting in place assurance of the process • Linking Business as Usual (BAU) insight to strategic goals	• The review has taken place in two distinct phases; data collation and review into a pre-agreed framework, summarising of key insights against SSC objectives. • SSC has reviewed the draft document in line with objectives, and provided supplementary context or evidence where appropriate. These reviews did not compromise the independence of the report. • Some BAU insight has been included, and the review will be amended in 2023 to include more substantial evidence from BAU activities.
Collecting, collating and synthesising customer evidence	• A centralised process within the company • Capturing relevant granular metadata for insight	• Data has been collected from SSC evidence as well as external company publications. Each insight has been recorded in the framework, ready for synthesis into the thematic review document.
Weighting and combining customer evidence	• Transparent approach • Use of a standard approach • A clear approach to demonstrating balanced decisions • Defined decision-making framework	• The framework used allows for full transparency of where the data has been sourced, the themes under which each insight falls and therefore how it has been synthesised into the thematic review. • The insights have not been weighted as such in this review as it has not been deemed necessary to create a quantitative framework for assessing strength of evidence. In most cases evidence does not conflict, however where there are disparities the context, audience and any mitigating factors are outlined to guide the reader in interpretation of the significance of such conflicts.
Validating outputs	• Using multi-factor validation (internal, external and independent review) • Running sensitivity and scenario testing • Making research findings publicly available • Independent review of the triangulation process	• Multi factor validation, sensitivity and scenario testing are not appropriate for a thematic review as these relate to Willingness to Pay studies and therefore have not been included here. • The review will be published and many of the studies sourced as evidence are already in the public domain. • The review will form part of an independent assessment by Jacobs on behalf of SSC which will review how well SSC's draft WRMP24s reflect the customer and stakeholder feedback gained. Any recommendations will be assessed and included as appropriate.
Incorporating validated findings into the decisions	• The key enabler at this final stage is the use of a robust and transparent decision framework	• The framework used for data collation and synthesis will be available as an appendix to this report.

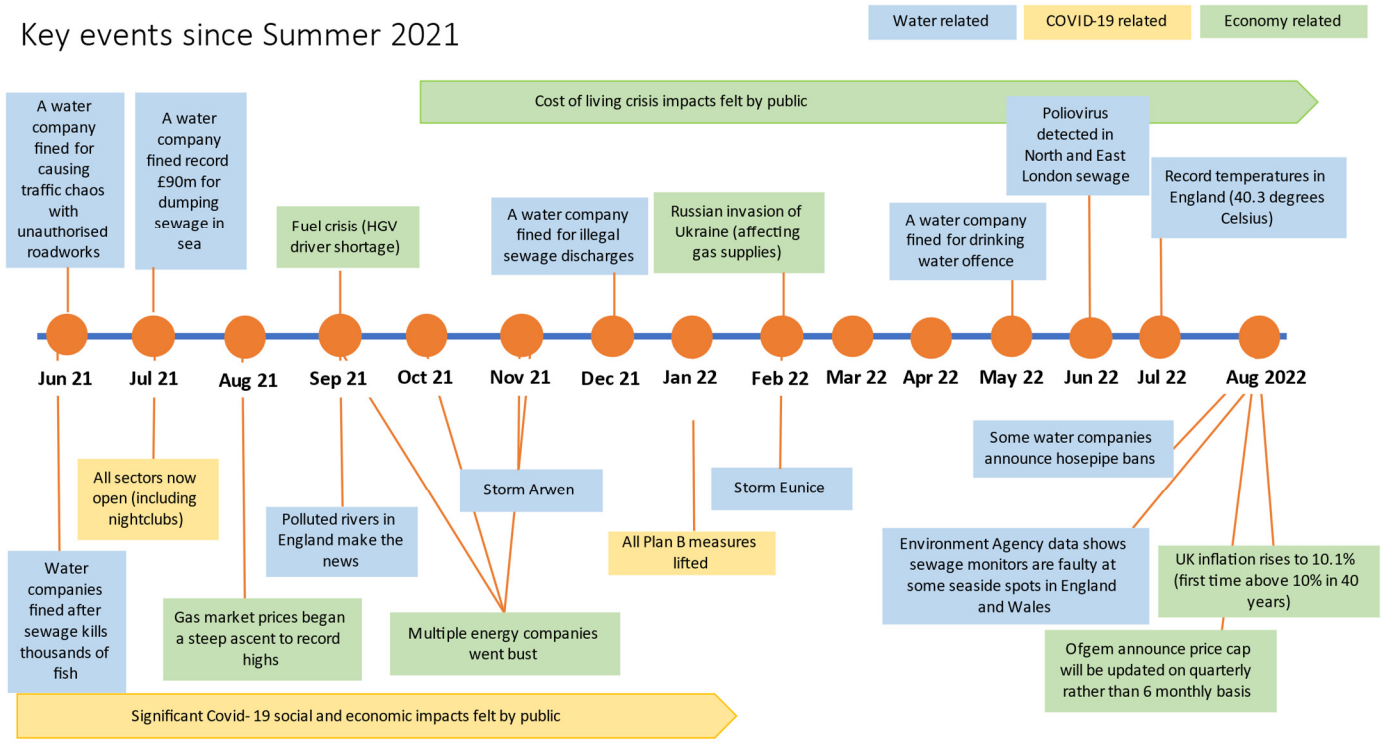
[1] CCW and SIA Partners, April 2021, TRIANGULATION- A REVIEW OF ITS USE AT PR19 AND GOOD PRACTICE

Data sources

Over 70 pieces of research/insight evidence were reviewed for inclusion in the thematic review (37 containing relevant evidence were included in the final analysis), comprising market research reports, literature reviews and a broad spectrum of qualitative, quantitative and secondary analytical insights. The reports date from 2017 to very recently published reports in summer 2022. This time period has been extraordinarily unusual in terms of world events, with the COVID-19 pandemic significantly affecting everyday life from March 2020, through 2021 and into 2022. The end of 2021 and 2022 have seen a cost-of-living increases sparked during the pandemic that has now started to persist in many customers minds and affect perceptions and behaviours as a result. Furthermore, increasing global concern over climate change and the invasion of Ukraine by Russia create concerns for customers that were either absent or much lower priority during preparations for WRMP19.

The timeline in Figure 1 illustrates some key events since 2021 that summarise the context in which the research has been conducted during this time and therefore may have an impact on data responses as a result:

Figure 1: Key Events since Summer 2021



Golden threads

SSC's customer research has identified four 'golden threads' that occur consistently over time:

- The need for customer information and engagement
- Call for collective responsibility and fairness
- Concern for the environment
- Protection for vulnerable customers

These golden threads are part of all the literature reviewed and in many cases it is possible to see how the changeable context of the research conducted over the last 5 years has heightened or diminished some of these golden threads. In each of the sections in this report we draw out findings related to the golden threads and summarise the main points related to each.

4. BEST VALUE PLANNING AND INVESTMENT PRIORITIES

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
PR19 Foundation Research - June 2017	Foundation Research: Qualitative Findings – Full Report (Accent) – June 2017	May-June 2017	HH and NHH customers	70 HH, 23 NHH	To understand customer priorities for service delivery both now and over the longer term (prompted and unprompted). And to check these against previously established priorities in PR14 work.
WRMP Full Report - Oct 2017	WRMP and Long-Term Resilience Customer Engagement Insight – Full Report (Community Research) – September 2017	Autumn 2017	HH and SME customers	Workshops 62, business and stakeholder round tables 21, survey: 300 in SSW, 200 in CAM	To use the research findings from Phase One to support the development of SSC's WRMP19 in both supply regions, specifically understanding customers' views on; levels of service, leakage, water efficiency, metering, and (if possible) environment impact, and initial thoughts on options for the future. And to use the findings from Phase Two to inform investment choices, by giving customers the opportunity to feed into SSC's strategic challenges.
Appendix A07 - PR19 data triangulation study - SSW WRMP	PR19 data triangulation study - SSW WRMP	2017-2018	HH and SME customers and future customers	9000+	n/a
SSC Customer Priorities Desk Research Report - Aug 2020	Tracking Customer Priorities: Desk Review Report for SSC (Accent) – 8 September 2020	August 2020	Various	13 reports	Review current SSC understanding of its customers' priorities, as reported in SSC research outputs. Review methodologies for customer priorities measurement, including a review of research conducted by other water companies for PR19. Review Ofwat expectations for PR24, as set out in Ofwat's recent Time to Act strategy paper.
SSC Customer Priorities Tracker Qual Wave 1 Report - Oct 2020	Priorities Research: Qualitative Insights – Year 1 (Accent) – October 2020	October 2020	Customers	c60 in total	To understand customers' uninformed and informed priorities in the short and long term. To understand what factors drive any changes in priorities including whether there are any wider "Water Industry" trends. To understand whether there have been changes since Summer 2017 and what has driven those changes.
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions (Community Research) – August 2021	June-August 2021	HH (28), future (9) and SME (10) customers	47 Customers	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria. To ensure a "golden thread" of customer preferences in these strategic areas, which sets the

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
					context for the remainder of the engagement programme.
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 20 (CAM 5, Essex & Suffolk 5: Anglian 10). NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).
Quant Themes 1 and 3 Study - Mar 2022	SSC WRMP Themes 1 & 3: Managing Droughts, Leakage Ambition, Universal Metering, Environmental Ambition – Quantitative Insights (Accent) – April 2022	February to March 2022	1028 HH, 152 NHH	1180 in total, 753 in SSW and 427 in CAM	Core purpose of this study was to provide evidence of customer response and support for; managing droughts, universal metering, leakage, environmental ambition.
SSC Customer Priorities Tracker - Year 2 Quant - May 2022	Priorities Household Tracker Year 2 Quantitative Insights (Accent) – April 2022	March-22	701 SSW, 353 CAM HH Customers	1054	Provide a benchmark against which customers' priorities will be tracked for both wholesale and retail services. Explore any differences between uninformed/informed priorities and qualitative/ quantitative insights. Understand the customer impact of Covid-19 and, from 2022, the cost-of-living crisis.
Customer preferences on added value for large resource schemes – Literature review	Customer Preferences on added value for large resource schemes: Literature Review on Public Value of Infrastructure Investment (Accent) – April 2022	April-22	n/a	n/a	To understand what types of public value customers perceive are important and preferences among those types (and if preferences change depending on the geographical location/ type of scheme or other factors). To understand how much are customers prepared to pay. To understand what language should be used to explain public value.
SSC Customer Priorities Tracker - Qualitative wave 2 Research - May 2022	Priorities Research Qualitative Insights – Year 3 (Accent) – May 2022	May-22	Customers	27 current and future HH consumers and 7 NHH customers, 5 depths with 75+ and financially vulnerable, 5 depths with 50+ NHH customers	Explore what matters to customers now and in the future to root SSW/CAM plans in the customers' world. Understand what customers want and expect SSW/CAM to focus on in the short term and long term to 2050. Track and measure any changes in short- and long-term priorities and what is driving these changes.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
SRO Public Value - Draft report - July 2022	SRO Schemes Research: Combined Insights (Accent/PJM) – July 2022	Jul-22	HH, NHH, Future,	Qual: unknown Quant: 5902 HH, 533 NHH	To understand what added value customers perceive is important as part of infrastructure development. To understand preferences for the added value – what should be the balance between options such as economy, jobs, apprenticeships, leisure, education and carbon sequestration etc? Do the preferences change depending on the geographical location/type of scheme or other factors? How much are the customers prepared to pay? What language should be used to explain the added value?

Overview

The top three to five customer priorities have remained consistent across WRMP and broader customer priorities since those identified for WRMP19: quality and reliability of service, affordability and reducing leakage. Environmental concerns, customer service and support for vulnerable customers have also been top priorities; however, in the last year, although these are still important long-term priorities, they have slipped further down the rankings for customers, as significant concerns for their own personal financial circumstances have increased; customers feel nervous about prioritising others when the future seems uncertain for their own households or businesses.

Relative appeal/importance of overarching metrics driving 'best value'

During the engagement conducted for *PR19 and WRMP19*[2], customer priorities were focused on continuity and quality of supply and service, keeping bills affordable and reduction of wastage and leakage. This was found to be consistent across both the South Staffs and Cambridge regions.

Since the PR19 period commenced, further research into customer priorities has been conducted and showed that household and non-household customers including hard-to-reach and future bill-payers' priorities had a high degree of consistency across engagement mechanisms. Initially, the *2020 SSC Customer Priorities Desk Research Report* showed these priorities were divided into core priorities and future 'hygiene' factors that customers want to be delivered upon. These 'hygiene factors' included:

- high-quality and reliable **water supply**
- fair, accurate and affordable **bills**
- great **customer service**
- reducing **leakage** on pipes
- protecting the **natural environment** – habitats and water sources
- helping those customers who may need **extra support** – both through financial support and other support when needed.

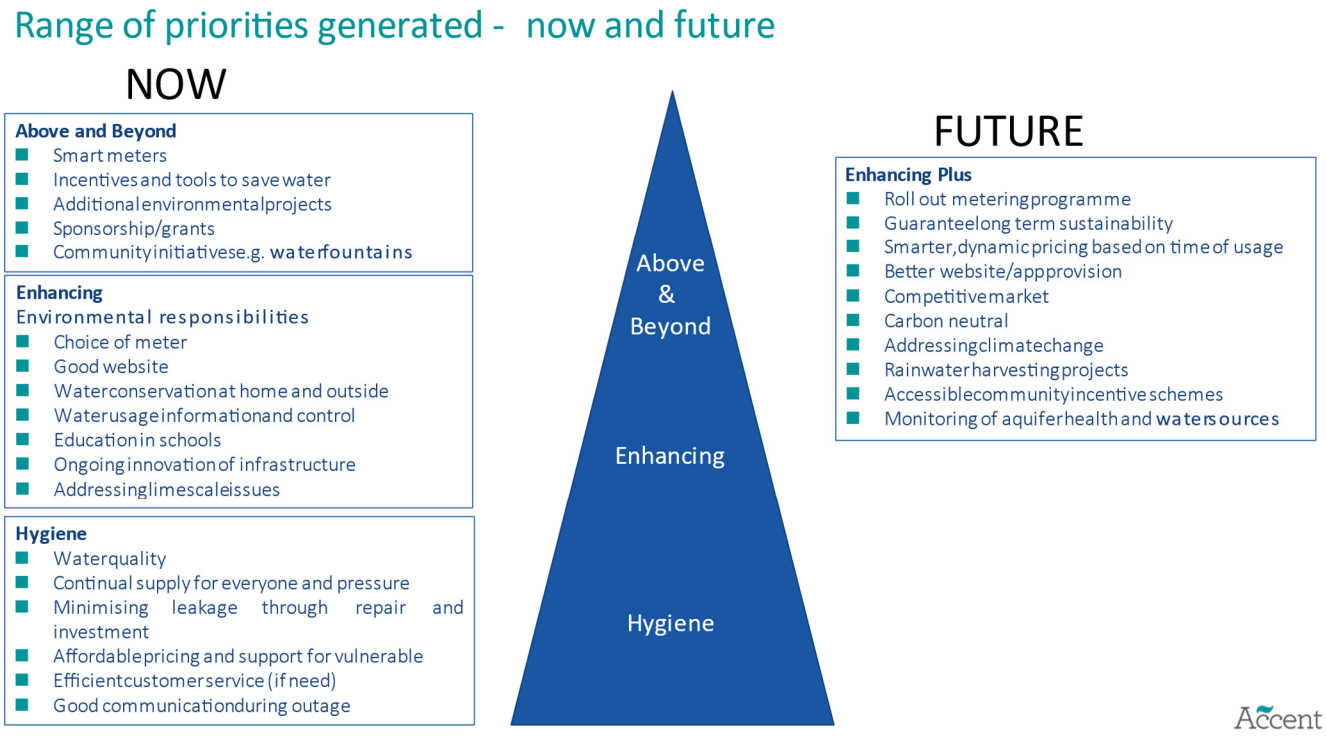
Future hygiene factors to be delivered to customers included:

- giving customers more **control** of their water usage (e.g. smart metering) and providing **education** on how to use water responsibly, particularly for the younger generation (16-25)
- planning for **population growth** and managing the impact of **climate change**
- ensuring **affordability of bills** vs ensuring long-term **resilience of assets** to meet future demand
- meeting the challenge of **rising energy costs** by lowering carbon footprint; and
- investing in **innovation** to drive improvements in operational and customer services.

[2] 2017 PR19 Foundation research and 2017 WRMP19 full report

The *2020 SSC Customer Priorities Tracker Wave 1* showed more granular detail on the factors customers expected to be delivered by three sub-groups; 'hygiene factors', 'enhancing factors' and 'above and beyond'. The hygiene factors were very similar to the earlier 2020 qualitative study, with the exception that this study showed environmental responsibilities to be an enhancing factor, rather than a hygiene factor. The full rankings are shown in Figure 2.

Figure 2: Range of priorities generated from 2020 SSC Customer Priorities Tracker Wave 1



In the *2021 SSC WRMP24 – WRAP study*, when asked to prioritise company actions at the end of the exercise, the provision of reliable, clean drinking water, minimising the environmental impact and reducing leakage were the top three in both supply areas. This was consistent with priorities identified in previous studies, including environmental concerns once again as a key priority and expected by customers.

The *Accent Quant Themes 1 and 3 Study - Mar 2022* delved into how SSC should balance various investment priorities and SSW customers overall slightly favoured keeping bills as low as possible for customers above all else. Cambridge customers as a population were more evenly split between keeping bills low and investment into other areas.

An *Accent literature review conducted in April 2022* highlighted the top three priorities for best value planning to be 'affordable water bills over the long term', making 'the most from what we have' (reducing leakage, encouraging customers to use less) and 'a plan that is adaptable in case of new/emerging conditions'. Adaptability emerged as a more important factor than in previous studies, likely in response to learnings from the Covid-19 pandemic that have affected every aspect of customers' lives and demonstrated the importance of anticipating unexpected events and building in flexibility to adapt when necessary.

By May 2022, the *SSC Customer Priorities Tracker Wave 2* identified the top four priorities as reliability and quality of water supply, bill affordability, leakage reduction and long-term planning, in line with the Wave 1 study. At this point in time the Covid-19 pandemic had peaked and started to recede in terms of its social and behavioural impacts. Indeed, two in five customers reported their water consumption had returned to pre-pandemic levels, though a similar proportion still thought they use more than before the pandemic (likely due to home working being more common). However, a cost-of-living crisis initially sparked during the pandemic has taken over public consciousness as a primary concern, with many feeling more financially vulnerable than ever before. Significantly higher numbers of customers in wave 2 reported concerns with paying their household bills when compared to year 1. This applied to both the present time and when thinking about the next 12 months.

The qualitative research conducted as part of the *SSC Customer priorities wave 2 research in May 2022* showed that 'optimism when moving out of pandemic was short lived and was replaced by significant cost of living concerns (for both HH and NHH customers). The generalised cost of living crisis made many people think more about their own situation compared with the

more altruistic qualitative picture in October 2020. The Environment was taken more seriously than ever in this study and understood better but has been pushed to a high priority longer-term issue and dwarfed by short term, personal economic concerns. High level response to SSC's "Looking to Future" plan to 2050 was very positive, mapping back spontaneous long-term priorities to this made customers feel SSC were covering the challenges raised and meeting future expectations. Most customers opted for what they see as a compromise of a linear, natural bill profile to 2050, with minorities supporting increased front-loaded short-term investment or back-loaded long-term investment. Customers expect more to be delivered as part of basic service compared to 2020.

What best value means to customers

The *WRE: Club Customer Engagement report by Blue Marble in September 2021* found that the principle of a 'best value plan' (not necessarily the cheapest, but the best for society and the environment) won majority approval. However, consumers wanted SSC to prioritise the core business activities (which included protection of the environment, managing flood risk and drought resilience) over the 'added value' elements (boosting the local economy, consulting customers and creating public amenities etc). However, it is noted that the terminology can be confusing to consumers as 'best value' in other contexts means the cheapest and they do not always equate the idea of best value plan as affecting customer bills directly. Customers in lower socio-economic groups (C2DEs) tended not to be aware that investment choices impact their water bills.

Options should meet three criteria: financially viable; low carbon; and effective in the long term. Options that appear short term stop gaps and/or poor environmentally, were largely rejected (including drought permits). Recycling water and (low carbon) desalination were the most acceptable of the 'new' supply options. Water transfer and tankering water in from other countries had least appeal.

SSC should develop a holistic approach to all aspects of water supply and waste management. Stakeholders wanted to see a joined-up approach, and this could help consumers appreciate what appear to be contradictions (higher awareness of flooding undermines the drought message).

In the *SRO Public Value report from July 2022*, which looked at public value going above and beyond core investments, it was found that across customers of all the water companies who were involved, social grades and life stage, there was limited/no prior understanding of the phrase 'Public Value'. At best, there was an assumption that it means a company would make a positive contribution (economic, social, environmental) to local and national society that would improve public well-being.

> *"I have never really come across the term public value. I would think of the term providing a product or service which will add value to the general public's life. These things will either provide happiness, stability or a necessity" Affinity Water, Future.*

At worst, there was confusion, disengagement and a sense that any company talking about 'Public Value' is 'CSR washing'. Water companies should be mindful about using the 'Public Value' phrase without detailed explanation. 'Added Value' is an easier phrase to understand and is seen as delivering 'Over and Above' the core project objectives.

Paying for long term investments

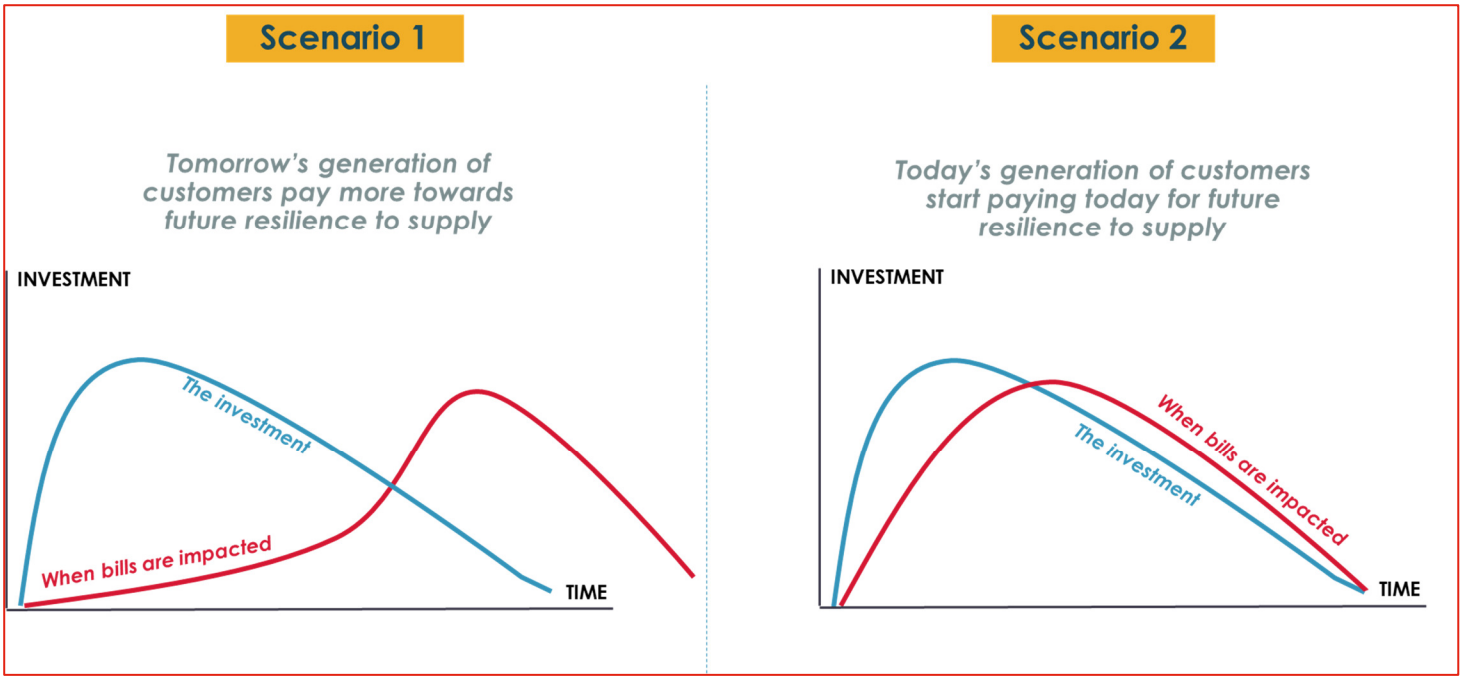
The issue of how to fund long term investments was first investigated in the *2021 SSC WRMP24 – WRAP study* which found that customers were generally happy to pay for investments that will benefit future generations. They recognised that they already benefit from contributions paid for by previous generations for the benefit of all. Making sure the environment is fit for future generations is the responsible thing to do, not least because current customers have contributed to the problems. Young current customers might actually benefit themselves in future. Future customers, like current customers, were mindful of and concerned about the potential bill impact from investment were no different from other customers in their views about intergenerational fairness.

> *"We have to take responsibility for the environment surrounding us and pay for whatever is necessary to protect it. We have to leave it in a better state than we encountered it, not leave huge bills for our children to pay. We also have to stop being selfish and only focus on keeping our current bills low."* Anna (billpayer)

The minority who opposed this view felt the cost should be borne by future customers as it is not fair for current customers to pay for something they will not benefit from.

The *WRE: Club Customer Engagement report by Blue Marble in September 2021* explored who customers felt long term investments should be funded, whether investment should commence earlier to spread the cost over a longer time or wait delayed until closer to the time the investment is required, which means the generation that benefit the most from investment, will pay more for it. Customers found it hard to decide which is the fairest solution to this ethical conundrum and there was no clear consensus. Customers were shown these two scenarios graphically, as shown in Figure 3.

Figure 3: Intergenerational Fairness Investment Scenarios



The bill increases appeared abrupt in both scenarios and there was a desire for a middle option with a flatter curve.

> *"I think what's fairer is if these humps on the graph could be flattened a bit, and the timescale elongated (...) that would be fairer because the rewards will be reaped for a considerable length of time so the increase in tariff should be spread over a longer period."* CW Non bill payer

Scenario 1 for many, felt unfair to be paying for something you are not using at that time and some older customers thought that they would die before they would see any benefit from their contribution. Economically vulnerable customers chose this scenario because they cannot currently afford a rise in bills, and some younger customers considered that they would be more financially stable and able to pay later on in life.

> *"I'd go for scenario one because it's hard to pay for something that you don't know is tangible, it's hard to see what you're being charged for without seeing the end product."* CW Non bill payer

For some, scenario 2 felt logical because customers pay for the investment whilst it is being made. Some older customers would rather pay instead of their children and grandchildren, even though they may not see the benefits themselves. ABC1s in particular pointed out that we have caused the problem of climate change rather than future generations and therefore should bear the cost.

> *"I think if we want improvements we are going to have to start paying for them now. I'm happy to start investing now as it feels urgent. It would be really unfair to pass onto our grandchildren the cock up we made."* E&S C2DE

The topic was not explored in great detail and insight here provides an indicative view only and therefore this would be an area for further investigation for PR24.

Golden Thread Conclusions: Best value planning and investment priorities

Golden Threads	**The need for customer information and engagement**	When fully informed of SSC's "Looking to Future" plan to 2050, customers are very positive, making them more confident that SSC were covering future challenges expectations
	Call for collective responsibility and fairness	Customers are generally more wary of what may be considered 'stop gap' or 'short term' measures to meet future demand for water, as these potentially offer less value in the long term. However, those on lower incomes will be more focussed on measures that keep bills affordable.

	Concern for the environment	The environment remains an important issue, especially due to growing awareness of the effects of climate change, but is seen as longer-term issue, dwarfed by short term, personal economic concerns.
	Protection for vulnerable customers	In the same way as concern for the environment, this remains important to customers but, from 2022, is slipping relative to more immediate concerns, such as affordability.
Emerging thread	**Cost of living**	The enduring theme is that since PR19, affordability of bills and wider concerns related to the cost of living are taking more prominence in customers' priorities.

5. ENVIRONMENTAL DESTINATION

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
WRMP Full Report - Oct 2017	WRMP and Long-Term Resilience Customer Engagement Insight – Full Report (Community Research) – September 2017	September 2017 (FW dates not given)	HH and SME customers	Workshops 62, business and stakeholder round tables 21, survey: 300 in SSW, 200 in CAM	To use the research findings from Phase One to support the development of SSC's WRMP19 in both supply regions, specifically understanding customers' views on; levels of service, leakage, water efficiency, metering, and (if possible) environment impact, and initial thoughts on options for the future. And to use the findings from Phase Two to inform investment choices, by giving customers the opportunity to feed into SSC's strategic challenges.
Appendix E - customer research findings summary - CAM WRMP	Appendix E Customer Research Findings Summary – Cambridge Water – Water Resources Management Plan: Appendices	2017-2018	HH and SME customers and future customers	7000+	n/a
Appendix A07 - PR19 data triangulation study - SSW WRMP	PR19 data triangulation study - SSW WRMP	2017-2018	HH and SME customers and future customers	9000+	n/a
Customer Priorities Infographic - July 2022	Customer Priorities – Now and in the future	2020/2021	HH and NHH customers	n/a	n/a
CCW Public views of the water environment report	Public views on the water environment July 2021	February 2021	62 participants (recruited to represent a broad range of current and future water customers)	62 current and future customers	The Consumer Council for Water (CCW) wished to conduct research into how people value and understand the water environment, their preferences for how it should be managed, and their views on current policy directions, taking account of the difference in policies between England and Wales.
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions (Community Research) – August 2021	June-Aug 2021	HH (28), future (9) and SME (10) customers	47 Customers	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria. To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 20 (CAM 5, Essex & Suffolk 5: Anglian 10) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).
South Staffs Water Stakeholder Roundtable feedback summary	Stakeholder Roundtable Feedback – South Staffs Water (Community Research) – October 2021	Oct-21	Attendees from councils, Citizens Advice, Natural England, Waterwise and consumer industry representatives.	8	To consider stakeholder views at a formative stage of the plan development process.
Cambridge Water Stakeholder Roundtable Full Report - October 2021	Stakeholder Roundtable Feedback – Cambridge Water (Community Research) – October 2021	Oct-21	Attendees from a wide range of organisations, including local environmental and river groups, national environmental organisations, a water retailer for businesses, a social housing provider, a local authority planning department, a university and an MP	18	To consider stakeholder views at a formative stage of the plan development process.
SSC H2Online Community Feedback - WRMP	H2Online – South Staffs Water and Cambridge Water: Summary of activities relevant to WRMP engagement (Explain) – November 2019 to March 2022	Nov 19- March 22	Panel responses vary over time CAM 360+ SSW 315+	Panel responses vary over time CAM 360+ SSW 315+	To build an engaged community of customers, going beyond gathering insight to establish and sustain two-way engagement. To ensure that the PR24 engagement programme delivers a further step-change in customer engagement.
Quant Themes 1 and 3 Study - Mar 2022	SSC WRMP Themes 1 & 3: Managing Droughts, Leakage Ambition, Universal Metering, Environmental Ambition – Quantitative Insights (Accent) – April 2022	Feb to March 2022	1028 HH, 152 NHH	1180 in total, 753 in SSW and 427 in CAM	Core purpose of this study was to provide evidence of customer response and support for; managing droughts, universal metering, leakage, environmental ambition.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses	Debrief Meeting Notes – Stakeholder Roundtable: Helping Businesses Save Water – March 2022	Mar-22	Attendees: Universities and local industry	6	To work with businesses in the Cambridge area to find out what can be done with retailers to further support, promote and implement water efficiency in NHH in the next 5 years and beyond (challenges, visions, opportunities).
SSC Customer Promises Tracking 2021 22 Annual Report	South Staffs and Cambridge Water Customer Tracking Research Report 2021/22 (Turquoise) – April 2022	Report dated April 2022 Rolling monthly interview programme	Household Non-Household	1,106 Total: HH: 814 NHH: 292	To monitor ongoing customer satisfaction against the key metrics that engagement has shown to be important to customers; these include hard and soft measures. To deliver on-going customer sentiment tracking against key brand statements. To probe awareness and usage of key services and track changes in the way customers wish to interact with SSC. To monitor and track the impact of Covid-19 pandemic on customers – new objective added in 2020/21.
Severn Trent environmental destination and compulsory metering	Report for Severn Trent Water – Environmental Ambition and Compulsory Metering: Quantitative Insights (Accent) – May 2022	May 22	HH (817) and NHH (183) customers. 490 metered, 434 unmetered customers.	1,000 interviews	To understand customer views and support on universal metering and environmental ambition.
SRO Public Value- July 2022	SRO Schemes Research: Combined Insights (Accent) – July 2022	Jul-22	HH, NHH, Future,	Qual: unknown Quant: 5902 HH, 533 NHH	To understand what added value customers perceive is important as part of infrastructure development. To understand preferences for the added value – what should be the balance between options such as economy, jobs, apprenticeships, leisure, education and carbon sequestration etc? Do the preferences change depending on the geographical location/type of scheme or other factors? How much are the customers prepared to pay? What language should be used to explain the added value?

Overview

As seen in the drivers of best value, environmental concerns are high on the agenda for most customers, having come to the forefront since engagement conducted for PR19 and WRMP19, usually featuring within the top five priorities for customers. Yet despite being a priority, customers were not willing to pay much towards achieving environmental goals and therefore, since 2020 when the pandemic initiated a rise in the cost-of-living, environmental concerns have slipped down the priority list for some, particularly during 2022, replaced by areas that serve personal interests more and protect the financial impacts on them as customers.

To illustrate this, 'environmental ambition' has slipped from most customers wanting SSC to achieve the top level (level 3 as recently as 2021) to more recently favouring a lower level of ambition (level 2 in 2022). (The levels shown to respondents are shown in Appendix 11.3.) Of course, those who value environmental factors highly still prioritise the environment (higher in the

Cambridge region, future customers), despite the cost-of-living impacts seen in 2021-2022. Additionally, the Cambridge region tends to place more value on environmental factors compared to South Staffs Water region, the environment has stayed higher up the priority list and Cambridge customers tend to be slightly more in favour of a faster timetable of delivery of their preferred level of environmental destination.

Long term challenges, customers' environmental priorities and expectations of water companies to act on these

In the *2017 WRMP full report*, the environment was not a top-of-mind concern for most customers, many of whom did not make a link between their water company's actions and the environment. Only when prompted to do so, avoiding negative environmental impact became more of a priority. However, *the WRMP19 customer research findings summary* the same year, showed there was already a shift in customer views emerging towards prioritising environmental performance more highly, and customers wanted SSC to go further to protect the natural environment and that the business plans need to reflect this. This need was highlighted by falling environmental performance customer perception scores. However, SSC and wider industry willingness to pay studies showed that many customers were not willing to pay significant amounts to protect habitats and rivers (compared to areas like leakage, reliability of supply and water quality). Customers were keen to see evidence of the impact that SSC's activities to protect and improve the natural environment had on their community; for example, it was not enough simply to measure the amount of land protected by SSC.

The *CCW Public views of the water environment report* from February 2021, found that water environmental issues were very much seen as part of the wider environment agenda. Following the provision of background information, when asked which water environment-related problems were of most concern, pollution elicited by far the most concern. Climate change, biodiversity loss and water shortages were also widely mentioned. Several factors affected participants' level of concern - how quickly problems might emerge, how easy they will be to reverse, how widely they might spread, and what actions are and could be taken. Again, they considered impacts on both people and the environment/wildlife. Participants tended to have very low levels of awareness of who has responsibility for managing the water environment. Participants from Wales seemed to be more aware of water companies' role in protecting the water environment as they were more likely to mention their water company's role unprompted, before being informed. When asked for their views on who should play a role in addressing issues, the broad consensus was that it was a collective responsibility with multiple actors needing to play their part. The response of Governments was felt to be crucial in terms of leadership and setting an overarching strategy, as well as in terms of regulation and enforcement. The majority of participants felt that water companies playing an active role was entirely appropriate - they have a vested interest; they have the means, resources and expertise and a direct relationship with consumers, so can influence behaviour. Future customers were less likely to suggest water companies should focus their strongest efforts on their core business or central remit. They were, conversely, almost universally likely to suggest that companies' strongest focus should be on the combined issues of global warming / climate change; and the decline or extinction of plant and animal life. By *2022, the Accent Quant Themes 1 and 3 Study* showed that whilst customers were still engaged with and concerned about the environment/climate change, there was evidence that the cost-of-living crisis is pushing environmental issues down customers' concerns list (water bills and poverty/inequality moved to 2nd and 3rd place respectively since the MCDA Quant survey in February 2022, see Figure 4).

Figure 4: Changes in concerns between early 2022 and late March 2022 from Accent Quant Themes 1 and 3 Study

Concerns – highest to lowest (Jan-early Feb 2022)

	MCDA study	
	Top 3 box	Mean
Future gas supplies and prices	59%	7.6
Covid-19 pandemic continuing	47%	7.2
Level of pollution - e.g. air, water	42%	6.7
Future water supplies and prices	41%	6.9
Reducing carbon emissions	36%	6.7
Poverty and inequality	35%	6.5
Unemployment levels	26%	6.0
Flooding	20%	5.1

Concerns – highest to lowest (late Feb – late Mar 2022)

	Theme 1&3	
	Top 3 box	Mean
Future gas supplies and prices	70% ▲	8.2
Future water supplies and prices	49% ▲	7.2
Poverty and inequality	41% ▲	6.7
Level of pollution - e.g. air, water	41%	6.8
Covid-19 pandemic continuing	38% ▼	6.4
Level of carbon emissions	35%	6.6
Unemployment levels	29%	6.1
Flooding	21%	5.2

▲▼ Sig higher or lower than last wave Jan-early Feb 22

Research conducted in *Severn Trent's supply area in 2022* showed that an overwhelming majority of customers agreed that it was important for Severn Trent Water (STW) to consider affordability, climate uncertainty and working with abstractors (the latter not mentioned as a priority in SSC's research to date). When asked spontaneously, more customers supported STW investing to the legal minimum with regards to the environment, compared with 38% who support STW investing extensively now to protect the water environment. Once informed, more customers supported STW investing extensively now to protect

the water environment compared to those who support investing to the legal minimum (45% compared to 42%), reflecting the importance of education for gaining customer buy-in to investing in the environment from the outset.

Attitudes and views regarding the natural environment and SSC's approach to planning

During the research from 2020-21 summarised in the *Customer Priorities Infographic* (included in the Appendix), customers stated that essential service levels should include addressing the impact of climate change, including planning long term to meet future demands, to make sure water always comes out of customers' taps. An enhanced level of service would include running a sustainable business e.g. carbon neutral ambitions, removing single-use plastics from business operations and investing in projects that help to protect the environment.

Many participants in the *CCW Public views of the water environment report* were comfortable in principle with the public paying for improvements to the water environment. They saw benefits in terms of the environment, society and future generations. They also acknowledged that it is acceptable and fair because the public would benefit and have also contributed to the problems. However, a substantial minority disagreed, arguing that polluters should pay, beneficiaries should pay, or water companies should pay from profits. There was some debate on the best way to pay for environmental improvements and the suggestion that a combination of approaches (e.g., tax, water bills, charitable donations) would work best – mainly because each approach had different strengths and weaknesses. Overall, there was widespread support for paying for environmental improvements through water bills. However, there were several caveats, limits and assurances that would make them feel more comfortable about this approach relating to the amount charged (ensuring affordability and keeping increases reasonable) and how the money is spent (money being ring-fenced, activity being monitored and there being evidence of a positive outcome).

Generally, participants accepted paying more for environmental improvements (however, it should be noted, that whilst hypothetical bill increase amounts were deliberately not given, some participants assumed that any increases would be fairly small). They also believed that such increases need to be fair. In particular, the need for the polluter to pay was mentioned repeatedly. Views differed about whether water bill-payers should pay for improvements related to all environmental issues or only some of them. Almost all future customers (who are not yet paying bills themselves) were in favour of paying for action on all environmental issues.

There was no clear separation between participants' thinking as citizens versus their thinking as bill-payers. There was a spectrum of views between 'strongly citizen' and 'strongly customer'. Whilst some were more firmly concerned about the customer and bill-payer perspective throughout; many saw both perspectives at different stages in the process and some took a more firmly citizen approach throughout. Many participants showed signs of thinking in both ways. From early in the forum, it was clear that the water environment spontaneously inspired 'citizen thinking'. It was seen as a valuable resource shared and enjoyed by many now and to be preserved for future generations.

Participants said that the process of deliberative engagement had moved them from the potential to focus on personal financial impact (customer viewpoint) towards support for collective and societal responsibilities (citizen viewpoint).

Knowledge gleaned over the course of the project changed people's perspectives and supported the citizen perspective. Knowing about the issues and water companies' actions had multiple impacts, it; emphasised the citizen perspective – seeing the water environment as a collective responsibility, with some even vowing to volunteer and help with solutions; but it also made water bills more justifiable (giving bill-payers understanding of what is delivered, beyond the delivery of tap water and removal of sewage).

With regards to SSC's planning, one stakeholder from an environmental organisation, (engaged with at the *South Staffs Water Stakeholder Roundtable*), pointed out that there is no need to choose between water quality, biodiversity value, and recreational value. This is because improving one tends to improve the others e.g. as shown when improving rivers to meet designated 'bathing river' criteria.

The *SSC Round table on Water efficiency in Businesses* highlighted more areas where non-household customers and stakeholders felt SSC could support businesses and expedite achieving Net Zero by 2050. Firstly, water should be included in Net Zero strategy. There was a recognition that the corporate strategy for zero carbon targets needs to better tie in water and embed sustainability decision making into the organisation, such as internal carbon pricing to drive investment decision making, costs and managing risks. There was also a suggestion to align new strategies to UN sustainability goals and have carbon ambition targets, as well as biodiversity actions plans in place with direct links to water quality and consumption. The importance of working together was emphasised and one non-household customer quoted 'sustainability is a puzzle' and that it relies on a range of partnerships to really achieve Net Zero, so reliance on suppliers and the value chain to deliver true Net Zero will be required. Opportunities for innovation in the agricultural sector to reduce water dependence were discussed, by reducing water usage and power generation with the use of artificial intelligence in terms of energy management (targets, benchmarks). Machine learning can help identify patterns in use and recommend solutions. A holistic view is important, but more systems thinking is needed about how water is managed to understand where water is coming from and how it is being used. Finally, it was discussed that we might see more regulation around water usage to change the way water is valued, to incentivise change

in behaviour usage. Also increasing energy/fuel costs may push the distribution model to be more regionalised around storage and transportation.

The *Strategic Resource Options Public Value Report from July 2022* showed that environmental project additions were mainly valued more highly than social and economic ones. Public Value in water infrastructure projects was well supported but not unconditional.

> *"I feel a lot of those environmental ones go in the top corner – there's a lot of construction with projects so there will be a negative impact. You should offset and add back – not just plant some trees" Cambridge Water, Future Customer*

Public Value additions in water infrastructure were not universal; there were a number of project additions that transcend projects, but customers expect different project additions/benefits according to core project needs. Economic additions and Environmental additions were felt to transcend all infrastructure projects (reservoir, canal, water treatment works and underground pipelines). There was a high emotional resonance with these additions and the narrative of supporting wildlife/new wetlands/habitats chimes with customers across water companies. The top-three most highly valued environmental project additions by households were 'Specialist habitats created for wildlife' (£3.87 annually, on average), 'New wetland area' (£3.24 annually, on average), 'Space provided for sustainable agriculture' (£2.61 annually, on average). Future customers had strong engagement with the environment; they took a longer-term view and were keen to see environmental additions. Social project additions generally tended to have lower importance than economic or environmental additions.

> *"It's not about education in terms of learning but education in terms of experiencing and respecting and understanding"* Cambridge Water, HH, ABC1

Key economic additions (such as apprenticeships and boosting local employment) were felt to have strong persuasive impact and positive impact on brand reputation. Non-household customers had personal experience of economic additions e.g. aware of difficulties with apprenticeship schemes.

Public value in the water space was expected to fulfil five specific criteria; local community centric; long term justifiable value; sustainable; water relevant and low maintenance. In the quantitative work, overall, project additions at water treatment works were valued most highly, followed by reservoirs, canals, and pipelines. This could be due to reservoirs/canals being naturally more positive/ pleasant. Qualitatively, people felt that the social project additions at water treatment works would be less valuable as they would be unlikely to want to visit but environmental and economic benefits were supported.

Environmental stewardship and level of ambition

The *SSC Customer Promises Tracking 2021-22* found that 41% of household customers agreed that SSC are environmentally focused and do a good job at helping to protect the environment in the areas they take water from. This was significantly higher in the South Staffs region (45%) than Cambridge (31%)

The *SSC WRMP24 - WRAP Theme 1 research findings 2021* showed that customers felt water companies have a central role in caring for water environment, but everyone else has a role to play too. Customers preferred an ambitious target with regards to the environment (level three, the highest level, which includes greater collaboration for planning; ecological surveys to support decision making; reviewing supply options to compensate for taking less water from rivers and streams). In spite of this being the most expensive option, it was considered worth it to ensure supplies are maintained and to protect environment. This was particularly the case in the Cambridge region where there was more detailed knowledge about water environment problems and more support for ambitious targets (level 3) compared to South Staffs.

At the Cambridge Water Stakeholder Roundtable October 2021, stakeholders argued strongly that Cambridge Water should aim for the highest level of ambition and aim to achieve it as quickly as possible. There was less agreement on where to focus, with arguments for focusing on areas of unique significance and the wide water environment, people and nature. There was a need to overcome barriers such as affordability, customer acceptability and regulatory framework, but that these cannot be allowed to hamper progress. For these stakeholders, environmental impact was by far the most important criterion for choosing between supply and demand options and cost was much less of a consideration. It was suggested that customers should simply absorb the cost, with measures put in place to protect customers in financial difficulty.

One stakeholder engaged via the *South Staffs Water Stakeholder Roundtable October 2021* said that their organisation would strongly support South Staffs Water working towards level three, i.e. the most ambitious level, to help cope with the challenges of climate change.

The *CCW Public views of the water environment report* revealed that participants expected those who negatively impact on the water environment (for example farmers, developers as well as individual consumers) should have a significant responsibility; in addition to individual consumers. Action by the latter was felt to be constrained by consumers not knowing what to do and perceptions that individual actions do not make much difference. Participants spontaneously discussed how action to tackle water environment issues might be stimulated. Most focussed on a 'carrot and stick' approach i.e., stringent fines when rules are broken and incentives to encourage positive behaviour change. The call for fines and incentives applied at individual, organisational and community levels, for example fines for individuals who litter as well as fines for companies or farmers who

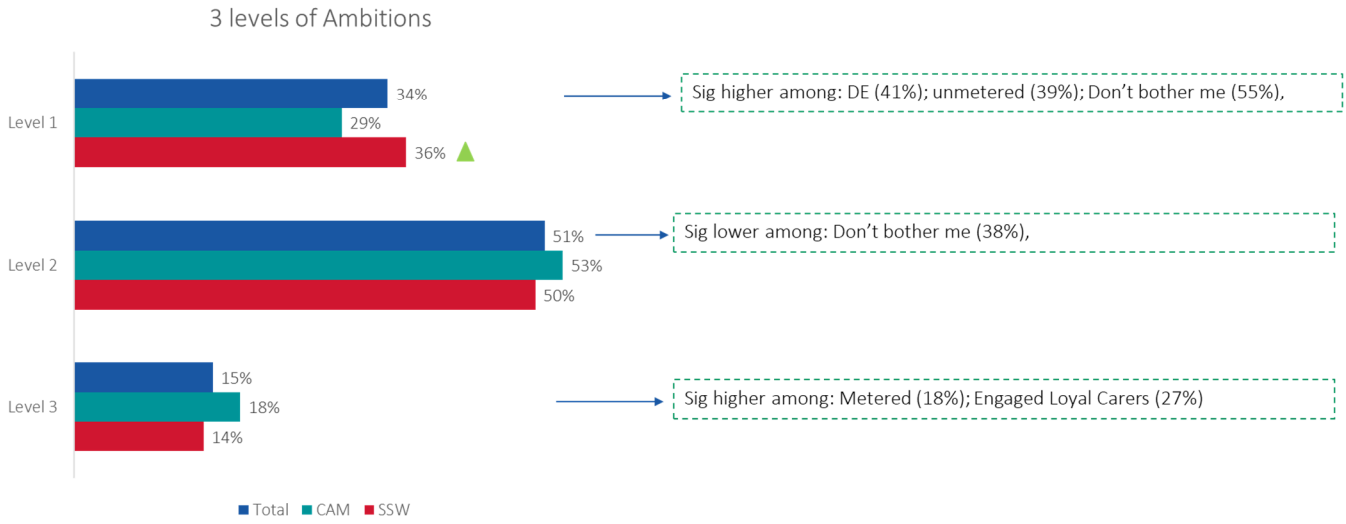
pollute waterways. Participants were provided with information about the actions that water companies can take on the environment in the form of an animation, which provided examples and described three possible levels of action that water companies might undertake in relation to different issues. For all of the stated issues, the desire expressed by the majority of participants was for water companies to go 'beyond the basics' of meeting the minimum legal requirements. This was particularly strongly expressed in relation to both the decline or extinction of plant and animal life and global warming / climate change, where half or (in the case of extinction of plant or animal life) over half, wanted water companies to go to the highest possible level.

During the *SSC H2Online Community Feedback gathered in late 2021* 67% of South Staffs Water and 75% of Cambridge Water members said that legally binding biodiversity targets were important. A further 25% of SSW and 15% of CAM members indicated that they felt that targets were important, but that they should not be legally binding. Only one respondent (out of 44) indicated that they did not think targets should be set by the Government in relation to biodiversity.

In 2022, the *Accent Quant Themes 1 and 3 Study* provided information to customers (see Appendix, 11.3) and found most support for level 2, rather than level 3 as seen in earlier research; the water environment stays as protected as it is now, but South Staffs/Cambridge Water also prioritises some of these to protect and improve them:

Figure55: Allocations of Levels of Ambition from Accent Quant Themes 1 and 3 Study

Levels of ambition:
Around half of customers opted for level 2, and about a third chose level 1. Significant more customers in SSW chose level 1 when compared to CAM. No sig differences between HH and NHH



Q52. There are broadly three levels of environmental ambition that could go into SSW/ CAM plans. Which option would you prefer SSW/CAM to implement: (n= 1,180, CAM: 293, SSW: 887)

Sig higher or lower than at least one attribute in the same category

By selecting level 2, customers prefer a balance between protecting the environment and the cost to them personally. This is showing the pressures created by the cost-of-living crisis are starting to change customer priorities and ambitions, with environmental concerns taking the brunt of the changes in the short-term. Those who supported Level 3 were significantly more likely to be environmentally engaged/concerned as found in previous work and for them the priorities are relatively unchanged. Those who support Level 1 are generally environmentally supportive but are concerned about the impact of the cost-of-living crisis and uncertainty around household bills which takes priority.

Time period for improvements to be funded

When asked in the *SSC WRMP24 - WRAP Theme 1 research findings 2021*, there was no clear preference for a timetable to deliver the preferred level of environmental destination, but 20 years seemed a reasonable compromise for most, although Cambridge gave slightly more support for a faster timetable than the South Staffs region.

The *Cambridge Water Stakeholder Roundtable Full Report - October 2021* were clear that changes need to be made as a matter of urgency. The consensus was that there is an urgent need to take action before it is too late. They mentioned, for instance, that some local streams had been dry for a couple of years and local councils already recognise both climate and biodiversity emergencies. One stakeholder pointed out that on climate change "we've got 10 years left" to avert the worst effects, and because the next WRMP covers 2025- 2030, it must include ambitious steps to address climate change. One stakeholder argued

that Cambridge Water should make the most of current opportunities by producing an ambitious WRMP. They noted several current opportunities that mean that this WRMP "could be a huge step change": the Government's stated focus on the environment; the new national strategy for chalk streams; the current interest in integrated water management (i.e. the integration of water resource management and flood risk management); and the well-organised national and regional approach to water resource planning. Another stakeholder felt that Cambridge Water had "dragged their feet" compared to Affinity and Anglian Water so now "needed to up their game".

In 2022, the *Accent Quant Themes 1 and 3 Study* concluded that 46% of SSW customers support the 2050 deadline for reaching their preferred environmental destination (level 2 for most). (Stimulus materials shown to respondents in this study is included in the Appendix). CAM customers who are known to be slightly more supportive on environmental priorities, were split between those supporting the proposed timeline (42%) and those who believe it is too late (38%), echoing the results seen in the earlier SSC WRMP24 - WRAP Theme 1 research findings.

Impact of abstracting water on the water environment

Consumers in the *WRE: Club Customer Engagement report by Blue Marble in September 2021* had no awareness of previous levels of abstraction causing environmental damage but wanted to see rivers recover. The majority of customers said they were willing to pay for environmental improvements, however, there was clear message that it should not be at any price.

Golden Threads: Environmental destination

Golden Threads	**The need for customer information and engagement**	Customer support for environmental programmes is reflective of their understanding of what SCC is doing and the benefits that result. For example, the strong level of support for the new reservoir among Cambridge partly reflects the perceived benefits of relying less on environmentally impactful measures such as abstraction from underground aquifers that feed chalk streams.
	Call for collective responsibility and fairness	Customers are looking for more of a balance between the costs of protecting the environment and keeping their personal financial burden to acceptable levels.
	Concern for the environment	While environmental concerns remain high on the agenda for most customers, they are not willing to pay as much towards achieving environmental goals as other areas of the core service, where needs are felt to be more immediate. With the steady rise of concerns related to the cost-of-living, environmental concerns have inevitably slipped down the priority list for some, replaced by areas that serve personal interests more and protect them from the financial impacts.
	Protection for vulnerable customers	There were no topics relating to vulnerable customers in the context of concern for the environment
Emerging thread	**Cost of living**	The lower short-term priority of environmental ambition among customers reflects the growing emergence of the cost-of-living crisis.

6. SERVICE LEVEL RESILIENCE TO DROUGHT

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
PR19 Foundation Research - Full Report - June 2017	Foundation Report – Qualitative Findings: Full Report (Accent) – June 2017	May-June 2017	HH and NHH customers	70 HH, 23 NHH	To understand customer priorities for service delivery both now and over the longer term (prompted and unprompted). And to check these against previously established priorities in PR14 work.
WRMP Full Report - Oct 2017	WRMP and Long-Term Resilience Customer Engagement Insight – Full Report (Community Research) – September 2017	September 2017 (FW dates not given)	HH and SME customers	Workshops 62, business and stakeholder round tables 21, survey: 300 in SSW, 200 in CAM	To use the research findings from Phase One to support the development of SSC's WRMP in both regions, specifically understanding customers' views on; levels of service, leakage, water efficiency, metering, and (if possible) environment impact, and initial thoughts on options for the future. And to use the findings from Phase Two to inform investment choices, by giving customers the opportunity to feed into SSC's strategic challenges.
Appendix E - customer research findings summary - CAM WRMP	Appendix E Customer Research Findings Summary – Cambridge Water – Water Resources Management Plan: Appendices	2017-2018	HH and SME customers and future customers	7000+	n/a
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions (Community Research) – August 2021	June-Aug 2021	HH (28), future (9) and SME (10) customers	47 Customers	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria. To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 20 (CAM 5, Essex & Suffolk 5: Anglian 10) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
					To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).
Severn Trent WRMP24	Severn Trent Water – WRMP24 Report (DJS Research) – May 2022	November 2021-February 2022	HH and NHH customers	624 HH, 149 NHH	Measure customers' preferences for water resources, levels of service and the options or plans that Severn Trent might create to address any changes to levels in service or to address a supply-demand deficit. To develop a Best Value Plan in line with Water Resource Planning guidelines.
Quant Themes 1 and 3 Study - Mar 2022	SSC WRMP Themes 1 & 3: Managing Droughts, Leakage Ambition, Universal Metering, Environmental Ambition – Quantitative Insights (Accent) – April 2022	February to March 2022	1028 HH, 152 NHH	1180 in total, 753 in SSW and 427 in CAM	Core purpose of this study was to provide evidence of customer response and support for; managing droughts, universal metering, leakage, environmental ambition.
Hafren Dyfrdwy WRMP Customer Research	Hafren Dyfrdwy Water Resources Management Planning: Customer Research Debrief (Blue Marble) – June 2022	April and May 2022	4 future customers, 20 HH customers, 6 NHH customers, 5 digitally excluded customers.	35	To understand HD customers' views of the initial WRMP proposals. Specifically, to gauge; response to proposed use of water restrictions, response to proposed ways to reduce demand, response to proposed use smart meters, response to plans to meet the new leakage targets, response to plans to use water transfers, and response to plans to support private supply households.
WRW 2022 updated regional plan customer research	Water Resources West Regional Plan Customer Research (Shed Research Consulting) – June 2022	June- 2022	N/a	n/a	To ensure the customer input in the regional plan is up-to-date by including the latest knowledge (by conducting a triangulation of the most recent customer and stakeholder research).

Overview

The majority of customers are in favour of current resilience plans, service levels, targets and timelines associated with these, and usage of TUBs and NEUBs; in fact, multiple studies show customers would be willing to accept more frequent drought interventions or lower service levels than they experience at present. Business customers seemed more mixed in their views

than household customers, perhaps this is because they see their usage as "essential" where others might define it as non-essential.

Customers were unwilling to accept the most severe water use restrictions (drawing water from a standpipe/rota cuts) and therefore these scenarios should be avoided, except in the case of extreme emergencies.

Speed at which customers want to move from 1:200 to a target of 1:500 resilience with regards to emergency drought restrictions

The *SSC WRMP24 - WRAP Theme 1 research* discussed the resilience targets and found that the Environment Agency 1:500 year emergency drought target was widely supported, but there were mixed views on speed of delivering this. This was a complex area for customers to understand and comment on, perhaps leading to the conflicting views; some suggested the ambition is unrealistic given climate change that is already happening; a couple thought that the longer time frame is important to spread out the cost; a small number thought that 2040 is too long to wait for change; some believed it will be difficult to bring companies together so think the timeline is slow but realistic; and lastly some believed that the companies will fail to achieve the target unless they also invest in educating customers.

In Severn Trent's region, the *Severn Trent WRMP24 Draft Report* found that at present, the risk of an extreme drought that might involve such things as mobile water tanks having to be deployed is at 1 in 200 years and Severn Trent will be following the Environment Agency's regulatory requirement for all water companies to get to 1 in 500 by 2039. Three quarters of both households and non-households (both 75%) stated they would find this timescale acceptable.

Drivers of customer support for the level of resilience in the plan

Although most of the literature reviewed seems to support current resilience plans (or even tougher restrictions), not much has been explored in terms of the reasons why this might be. The *Blue Marble WRE Club research from September 2021* found that drought resilience should focus first on making the most of what water there is, before increasing supply through new options. Demand-side options were favoured above new supply options, with leakage the number one issue that water companies should address (unaware that customers have a part to play here too). Other options involving customer behaviour change and universal metering were secondary. Businesses, always with an eye on cost, were interested in recycling their water and want water companies to prioritise this.

Another study, the *Accent Quant Themes 1 and 3 Study from March 2022*, found that around three quarters of customers support the use of more frequent TUBs/NEUBs, particularly during long periods of dry weather when around 50% support their use every time, which is driven by customers having environmental concerns and wanting to ensure long term resilience. There was also hope that it might discourage those who use a lot of water for non-essential purposes from doing so.

Planning balances for resilience and trade-offs customers would accept

The *PR19 Foundation Research from June 2017* showed that customers expect innovation from SSC to help reduce wastage, monitor usage and ensure resilience of the network in the face of population growth, climate change and energy challenges. This was reinforced in the WRMP19 Full Report later the same year, which showed avoiding restrictions is not a priority and that levels of service could potentially be reduced, and few would worry if this were the case. Although the Customer research findings summary - CAM WRMP for 2017-18 again stated that a reduction in service could be considered, this report was more cautious, highlighting that as many customers cannot recall experiencing the most recent temporary ban, there was no sure way to know how this would impact on their overall satisfaction levels if they were to experience one. Maintaining the current service levels was therefore recommended. There was no evidence from the group of business customers from the same study, that the 1 in 50-year service level commitment should be changed. The WTP study also backed this up with business customers giving temporary bans a relatively low valuation. However, there was a clear call for businesses to receive more detailed information about what water usage is restricted during a NEUB, if the need ever arises.

The *WRE: Club Customer Engagement report from September 2021* asked customers to trade off two resilience scenarios. The first being using drought permits more versus investing in new infrastructure such as desalination plants, new reservoirs and water recycling treatment. Overall, customers found this a difficult decision, but investment in new infrastructure is the more popular option. Most felt new initiatives provided a long-term strategy for water resilience, whereas at present drought permits are being used but there is still a risk of water shortage and therefore it did not feel like a long-term solution. Bill increases were a concern, however many felt that the need to invest is inevitable and it would be better to do so now, than continue damaging rivers until they run dry. For some the risk to the water supply did not feel so bad as to warrant building new infrastructure, particularly given the high associated financial and environmental costs of some of the associated options – desalination in particular. They would prefer to carry on using drought permits to avoid even greater damage to the environment from the new

measures. However, the possibility of using renewable energy largely dispels negativity over the environmental impacts of the new infrastructure.

The second trade off captured was investing sooner or later, to avoid supply restrictions before 2039, and on this point opinion was divided across the sample, with no clear consensus on the best option. Many felt that if new infrastructure will be needed at some point, it would make sense just to 'get it done', although this thought process is divorced from the actual benefits of a shorter timescale. However, for many the amount of time saved did not feel significant, and preference is based on the associated supply options rather than the pros and cons of the different timescale. For example, some chose 'Sooner' because it doesn't involve the drought permits they had rejected in the previous trade-off. Some younger customers believed that better technology may exist in the future which would increase supply with fewer impacts on the environment. Customer sentiment around this issue is less about avoiding supply restrictions and more about feeling that the long-term water supply is being safeguarded, as that is their bigger concern.

Acceptable levels of resilience expected from SSC willingness to pay for any improvements

Temporary use bans (TUBSs) – household

The *SSC WRMP24 - WRAP Theme 1* research findings showed that Level 1 (information) & 2 Temporary Use Bans (TUBs) restrictions were acceptable and justified for most, although there were a slightly higher number of objections to more frequent restrictions in SSW even though the majority were still in favour. Those on the PSR were less willing to accept lower service and were more likely to voice issues and concerns with restrictions because of the impact on them personally. There was a slight preference for TUB restrictions to be done via a rota in SSW, whilst in Cambridgeshire customers were more likely to be in favour in principle but identified issues including about how they would be policed, potential confusion about the rules and whether it is too drastic a solution.

In March 2022, the *Accent Quant Themes 1 and 3 Study* found that without any prior education on the topic, around three quarters of customers support the use of more frequent TUBs/NEUBs, with around 50% supporting their use every time there is a long period of dry weather. This is driven by customers having environmental concerns and wanting to ensure long term resilience. Three propositions were tested for reducing customer demand for water and the highest level of support was for the use of TUBs/NEUBs every summer where the amount of rainfall is well below average (62% supported). Although it received the lowest level of support, 43% of customers support the use of TUBs/NEUBs every summer, mainly to discourage heavy users of water.

Most recently, the *WRW 2022 updated regional plan customer research report* showed that customers support the need for TUBs and NEUBs; they are the most popular way to reduce demand during the summer months (e.g. versus higher charges for the highest consumers). Most customers expect more frequent restrictions than the existing TUB and NEUB service levels.

This sentiment is echoed in Hafren Dyfrdwy's region, as the *Hafren Dyfrdwy WRMP Customer Research Debrief from May 2022* found that customers and future customers support their proposed level of risk of drought restrictions: many would accept more frequent restrictions. The majority supported the proposal for managing risk of drought restrictions based on a 1 in 40 year likelihood and/or would not mind a more frequent likelihood of restrictions. All respondents were asked about non-essential usage bans, the risk was clearly acceptable; most believed a 100-year frequency is a reasonable risk and many were relaxed about the frequency increasing.

In Severn Trent's region, the *Severn Trent WRMP24 Draft Report in late 2021/early 20222*, found that overall, household customers were most likely to recall restrictions on water usage (such as hose pipe bans) with 59% experiencing this issue at some point (compared to 41% who have never experienced this issue). A half of household customers have also experienced interruptions to their supply, with 30% recalling that this happened within the last three years.

Non-essential use bans (NEUBs) – non household

The *SSC WRMP24 - WRAP Theme 1* research findings found that SMEs were more likely to raise concerns about restrictions than other groups, given their experiences over lockdown.

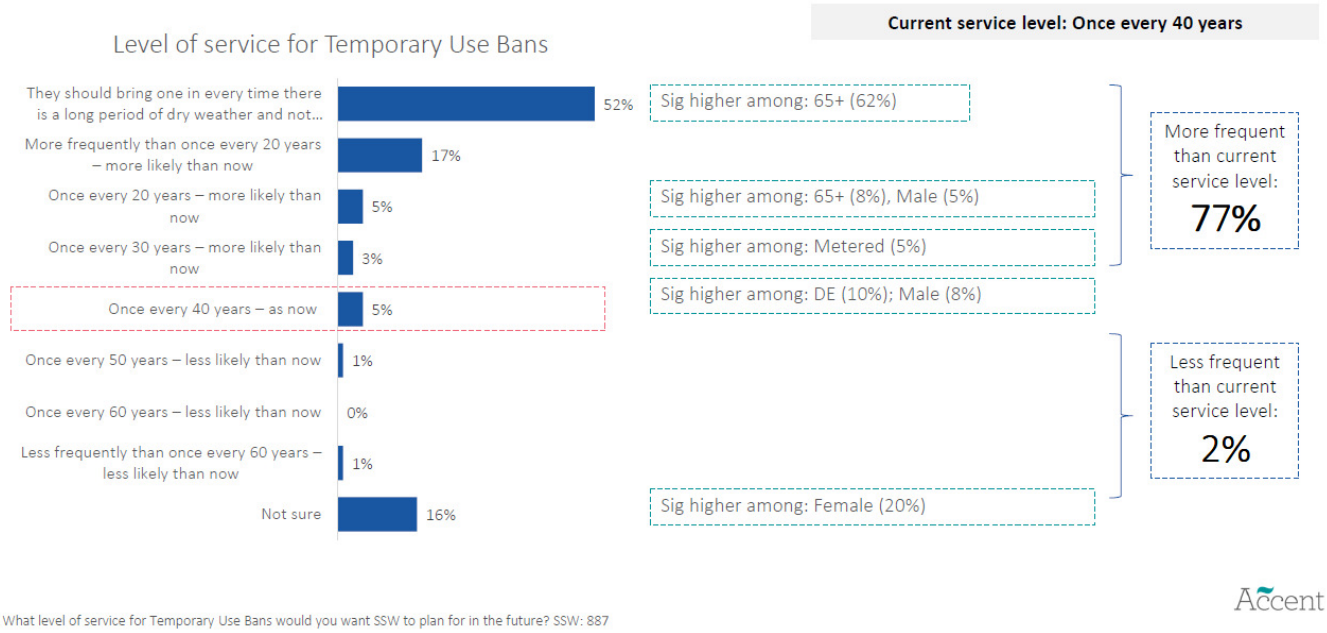
In the *Hafren Dyfrdwy WRMP Customer Research Debrief from May 2022* businesses (who would be affected by non-essential usage bans) had mixed views on non-essential usage bans and the frequency of any restrictions.

Drought restrictions such as standpipes, rota-cuts

In terms of severe restrictions, the *Customer research findings summary - CAM WRMP for 2017-18* showed that having to draw water from standpipes in the street (or any other severe restrictions of the supply) is not a scenario that customers are willing to accept.

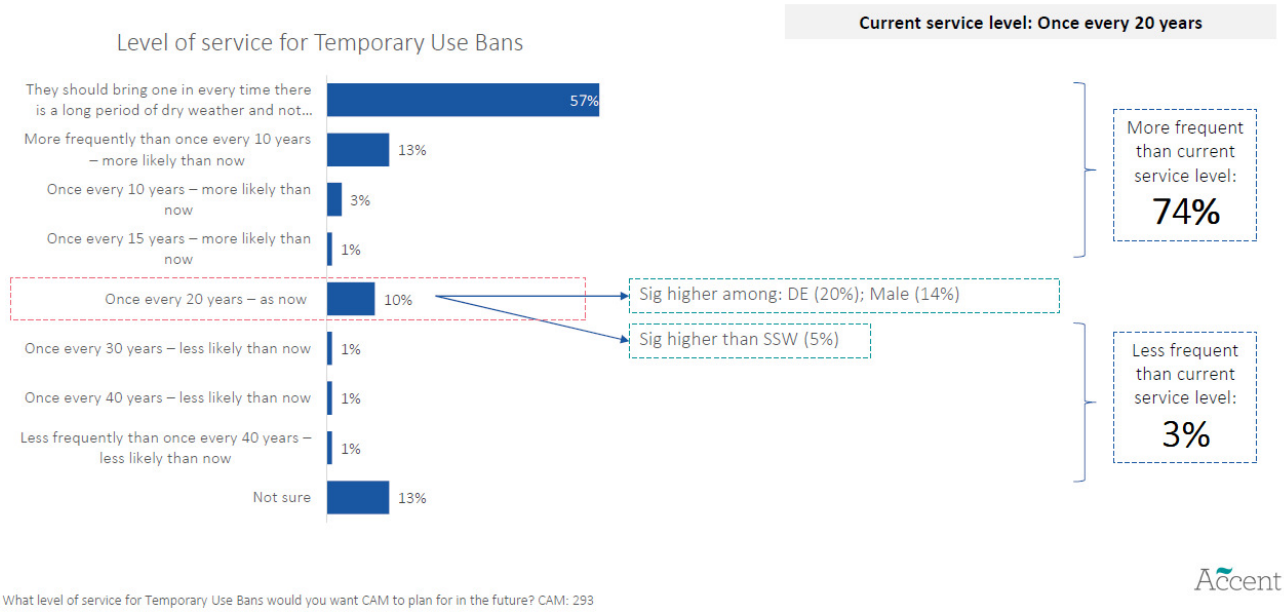
The *Accent Quant Themes 1 and 3 study from March 2022* showed that 52% of customers find the current level of risk of drought restrictions to be acceptable (49% in the SSW region compared with 57% in Cambridgeshire – See Figures 6 and 7Figure 6: Managing Droughts South Staffs Water Household Customers). Respondents over 65, those on a meter and males in the SSW region were more likely to look for more frequent TUBs than at present. In Cambridgeshire there were fewer demographic differences, except that the lowest social grades and males were more likely to suggest TUBs should remain as frequently as now, and this was higher than in the SSW region overall.

Figure 6: Managing Droughts South Staffs Water Household Customers



Q32. What level of service for Temporary Use Bans would you want SSW to plan for in the future? SSW: 887

Figure 7: Managing Droughts Cambridgeshire Water Household Customers



Q32. What level of service for Temporary Use Bans would you want CAM to plan for in the future? CAM: 293

Once informed on the topic, broadly the same proportion (54%) supported reducing the risk to once every 500 years by 2040, from once in every 200 years. One in three would like to this target achieved earlier than 2040. Around half (54%) supported

the target reducing the need for rota cuts and standpipes to be used to no more than once in every 500 years on average by 2040. This was significantly higher among those on the Priority Services Register (69%). .

The *WRW 2022 updated regional plan customer research report* found that current restrictions and EA targets are seen as acceptable and when informed of issues, around half of all customers supported reducing risk to 1 in 500 years by 2040, three in ten would like this even sooner than 2040. However, this view is not informed by customer experience, and it is possible that if restrictions such as these were brought in customer experience may not be as positive therefore any changes to increasing frequency of TUBs or NEUBs should be undertaken with caution and public perceptions carefully monitored.

Changes to customers' views on service levels since 2017

In 2017, all the evidence pointed towards customers being happy to accept lower service levels and by 2021 the picture was very similar in that the *SSC WRMP24 - WRAP Theme 1* research findings showed that most expected more frequent restrictions than current service levels. Even in the most recent research, in spite of the cost-of-living crisis, acceptability of current service levels is very high and evidence suggests customers would be willing to accept an increased frequency of NEUBs. There was broad support for TUB rotas, especially in SSW. This would allow for planning and better than an outright ban, but there was some concern about how these would be policed, potential confusion about the rules and whether it is too drastic a solution. Annual TUBs were rejected by most, and mixed views on TUBs in hot summers as these are likely to become more frequent in future.

Support for harmonisation of the service levels across companies in the same regional area (WRE/WRW)

Very little has been explored on this specific question, however the *WRE: Club Customer Engagement report* found that local service is more relevant for comms on locally-based restrictions, however national communications were likely to have more 'clout'. Some recalled the confusion (and divisiveness) of local tiers during lockdown and worry about very localised restrictions. The general view is that restrictions should be region (not company) wide as this is likely to most effective. The *SSC WRMP24 – WRAP Theme 1* research findings showed that most believe restrictions should be regional / national rather than more localised.

Customer support during drought periods and communications and support required

Current evidence on this topic is limited as most customers cannot accurately remember a drought period within recent years and therefore claim to be willing to accept lower service levels or stricter restrictions, however there is caution around this as it is not possible to accurately predict how customers might react if this were to happen more frequently than at present. There is no detailed research information found during this review on the communications and support customers would like during drought periods although the Red Cross currently have an information page available for areas suffering from drought: https://www.redcross.org.uk/get-help/prepare-for-emergencies/heatwaves-uk/drought.

Golden Threads: Service level resilience to drought

Golden Threads	**The need for customer information and engagement**	When informed, many customers are in favour of current resilience plans and targets, timelines associated with these, and usage of NEUBs and TUBs
	Call for collective responsibility and fairness	Customers are unwilling to accept the most severe restrictions (drawing water from a standpipe), except in the case of extreme emergencies.
	Concern for the environment	There was support for use of TUBs and NEUBs (potentially more so than now) in order to protect the water environment over the long term.
	Protection for vulnerable customers	Those customers on the PSR were less willing to accept lower service and were more likely to voice issues and concerns with restrictions because of the impact on them personally.

7. BALANCING SUPPLY AND DEMAND SIDE OPTIONS

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
WRMP Full Report - Oct 2017	WRMP and Long-Term Resilience Customer Engagement Insight – Full Report (Community Research) – September 2017	September 2017 (FW dates not given)	HH and SME customers	Workshops 62, business and stakeholder round tables 21, survey: 300 in SSW, 200 in CAM	To use the research findings from Phase One to support the development of SSC's WRMP in both regions, specifically understanding customers' views on; levels of service, leakage, water efficiency, metering, and (if possible) environment impact, and initial thoughts on options for the future. And to use the findings from Phase Two to inform investment choices, by giving customers the opportunity to feed into SSC's strategic challenges.
Appendix E - customer research findings summary - CAM WRMP	Appendix E Customer Research Findings Summary – Cambridge Water – Water Resources Management Plan: Appendices	2017-2018	HH and SME customers and future customers	7000+	n/a
Appendix A07 - PR19 data triangulation study - SSW WRMP	PR19 data triangulation study - SSW WRMP	2017-2018	HH and SME customers and future customers	9000+	n/a
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions (Community Research) – August 2021	June-August 2021	HH (28), future (9) and SME (10) customers	47 Customers	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria. To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 20 (CAM 5, Essex & Suffolk 5: Anglian 10) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
South Staffs Water Stakeholder Roundtable feedback summary	Stakeholder Roundtable Feedback – South Staffs Water (Community Research) – October 2021	October-21	Attendees from councils, Citizens Advice, Natural England, Waterwise and consumer industry representatives.	8	To consider stakeholder views at a formative stage of the plan development process.
Cambridge Water Stakeholder Roundtable Full Report - October 2021	Stakeholder Roundtable Feedback – Cambridge Water (Community Research) – October 2021	Oct-21	Attendees from a wide range of organisations, including local environmental and river groups, national environmental organisations, a water retailer for businesses, a social housing provider, a local authority planning department, a university and an MP	18	To consider stakeholder views at a formative stage of the plan development process.
Quant MCDA Study - Feb 2022	SSC WRMP: MCDA – Quantitative Insights (Accent) – July 2021	20th December 2021 to 4th March 2022	HH and NHH customers	1,015 online interviews: 570 with SSW and 445 in CAM, 887 HH, 128 NHH	Explore customers' attitudes and views regarding the natural environment and SSC's approach to planning. Explore customers' ranking of SSC's water supply options to meet demand over the next 25 years. Explore customers' preferences for WRMP options to obtain weights for WRW MCDA decision metrics.
WRW 2022 updated regional plan customer research	Water Resources West Regional Plan Customer Research (Shed Research Consulting) – June 2022	June-22	N/a	n/a	To ensure the customer input in the regional plan is up-to-date by including the latest knowledge (by conducting a triangulation of the most recent customer and stakeholder research).

Overview

Customers have consistently preferred demand side options rather than increasing supply side options, particularly focussed on reducing leakage. Although some of the research showed restrictions on usage were not popular as an option to meet the demand for water long-term, other evidence shows that when explored in more detail customers are comfortable with the current levels and frequency of restrictions and would likely tolerate an increase to restrictions if necessary. However, this context is critical, that customers expect leakage to be dealt with alongside the introduction of or increased frequency of any restrictions, in order that SSC are seen to be playing their part as well as customers reducing their usage.

Of supply side options, increased water abstraction from rivers was the least popular, and at times unacceptable to customers, whilst there are other options such as water recycling at home and new reservoirs that were preferable.

Customers' preferences to meet the long-term demand/supply balance challenge to 2050

Initially, there was not a lot of evidence to understand customer views on how to balance supply and demand challenges. The *WRMP Full Report - Oct 2017* stated that demand management options, especially reduced leakage and increased metering, were most appealing to customers in both regions. Customers felt they should be included by the company as part of the strategy. in terms of asset management, two medium treatment works were preferred over one mega works as this was seen as a safer option in terms of ensuring reliability of supply.

By the time the *SSC WRMP24 - WRAP Theme 1* research findings from summer 2021 was available, this showed that many wanted a balance between demand management and increasing supply. Demand management options came first for many and supply solutions should be considered a last resort for some. In general, negative environmental impacts are to be avoided. The report also highlighted that there was stronger support for universal metering in Cambridge than in South Staffs. Future customers were more likely to feel that reduced household water consumption targets were achievable compared with bill payers and some PSR customers were less likely to feel that reduced consumption targets were realistic (potentially because of having health conditions which rely on greater water use).

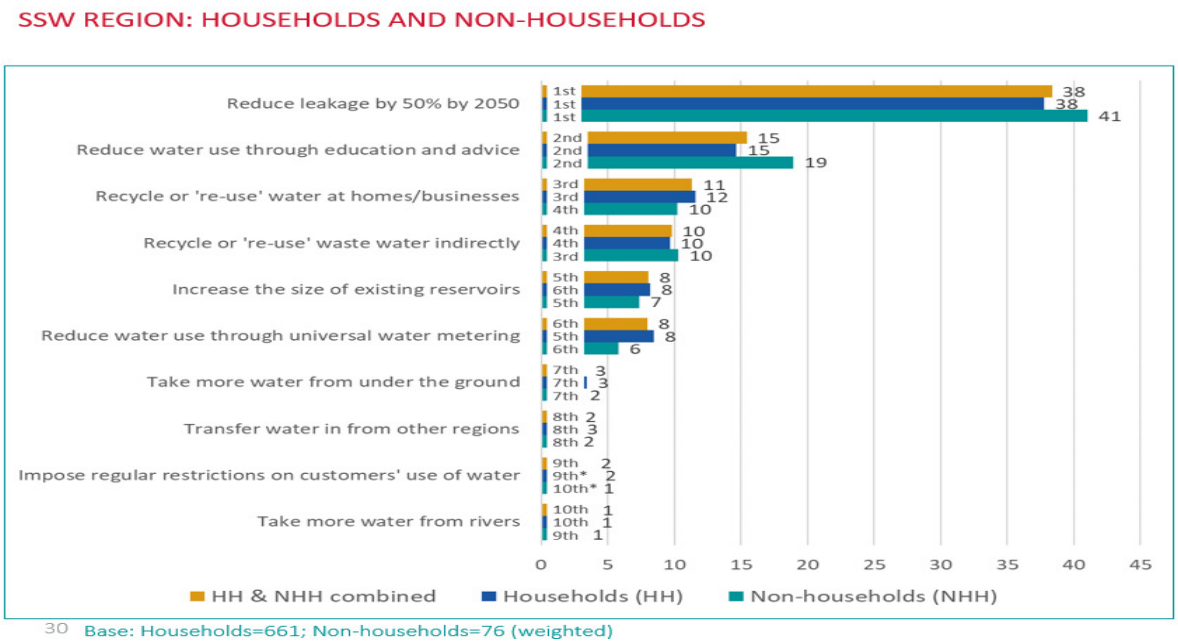
The *Blue Marble WRE Club report from September 2021* summarised that supply options should meet three criteria: financially viable; low carbon; and effective in the long term. Options that appeared short term stop gaps and/or poor environmentally were largely rejected (including the use of drought permits). Recycling water and (low carbon) desalination were the most acceptable of the 'new' supply options. Tankering from other countries had the least appeal.

The prioritisation of demand solutions was reinforced during the *South Staffs Water Stakeholder Roundtable feedback summary in October 2021*, when stakeholders from environmental organisations prioritised demand over supply, in line with UKWIR guidance, in order to minimise the negative environmental impacts associated with supply-side measures. Other stakeholders did not have strong views on the balance between supply versus demand investment and felt that South Staffs Water should use whichever options come out as best from cost-benefit analysis.

Similarly, during the *Cambridge Water Stakeholder Roundtable feedback summary in October 2021*, there was strong support for Cambridge Water to do more on demand management and quickly e.g. increase ambition on per capita consumption; introduce universal metering; and use restrictions as part of business as usual rather than only in the most extreme situations. Generally stakeholders did not have a preference on how to balance demand and supply investment though some preferred demand management, mainly because of the smaller environmental impacts.

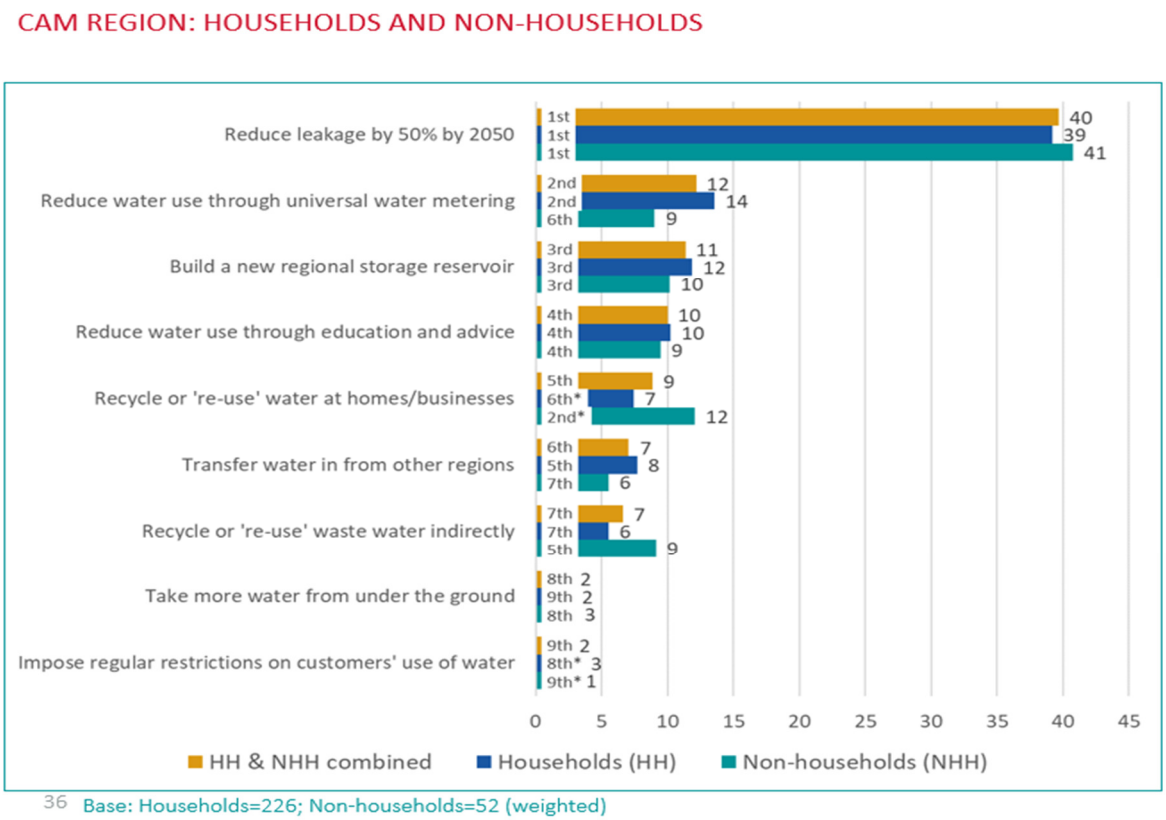
Most recently, the *SSC Accent Quant MCDA Study - Feb 2022* showed customer 9 (in SSW) or 10 (in CAM) supply and demand options with their relative costs, and environmental impacts, and asked them to give a measure of preference intensity on a 0-100 scale. The study found that both regions prioritised reducing leakage, then reducing usage through education, then recycling at homes/businesses third, again underlining demand as a priority rather than supply (See Figure 8).

Figure 8: Supply-demand option preferences



30 Base: Households=661; Non-households=76 (weighted)

Figure 8: Supply-demand option preferences



36 Base: Households=226; Non-households=52 (weighted)

Similarly, the WRW 2022 updated regional plan customer research found that amongst demand side options reducing leakage was most favoured, whilst water use restrictions were least popular.

This has also been the case in other water areas, as shown in the *Appendix E - customer research findings summary - CAM WRMP from 2017-2018*, except for 'building a new water reservoir', preferred demand side options to supply side ones. The engagement carried out by Anglian Water also showed that their customers generally prioritised demand options over new water resource options, preferring interventions that avoid perceived wastage (leakage reduction and recycle/reuse sewage), promote efficiency (provide water saving devices) and make use of existing resources and infrastructure (store water underground/aquifer storage and recovery and extend existing reservoirs). There was also evidence to suggest that customers were against the concept of drilling new boreholes on environmental impact grounds as a supply-side option, but were in favour of bringing existing underground water sources back on-line. However, this finding must be treated with caution as the stimulus material shown to customers did not inform customers that these options would only proceed where abstraction levels would be within an agreed sustainable threshold.

Customers' preferences for WRMP demand and supply side options to obtain weights for water resource regional planning (WRW and WRE) MCDA decision metrics and at a local level in WRMP24 plans

The *SSC Accent Quant MCDA Study from Feb 2022* found that the top supply and demand preferences for both regions were the same, with reducing leakage at number one. In SSW reducing use through education second and recycling at homes/businesses was third. In CAM, reducing use through metering was second and building a regional reservoir was third. Other differences emerged between regions:

- CAM customers had higher valuations compared to SSW customers, carbon emissions weights were substantially higher for both SSW and CAM customers than the original SEA and NCA values.
- The ecosystem resilience/habitats weights were lower for both SSW and CAM customers than the original SEA and NCA values (substantially so for SSW).
- For SSW customers, weights for flood risk and human and social wellbeing in line with NCA, weight for multi-abstractor benefits in line with SEA.
- For CAM customers, weights for flood risk higher than SEA and NCA, weights for human & social wellbeing and multi-abstractor benefits in between SEA and NCA values.

Customer preferences for supply side options

Abstracting more groundwater had the least appeal of various supply side options presented in the *WRMP Full Report - Oct 2017*. This was true of both regions, mainly driven by environmental impact concerns. However, customers attending the workshop viewed reusing existing boreholes as a good use of resources. In SSW, there was no clear-cut supply side 'winner.' Workshop participants were most positive about trading, but this was not reflected in the subsequent online survey conducted. In Cambridgeshire, the most popular supply side option was a new reservoir, with workshop participants torn as to whether or not this should be a shared resource.

By summer 2021, the *SSC WRMP24 - WRAP Theme 1* research findings showed abstracting more water was still an unpopular choice in both areas.

During the *Cambridge Water Stakeholder Roundtable feedback summary in October 2021,* levels of detailed knowledge about the supply side options varied among stakeholders. A new reservoir was generally seen as an essential component of the plan. Transfers elicited mixed feelings, ranging from an essential component of the plan in the medium term to unacceptable because of environmental impacts. Water recycling was popular.

Most recently, the *WRW 2022 updated regional plan customer research* found that for supply options, customers assessed supply solutions based on whether they encourage responsible water use, provide value for money, are long-term solutions, and protect the environment. This means reservoir storage and water transfers (as long as not travelling excessive distances or to the detriment of the donor) tended to be customers' preferred options. River abstraction was once again a much less popular option.

Golden Threads: Balancing supply and demand side options

Golden Threads	**The need for customer information and engagement**	Reducing demand through metering and promoting water recycling both benefit from education, though both these areas are behind reducing leakage as a priority.
	Call for collective responsibility and fairness	Customers prefer demand-side options over increased supply-side options and are generally accepting of current level and frequency of restrictions. The implication is that greater participation of customers is part of the solution. However, their efforts need to be backed up by reductions in leakage levels.
	Concern for the environment	Increased water abstraction from rivers is the least popular, and at times an unacceptable supply-side option due to its perceived negative environmental impacts
	Protection for vulnerable customers	There were no specific mentions of vulnerable customers in the context of balancing supply- and demand-side options.

8. DEMAND SIDE OPTIONS

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
PR19 Foundation Research - Full Report - June 2017	Foundation Report – Qualitative Findings: Full Report (Accent) – June 2017	May-June 2017	HH and NHH customers	70 HH, 23 NHH	To understand customer priorities for service delivery both now and over the longer term (prompted and unprompted). And to check these against previously established priorities in PR14 work.
SSC Metering Presentation Final - July 2017	SSC Metering Uptake Research (QA Research) – July 2017	July 2017	HH Customers without a meter and have a rateable value above 250 and likely to benefit from a meter.	101 CAM, 101 SSW	To understand the key barriers to customers switching to a meter. To understand what messages and communication channels would be most effective in switching customers to take up a meter.
WRMP Full Report - Oct 2017	WRMP and Long-Term Resilience Customer Engagement Insight – Full Report (Community Research) – September 2017	Autumn 2017	HH and SME customers	Workshops 62, business and stakeholder round tables 21, survey: 300 in SSW, 200 in CAM	To use the research findings from Phase One to support the development of SSC's WRMP19 in both regions, specifically understanding customers' views on; levels of service, leakage, water efficiency, metering, and (if possible) environment impact, and initial thoughts on options for the future. And to use the findings from Phase Two to inform investment choices, by giving customers the opportunity to feed into SSC's strategic challenges.
Appendix E - customer research findings summary - CAM WRMP	Appendix E Customer Research Findings Summary – Cambridge Water – Water Resources Management Plan: Appendices	2017-2018	HH and SME customers and future customers	7000+	N/a
Appendix A07 - PR19 data triangulation study - SSW WRMP	PR19 data triangulation study - SSW WRMP	2017-2018	HH and SME customers and future customers	9000+	n/a
Severn Trent Proactive Metering Research Report	Severn Trent Proactive Metering Research Findings (DJS research) – June 2021	June-21	34 customers (domestic and vulnerable) Group: 28 depths: 6	34	Severn Trent wanted to conduct deliberative research to understand five key themes, relating to metering; views on metering, installation of the meters, drivers and barriers to metered water billing, Severn Trent communications, mandatory metered billing.
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions (Community Research) – August 2021	June-August 2021	HH (28), future (9) and SME (10) customers	47 Customers	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria. To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.
Water usage in the garden - Final Report 2021	Understanding Water Usage in the Garden: Final Debrief (Blue Marble) – November 2021	August-September 2021	15 households (3 per water company area), mix of social grade, HH composition and age,	15 HH	Observe, through ethnographic filming, garden water usage behaviour. Assess dissonance between recalled and actual (filmed) behaviour. Provide insight to support communications and behaviour change activities about "good" or "bad" garden water usage.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
			working status, home ownership, urbanicity. All with outdoor tap and moderate - heavy water users.		Explore whether garden water usage is thought to have changed as a result of the Covid-19 pandemic.
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 20 (CAM 5, Essex & Suffolk 5: Anglian 10) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).
South Staffs Water Stakeholder Roundtable feedback summary	Stakeholder Roundtable Feedback – South Staffs Water (Community Research) – October 2021	October-21	Attendees from councils, Citizens Advice, Natural England, Waterwise and consumer industry representatives.	8	
Cambridge Water Stakeholder Roundtable Full Report - October 2021	Stakeholder Roundtable Feedback – Cambridge Water (Community Research) – October 2021	Oct-21	Attendees from a wide range of organisations, including local environmental and river groups, national environmental organisations, a water retailer for businesses, a social housing provider, a local authority planning department, a university and an MP	18	To consider stakeholder views at a formative stage of the plan development process.
Metering and Efficiency - Research report Welsh Water	Metering and Water Efficiency: A research report (Relish) – October 2021	October 2021 is report date, FW dates not provided.	DCWW Customers	Our response comprised n=30 in online community, 700 online interviews and n=100 CATI (computer assisted telephone	To collect feedback from customers to understand their views, preferences and priorities on the subjects of water efficiency, metering and tariffs.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
				interviews), to maximise	
SSC WRAP Deep Dives Report	South Staffs and Cambridge Water: Findings from the WRAP (Water Resources Advisory Panel) DEEP DIVES on universal metering and water transfers (Community Research) – November 2021	November-21	Forum 1: 47 Total CAM: 25 SSW: 22 Billpayers: 28 Future: 9 Small business: 10 Forum 2: 40 total CAM: 20 SSW: 20 Bill payers: 26 Future: 6 Small business: 8	87	To explore household customer, future customer and SME business customer views in depth on; universal metering and water transfers.
Customer Priorities Infographic	Customer Priorities – Now and in the future	2020/2021	HH and NHH customers	n/a	
UEA-CBESS-22-01 - behavioural change report – 2022	Behaviour Change Interventions in the Water Sector (UEA and CBESS) – January 2022	Jan-22	n/a	n/a	To identify existing good practices, as well as opportunities for improving how evidence bases can support the design of interventions, and how the effectiveness of interventions can be monitored and evaluated over various timescales.
WRE NHH demand club project – Stage 1	WRE NHH Engagement Interim Report: Water Retailers (Blue Marble) – January 2022	December 2021 – January 2022	NHH Customers	9	To find out water retailers views and opinions on water efficiency, and on strategies to encourage NHH water efficiency.
WRE NHH demand club project – Stage 2	WRE Promoting Water Efficiency in the NHH Sector: Collaborative Roundtable Meetings – Debrief (Blue Marble) – April 2022	March 2022-April 2202	NHH Customers	4	To develop and refine solutions with retailers and wholesalers.
Severn Trent WRMP24 Report	Severn Trent Water – WRMP24 Report (DJS Research) – May 2022	November 2021-February 2022	HH and NHH customers	624 HH, 149 NHH	Measure customers' preferences for water resources, levels of service and the options or plans that Severn Trent might create to address any changes to levels in service or to address a supply-demand deficit. To develop a Best Value Plan in line with Water Resource Planning guidelines.
SSC WRAP online groups report - Feb 2022	South Staffs and Cambridge Water – Findings from the WRAP (Water Resources Advisory Panel) Focus Groups on options relating to metering, tariffs and water transfers (Community Research) – February 2022	Feb-22	Bill payers: 5 Future: 1 Small business: 1 SSW: 6 CAM: 5	11 customers	To explore the following topics with online groups; metering options (covered in both regions), new types of tariffs/incentives (SSW only), water transfer options (CAM only).

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
Quant Themes 1 and 3 Study - Mar 2022	SSC WRMP Themes 1 & 3: Managing Droughts, Leakage Ambition, Universal Metering, Environmental Ambition – Quantitative Insights (Accent) – April 2022	February to March 2022	1028 HH, 152 NHH	1180 in total, 753 in SSW and 427 in CAM	Core purpose of this study was to provide evidence of customer response and support for; managing droughts, universal metering, leakage, environmental ambition.
SSC H2Online Community Feedback – WRMP	H2Online – South Staffs Water and Cambridge Water: Summary of activities relevant to WRMP engagement (Explain) – November 2019 to March 2022	November 19- March 22	Panel responses vary over time CAM 360+ SSW 315+	Panel responses vary over time CAM 360+ SSW 315+	To build an engaged community of customers, going beyond gathering insight to establish and sustain two-way engagement. To ensure that the PR24 engagement programme delivers a further step-change in customer engagement.
SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses	Debrief Meeting Notes – Stakeholder Roundtable: Helping Businesses Save Water – March 2022	March-22	Attendees: Universities and local industry	6	To work with businesses in the Cambridge area to find out what can be done with retailers to further support, promote and implement water efficiency in NHH in the next 5 years and beyond (challenges, visions, opportunities).
SSC Customer Promises Tracking 2021 22 Annual Report	South Staffs and Cambridge Water Customer Tracking Research Report 2021/22 (Turquoise) – April 2022	Report dated April 2022 Rolling monthly interview programme	Household Non-Household	1,106 Total: HH: 814 NHH: 292	To monitor ongoing customer satisfaction against the key metrics that engagement has shown to be important to customers; these include hard and soft measures. To deliver on-going customer sentiment tracking against key brand statements. To probe awareness and usage of key services and track changes in the way customers wish to interact with SSC. To monitor and track the impact of Covid-19 pandemic on customers – new objective added in 2020/21.
Artesia MOSL Enhancing Metering Technology report FINALREPORT	MOSL: A Strategy for Enhancing Metering Technology (Artesia) - April 2022	Report dated 6th April 2022, no FW dates given.	Stakeholders	30 stakeholders.	The aim of this project is to capture and understand the collective stakeholder view of current state of metering technology in the retail market and to develop a technology strategy and framework for assessing the business case for smart, AMI, AMR and data solutions which will benefit stakeholders in both the retail and wholesale market. Providing a consistent approach to support adoption of future standards and protocols and more efficient rollout across the industry.
Hafren Dyfrdwy WRMP Customer Research Debrief FINAL	Hafren Dyfrdwy Water Resources Management Planning: Customer Research Debrief (Blue Marble) – June 2022	April and May 2022	4 future customers, 20 HH customers, 6 NHH customers, 5 digitally excluded customers.	35	To understand HD customers' views of the initial WRMP proposals. Specifically, to gauge; response to proposed use of water restrictions, response to proposed ways to reduce demand, response to proposed use smart meters, response to plans to meet the new leakage targets, response to plans to use water transfers, and response to plans to support private supply households.
SSC Customer Priorities Tracker -	Priorities Research Qualitative	May-22	Customers	27 current and future HH	Explore what matters to customers now and in the future to root SSW/CAM plans in the customers' world.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
Qualitative wave 2 Research - May 2022	Insights – Year 3 (Accent) – May 2022			consumers and 7 NHH customers, 5 depths with 75+ and financially vulnerable, 5 depths with 50+ NHH customers	
Severn Trent environmental destination and compulsory metering	Report for Severn Trent Water – Environmental Ambition and Compulsory Metering: Quantitative Insights (Accent) – May 2022	May-22	HH (817) and NHH (183) customers. 490 metered, 434 unmetered customers.	1,000 interviews	To understand customer views and support on universal metering and environmental ambition.
WRW 2022 updated regional plan customer research	Water Resources West Regional Plan Customer Research (Shed Research Consulting) – June 2022	June-22	N/a	n/a	To ensure the customer input in the regional plan is up-to-date by including the latest knowledge (by conducting a triangulation of the most recent customer and stakeholder research).
Strategic Metering - Roles and Responsibilities Report	Roles and Responsibilities for Metering in the NHH Market: Phase 1 Report (PA Consulting) – June 2022	June-22	collaboration with MOSL, the Metering committee and it's Metering Roles and Responsibilities Sub Group	n/a	Identifying a set of potential options to reform or enhance current roles and responsibilities in relation to metering and related activities in the NHH market.
WRE NHH engagement	Promoting Water Efficiency among Non-Household Customers: Understanding how Wholesalers can Motivate Usage Reduction (Blue Marble) – August 2022	8th June - 7th Jul 2022	NHH Customers	26 NHH customers	To find out current role of water efficiency –How, it at all, have businesses adopted water efficiency? Barriers to water efficiency – What is, and could be, preventing adoption of water efficiency? WRE proposition response – How do business' feel about WRE's water efficiency propositions?

Overview

As concluded in section 7, customers have strong preferences for demand side responses over supply side and this preference has remained consistent since 2017. This section looks in more detail at 5 options:

- **Leakage** is an emotive issue for customers, with the majority believing that ethically, levels must be reduced as much as possible. Furthermore, some feel that leakage must be reduced if customers are to be motivated to play their part with water conservation. Despite this strong sentiment from customers, they were reluctant to pay for this on bills and expect this to be funded by SSC in other ways. This situation has been exacerbated by financial hardship since Covid-19. In addition, leaks on customer properties are unlikely to be effectively addressed without an education programme to inform customers of the scale of this problem, how to detect leaks and how to reduce them. The national leakage target appears to be broadly in line with customer expectations (once educated) and there is some scope to bring forward the date by which targets are to be achieved.

- The national targets for **reducing customer demand for water** were largely acceptable to customers, although the stretch targets seemed too difficult to achieve at this point. There is appetite from stakeholders in the building sector and wider sectors (e.g. environmental) and customers for building in water recycling into new builds. Customers are still keen to have education on water efficiency strategies, whether via schools, directly to their homes or information on water saving strategies for large businesses.
- **Water recycling** is popular with both household and non-household customers, however the reality of installing a system provides some challenges which would require education up front on the benefits and likely costs, potential subsidies to help customers accommodate the costs of retrofitting a system and information on how to maintain it. These would all need to be in place before large scale adoption is likely to take place.
- **Metering** – On balance, customers support metering as the fairest approach to charging, although this is backed more strongly by customers who already have meters installed, future customers and those in the Cambridge region. Customers and stakeholders have some concerns about how to move all customers to universal metering, including concerns for vulnerable customers. More recent studies suggest targeting areas of higher consumption for metering, first, might be a good approach for rolling out universal metering. Most recently, speed of roll out has depended on a mixture of speeding up the roll out to deliver a reduction in demand as quickly as possible, and potential increased cost for customers, the latter being more prominent since Covid-19 and the more recent rise in the cost of living. Work in other regions echoed the findings in SSC, although the need for education on how installation works, and the potential benefits was more evident in Severn Trent's region. With regards to preferences for smart meters, once educated, customers had a preference for AMI over AMR metering technology and some willingness to pay for the programme, due to a perceived small price difference between the two technologies.
- **Behaviour change** is an area that overlaps with other demand and supply side options, but in general customers need to have a full understanding or any particular issue before any change is likely e.g. the amount of leakage that takes place on customer properties, or the benefits of smart metering versus the costs of installation. For the most part, customers agree they could save more water than they do at present (but need motivation to do so and barriers removed). There is valuable literature advising on tactics to elicit behaviour change, such as using multimedia education materials rather than static printed media, collaborating with local businesses and the community to spread positive messages, and informing and behaviour change campaign with sound desk and primary research before commencing.

Leakage

Customer aspirations for leakage reduction over the next 25 years to 2050

The *WRMP Full Report - Oct 2017* showed very clearly that all audiences want SSC to do more, going beyond current targets at the time. The moral imperative outweighed the economics for many. Leakage levels can act as a barrier to reducing consumption for some.

The *Appendix E - customer research findings summary - CAM WRMP* and *Appendix A07 - PR19 data triangulation study - SSW WRMP* not long after this in 2017-2018 reinforced this, saying that the evidence all pointed to the need to reduce leakage levels well beyond current levels. Customers thought this was morally the right thing to do, although the more informed customers were about the costs and operational challenges associated with reducing leakage by significant levels, the more balanced their judgement became. The triangulated WTP value among household and business customers to reduce leakage by 1ml/d was £216,977 (per year).

The *SSC WRMP24 - WRAP Theme 1 research findings* highlighted the fact that leakage was still a customer priority. Clean water was seen to be a precious resource and loss through leakage felt 'wrong'. Customers assumed that the issue would only worsen with population growth, but on the flip side, there was an expectation that technological advances would help achieve targets.

> *"I would have thought with all the advances in technology it would be possible to identify and locate leakages quickly and so reduce wastage quite a lot over the next 25 years."* (SME – hotel)

There was little concern expressed about the disruption associated with leakage. Educating customers was seen to be key to reducing leakage from their pipes, coupled with incentives to tackle the problem.

The *SSC H2Online Community Feedback from 2019-2022* found that when members were told about SSC's leakage reduction targets for 2020-2025 (15% reduction), 64% wanted South Staffs Water to go further and deliver a 20% reduction or greater, and 47% wanted Cambridge Water to go further and deliver a 20% reduction or greater.

"Should definitely go for 20% target but customers should not be charged extra. Losing water costs money so by repairing more leaks saves the company money. Invest in engineers to repair more to save more! I know it's not quite that simple, but this is how you should focus and prioritise funding to support it"

"Cambridge Water should seek not be satisfied with being better than the average water company, they should aim to be leading the pack."

The *SSC Customer Promises Tracking 2021-22* showed levels of satisfaction were 45% positive agreement, on average, for how quickly SSC repair leaks on public highway/footpath although for non-household customers, satisfaction was lower at 35%. Perceptions had improved during the first year following the COVID pandemic (2020/21) but had slipped back again in 2021/22 to previous levels.

Detailed research in other regions shows similar results, the *Hafren Dyfrdwy WRMP Customer Research in April and May 2022*, showed that customers prioritise leakage reduction. They saw leakage as a bigger problem than they realised and that this is about 'getting your own house in order'. The majority wanted to see leaks reduced irrespective of the cost and see long term cost and environmental benefits in doing so. A much smaller number supported leak reduction only where it is economically beneficial.

Acceptability of the national target of a 50% reduction by 2050

In the summer of 2021, the *SSC WRMP24 - WRAP Theme 1 research findings* showed that leakage was a key priority, but there were mixed views on the national target. Around half of participants (slightly more in SSW) were happy with the target given the challenges and the associated cost/disruption of addressing them, as long as they were convinced about effective planning. There needs to be communication with customers about their role. There was a strong call from both regions for interim targets to ensure SSC stay on track. Half of participants (slightly more in the Cambridge region) called for more ambition because of the urgency of the issue and the need for action. There were some mentions of technology to facilitate achieving the target.

The *Blue Marble WRE Club Project September 2021* found customers agreed that a 50% reduction in leakage was acceptable, but the timeframe of 2050 is too long and would prefer to see a target of 2030. However, many customers do not understand why addressing leaks should take 30 years to achieve, they just see it as an extremely important target.

The *Accent Quant Themes 1 and 3 Study in Mar 2022* asked customers without any prior information, to provide their views on leakage reduction and 46% of all customers wanted to see leakage reduced to as close as zero as possible. Once informed on the challenges around reducing leakage, 80% supported the national target for reducing leakage and just 2% opposed the target. Key reasons for supporting the national target for reducing leakage were that wasting water does not make sense and that 'we'll leave more water for future (if leaks are fixed)' and that it's the 'right' thing to do. Customers felt there should be more education to raise awareness of water usage and shortages. It was acknowledged however that it is impossible to reduce leakages to 0%. As would be expected, customers who were more engaged with protecting the environment were significantly more likely to have a higher level of support for the national target for reducing leakage.

The *WRW 2022 updated regional plan customer research* in June 2022 looked at going beyond leakage targets and found there was an appetite to go further i.e. 15% reduction by 2025 and 50% by 2050 is seen as not fast enough.

Willingness to pay more to achieve the target quicker

Whenever the subject of who pays for reducing leakage was put to customers, in most cases, they feel this is a key area for investment and should be prioritised, but customers were not keen for this to be on their bills. Customers in other regions such as the *Hafren Dyfrdwy WRMP Customer Research in April and May 2022*, supported ambitions targets beyond the immediate cost benefit, although there were indications that customers will not want to fund this on their bills. Customers were shocked by how much water leaks and consequently wanted Hafren Dyfrdwy to halve its leakage level ahead of the statutory timeframe (2050).

Given levels of leakage, should the focus be on company pipes v customers pipes?

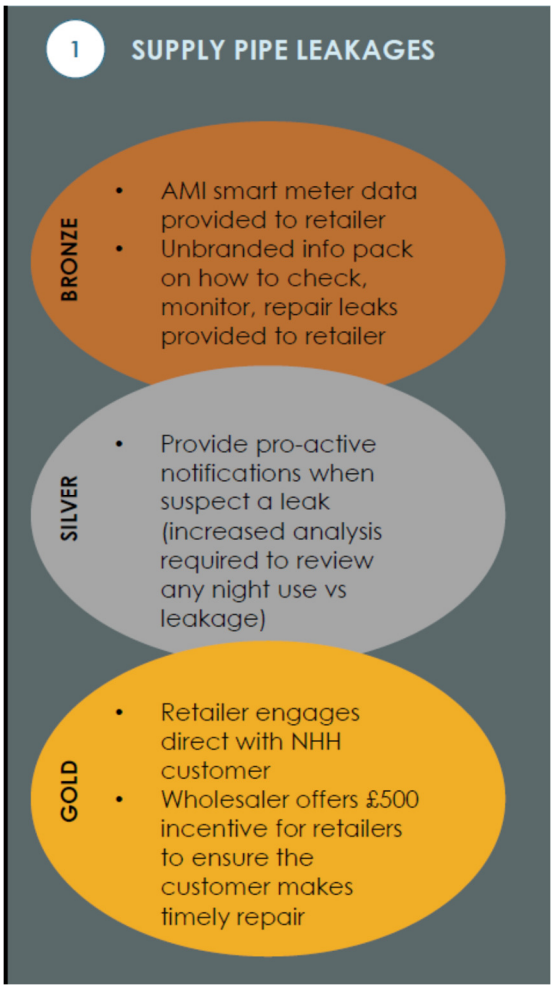
The primary concern for customers in the *WRE: Club Customer Engagement report by Blue Marble in September 2021* was companies reducing leakage, with 62% rating this as one of their top 3 options (the next option was 24pp behind at 38%). Customers expected companies to 'get their houses in order' before any major new resources are considered or before demands are made of customers to reduce their own leakage. Customers believed leakage reduction is the responsibility of companies rather than the customers. Customers would be happy with a 50% reduction in leakage across company and

household pipes. In order for customers to address household leaks, they need support from companies in the form of; leakage allowance, being alerted if there is a leak, smart metering and insurance policies.

The *SSC WRAP online groups report - FINAL - Feb 2022* showed that most customers were unaware of the proportion of leaks which are on customers' property, implying that significant education will be required before customers will make any changes to their behaviour or property to reduce leakage.

Engagement with businesses via the *SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses in March 2022* showed that provision of usage data and understanding of where water is being used was critical to enable implementation of water efficiency interventions and help identify and fix leaks. Leakage, Wastage (internal leaks e.g., loos, urinals) and Retrofits are already being considered for new sites but there needs to be more i.e. what is the next generation of solutions from the water sector and business case studies to support.

Figure 9: Supply pipe leakage options from WRE NHH demand club project – Stage 2



The *WRE NHH demand club project – Stage 1 and 2* found that most non-household customers were not engaged with water efficiency considerations. The expectation was that wholesalers should be responsible for water efficiency and post COVID they are just surviving. Retailers felt that commercial pressures are a priority. Then Net zero and carbon reduction dominate climate change priorities. Water efficiency may feature in CSR but lip service only. There was potential for 'crisis fatigue' and 'doomsday top trumps' to be a disincentive to engage. Unless customers have a specific need for water efficiency, better service with accurate billing was more enticing. During the Stage 2 engagement, three propositions for handling supply side leakage were put to the retailers for evaluation (see Figure 9).

Retailers responded enthusiastically to all three options for the supply pipe leakages though had some key suggestions to make them more appealing/ less risky for NHH customers. Alerts were particularly well received, as was data (though some not keen on being provided with lots of data, preferring alerts only). There was recognition that customers need information on looking out for leaks, and the benefits of leak repairs to customers. Customers would be more motivated to fix leak if they understood the cost to them. The incentive level may not be attractive enough to make it worthwhile for larger sites. The barrier for customers is investing on leak detection, hence this should be funded. Non-household customers were already motivated to repair leaks once detected.

Engagement in the proposed way still requires a lot of resources and effort from the retailer (in a low margin context).

The recent *WRE NHH engagement conducted in June and July 2022* gauged responses from Anglian water business customers to a proposition to reduce leakage via water meter detection. In particular, for those who had experienced leaks in the past, this proposition felt valuable as it could help identify and help fix leaks more quickly which in turn saves money and potential damage.

Reducing customer demand for water

Level of ambition for the home of the future for household usage levels and the best way to deliver this

In the *SSC WRMP24 - WRAP Theme 1 research findings* from the summer of 2021, there was a call for greater ambition in terms of speed of consumption reduction, but not in terms of the stretch ambition of 80l/p/d. The *WRW 2022 updated regional plan customer research in June 2022* provided feedback from stakeholders (experienced in water related matters) and the majority of SSW customers suggested current target for 110L per capita consumption by 2040 should be brought forward, with the focus being on expediting targets rather than increasing them e.g. 80L.

Should SSC support the development of low water use homes – partnerships and incentives with new developers?

The *WRE: Club Customer Engagement report by Blue Marble in September 2021* found support for using grey or rain water, especially from developers and Local Authorities (LAs) who were interesting in collaborating to achieve this particularly in new builds. This also had strong support from environmental groups when thinking about new developments to address both floods and droughts. There is a need for better incentives to encourage more grey water schemes, including for businesses, the payback period for grey water is 10-12 years, this is too long and so requires incentives.

H2Online engagement conducted in August 2022 asked about smart villages, a potential new housing innovation designed to deliver on the Government's 'Future Homes Standards' and found that both South Staffs and Cambridge regions felt similarly about it, with the largest proportion of members stating that they think the plan is a good idea, but they would not be willing to receive a small bill increase to fund the scheme (42% of South Staffs Water voters and 44% of Cambridge Water voters). This suggests that smart villages are not a main priority for SSC community members. More CAM voters (21%) stated they'd be happy to receive the bill increase compared to SSW voters (9%), illustrating that this innovation may be more effective in the Cambridge Water area. Some members stated that, unless they were to purchase a new build house themselves, they felt they shouldn't be responsible for paying for this. Collaboration between businesses was mentioned as a possibility for funding and one member felt that all new homes should be built with water efficiency in mind.

Should SSC continue to run education programmes at schools to raise the value of water? Would customers support additional investment in this area?

The H2Online community found that 48% of South Staffs Water members and 61% of Cambridge Water members indicated that water companies, including SSC, should play a supporting role for teaching children about issues such as water efficiency. 33% in SSW and 28% in Cambridgeshire felt that it was SSC's full responsibility to lead on this, with support from teachers and parents.

The *Metering and Efficiency Research report from Relish, Welsh Water from October 2021* found customers would like their water company to deliver higher profile campaigns on using water sensibly, conveying an 'in it together' message which is supported by education at schools on water efficiency, as well as those about to leave home so they adopt good habits.

How far should SSC go to encourage NHH businesses to reduce their water consumption?

The *WRE NHH demand club project – Stage 1* (Dec 21 – Jan 22) found that for small business, according to NHH retailers, that water efficiency is less relevant and so messaging has to be targeted to larger businesses, where efficiency is more relevant. Some NHH retailers felt that there is a lack of water efficiency options available for businesses, and information that is available is targeted towards households. Retailers think smart metering could be a solution; is it the simplest and easiest way to target and measure water efficiency but the cost of smart meters is excessive for smaller businesses and investment support is needed from wholesalers.

Furthermore, the *WRE NHH demand club project – Stage 2* (March 22- April 22) similarly found that messages need to be relevant and tailored to different businesses. These retailers suggested creating a 'Which?' style list of technologies so companies can vie for business based on water efficiency criteria. Wholesalers need to motivate businesses 'to have skin in the game', to drive awareness of water usage and waste.

The WRE NHH final debrief (from August 2022 tested 4 propositions with NHH customers).

Proposition 1 was 'to reduce leakage from business premises. Customers who had experienced a leak in the past felt this proposition was valuable as it can help identify leaks to be fixed more quickly and thus saves money and prevent potential damage. Some improvements that were suggested:

- Ensure it's clear where the customer is responsible for leaks
- Provide case studies or cost examples to hep contextualise the financial support against the cost of leak repairs
- Outline clear guidelines for support eligibility and how funding will work

Proposition 2 was 'to enable businesses to reduce water'. Customers would prefer an in-person audit by their water company, the was especially important for larger companies as the self-audit tool isn't sufficient. Some improvement suggested are:

- Important to be clear whether an in-person assessment would come at a cost
- Offer or advertise specialist support and guidance for more complex or unique businesses
- Optimise self-audit tool to offer a hybrid and tailored approach – self-audit with support from online chat or video call

Proposition 3 was 'to encourage businesses to adopt water recycling'. It was found that implementing water recycling measure resonated mor with high volume users and those on an environmental platform. The improvements suggested are:

- Develop 'green accreditation' further to help businesses understand why it would be beneficial and who would recognise it
- Water company should provide expert advice; outside the scope of a water retailer who are considered more of a 'middle man'
- Target new businesses as they set up

The final proposition, 4, was 'to encourage businesses to consider water efficiency actions. For this proposition, incentives felt the most relevant for businesses that are able to make significant changes. Web based sources were most relevant for those businesses which are 'standards' in the way they are set up. Suggest improvements included:

- Give examples of small behaviours that would be eligible for incentives and rebates
- Show how this accreditation scheme differs from other and who would recognise it
- Offer a web-chat option as a resource to talk to a real person about your unique business.

Water recycling

The *Appendix E - customer research findings summary - CAM WRMP in 2017-18* and *Appendix A07 - PR19 data triangulation study - SSW WRMP* stated that the feedback from the WRMP and other projects highlighted an appetite for water recycling, particularly when customers are informed about the challenges we face in terms of meeting future demand for water. However, whilst customers viewed it as a priority, there were affordability issues that came through in the engagement. This included the low level of likely take up of a retrofit scheme at an individual property level and the long-term concerns over whether customers would keep up the maintenance of a greywater system. Household customers also expressed an interest for more advice and support to help them to install simpler rainwater harvesting system, such as water butts.

Findings from the *H2Online poll* (September 2021) found that customers generally thought water recycling should be something that is done in all homes (67% SSW, 64% CAM). All Cambridge customers were happy to use recycled water for flushing the toilet (91% SSW) or in their garden (73% SSW). Those who did have concerns was because of hygiene and potential spread of disease, they want SSC to be clear on the quality of the water that has been recycled. Black water was the type of water customers were least happy to use in their homes at all. The majority of customers (68% SSW, 82% CAM) indicated that they had no concerns about using recycled surface rainwater in their homes, but customers were generally more concerned about using recycled greywater in their homes. The *South Staffs Water Stakeholder Roundtable feedback summary in October 2021* felt that grey water recycling elicited more enthusiasm than any of the other supply-side options put to them. This was partly because it was thought to have low environmental impact and was minimally disruptive for customers. Also, the public were thought to be familiar with and positive about the concept of recycling. However, stakeholders would want questions answered. For instance, what could the water be used for; were the chemicals used in grey water recycling safe; and who would bear the costs of e.g. retrofitting an extra set of pipes in existing homes? Water recycling was also popular at the *Cambridge Water Stakeholder Roundtable*.

The *SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses in March 2022* highlighted a lack of understanding of the benefits vs costs. There was a need to provide more support on the cost benefit analysis of water reuse interventions and wider non-monetary benefits to help businesses make informed decisions. New builds were also a key area flagged a few times as an opportunity area to explore options for water re-use/harvesting if the right support and expertise was provided. There was a discussion around what is the best route for water recycling on large developments. The return on investment would be key to understand for the business case to stand. There was mention of some negative case studies of water recycling not working, so more success stories need to be shared in what has worked to help shift perceptions.

A survey at the start of 2022 in neighbouring Severn Trent's region, the *Severn Trent WRMP24 Draft Report*, gathered views on the eight or nine supply options that Severn Trent is considering to ensure there is sufficient water to meet demand both now and in the future. The top water supply option for households (based on nine options) was recycling or re-using water indirectly through a treatment works. For non-households water recycling did not feature in the top three options, instead they preferred to see increasing the size of existing reservoirs, increasing the capacity of water treatment works and maximising the outputs of our current water treatment assets.

Metering – including smart tech

The fairest way to charge for water, long-term aspirations for metering and universal metering approaches

The *SSC Metering Presentation from July 2017* showed that likelihood to adopt a meter was driven by bill reduction potential, but only 27% of customers thought a meter would save them money. Small financial gains were not necessarily enough to drive take up and therefore there was also a need to focus on emotional motives.

The *WRMP Full Report - Oct 2017* said that most believed that metering is the fairest way to charge. Views on universal (compulsory) metering were more mixed, with suspicion about water company motives and concern about leakage being a disincentive for some. Smart metering (an indoor device giving a real time reading) was popular.

Echoing other studies at that time, the *Appendix E - customer research findings summary - CAM WRMP* and the from 2017 to 18 found that metering was seen as the 'fairest approach' by a majority of customers for charging for water, but that any policies should not disadvantage customers in vulnerable circumstances. Most unmeasured customers were against compulsory metering and 'having the choice' was seen to be important. Customers were willing to pay £10 per property (per year) to have a meter installed and only £2 for giving the customer a continuous meter reading to their home (i.e. an in-home device).

The *SSC WRMP24 - WRAP Theme 1 research findings in summer 2021* found strong agreement for universal metering, especially strong in Cambridge. In South Staffs, universal metering was picked as one of the top three options by 3 of the 4 future customers. It was a much less popular option amongst current customers. Likewise in Cambridge, 4 of 5 future customers chose this option, although in this region it was a more popular choice for all. However, no SMEs in South Staffs chose universal metering within their top 3 options.

In October 2021, *South Staffs Water Stakeholder Roundtable feedback summary* found that household stakeholders felt strongly about universal metering and had a range of responses. For some it was welcomed, and universal metering was seen as an effective way of making people more aware of and more careful about their water use. It was also generally regarded as a fair and therefore acceptable way to charge. For others, they did not welcome it as it was felt it would increase bills for some customers and so risked "tipping people over the edge". It was perceived by some that now was not the right time to do this, with so many people already in debt because of increasing food and energy bills. Some stakeholders were cautious but positive; while there was concern about bill impact and affordability, this was balanced against a sense that universal metering made sense. It should therefore be introduced with care. Even a stakeholder whose "focus is people not environment" could see the value of universal metering for demand management, so long as customers were protected from unmanageable bill increases.

At the *Cambridge Water Stakeholder Roundtable October 2021* Stakeholders were also strongly in favour of universal metering for household customers as soon as possible, for several reasons:

- Because of the urgency of the situation, compulsion is now needed to reduce demand.
- Universal metering sends a clear message to customers about how serious the situation is and reinforces the value of water.
- It enables the use of tariffs that encourage more careful use of water, such as rising block tariffs. Tariffs were raised repeatedly during the group, and stakeholders strongly encouraged Cambridge Water to use them as an incentive mechanism.
- Finally, there seemed to be no good reason not to introduce universal metering. While affordability was a concern, this could be addressed through targeted support measures.

However, it was thought that metering might have only limited impact while water bills are low so would not be a panacea; other demand management measures would be needed too.

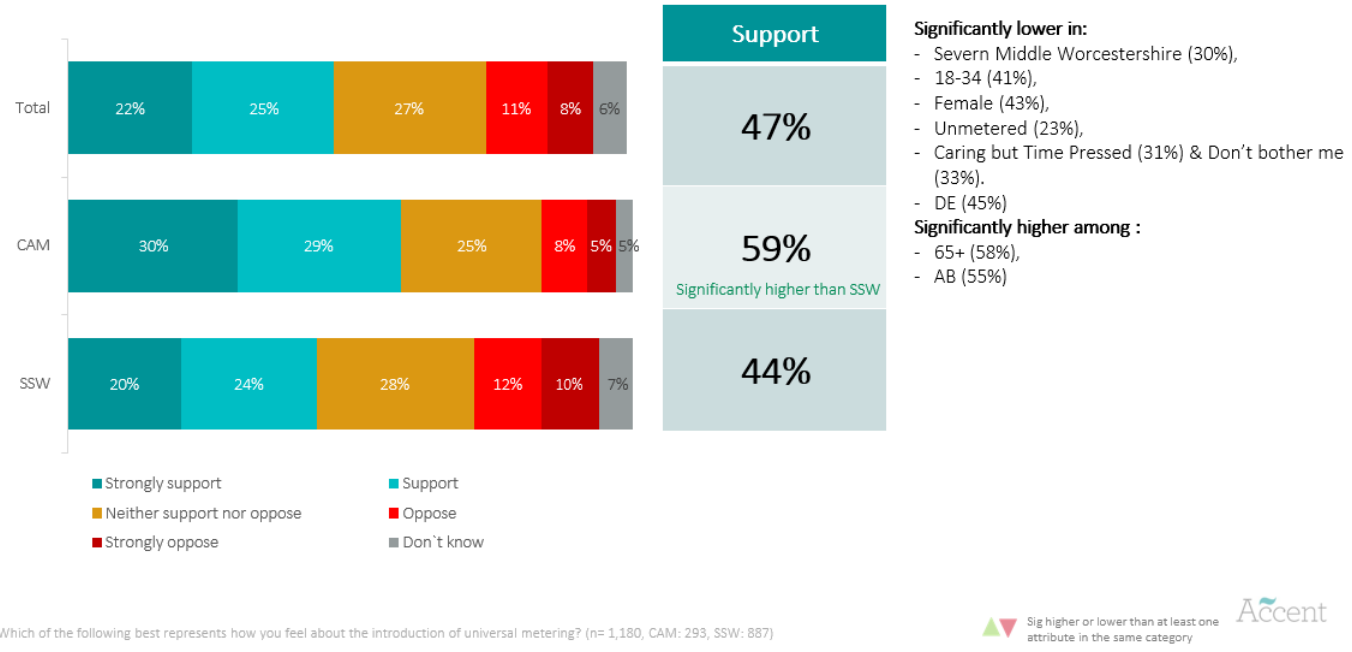
The SSC Deep Dives Report from November 2021 customers called for a universal metering programme to prioritise reducing the demand for water as quickly as possible. The majority wanted to see universal metering fully implemented in the next 10-15 years. There was agreement with the need to support customers through the transition, however, water companies need to consider how much customers are being asked to contribute. Recent energy prices rises have brought household bills to the forefront of peoples' minds and there is recognition that household budgets are being squeezed.). The focus should be on installing new meters (or retrofit and install new at the same speed) to support achieving this.

The *Customer Priorities Infographic – July 2022* showed that a full smart meter roll-out programme, so customers can receive regular information and comparisons about their water usage to help control how much water they use was expected only as part of an enhanced service to customers. Future 2050 essential/expected service should include use of innovative technology

to predict problems and/or quickly fix pipes, treatment works and pumping stations, to reduce wastage of water – e.g. use of artificial intelligence.

Accent's Quant Themes 1 and 3 Study - Mar 2022 found that amongst uninformed customers, just under half (47%) supported the introduction of universal metering, which was significantly higher in CAM compared with SSW and amongst metered customers (see Figure 10 for more information).

Figure 10: Uninformed perception of Universal Metering



Q44. Which of the following best represents how you feel about the introduction of universal metering? (n= 1,180, CAM: 293, SSW: 887)

Sig higher or lower than at least one attribute in the same category

Once informed, the support for universal metering increased (significantly) by 6%. Customer support was driven by 5 key reasons;

1. Greater equitability;
2. control and awareness;
3. the incentive to reduce consumption;
4. protecting the environment;
5. the potential to save money.

When considering options for a universal metering roll out programme having been provided with some education, 38% of customers supported the approach that minimises costs – a shift from previous Community Research qualitative work, where the highest level of support was to minimise the demand for water as quickly as possible (27% supported this approach in this study). Even when informed 37% were not prepared to pay any more to deliver universal metering. Of those who are prepared to pay more to deliver universal metering, customers in the Cambridge region (27%) were significantly more likely to pay an additional £4 per year to see universal metering delivered by 2035. SSW customers were most likely to support an extra £2.50 by 2050 (24%) Customers who supported universal metering were significantly more likely to pay for an additional amount (71%), while those who opposed this approached are more likely to opt for not paying any more (21%).

The *SSC H2Online Community Feedback – WRMP from late 2019 to early 2022* highlighted that saving money is a key selling point of 'smart' water meters in the South Staffs Water region, whilst in the Cambridge Water region it is the wider benefits of saving water through leakage detection and supporting the environment, as well as the convenience of automatic readings. In June 202, 52% of Cambridge Water community members (base 44) indicated that they felt metering should be universal for all customers, whereas only 32% of South Staffs Water members (base 47) shared this view. 43% of South Staffs Water members indicated that customers should have a choice when it comes to a metered supply and should have the option to switch back if they are unhappy; 18% of Cambridge Water members shared that view. In Feb 2021, when asked what SSW/CAM's metering policy should be, 30% of South Staffs Water members thought (base 27) water meters should be universal but starting with those with high water usage, compared to only 13% of Cambridge members (base 23). However, 57% of Cambridge members thought a water meter should be universal for all customer homes, compared to 26% of south Staffs members. In June 2021, members were asked what they thought the benefits of being on a water meter were, the most common positives included

monetary savings and being more conscious of water usage. However, those who were not on a meter already had concerns over the uncertainty of charges.

> *"I'm not currently on a meter, but have considered it before. I'm still unsure whether it is right for me as I keep hearing of these 'standard charges' that are included in your bill whether you have used the water or not, so I'm thinking, would it benefit me? Would I be paying more for water I haven't used? Still on the fence with this one"* SSW Member

There was only a little discussion about smart meters for business customers. *The South Staffs Water Stakeholder Roundtable feedback* found that whilst they were thought to be helpful for businesses proactively looking to cut costs, there was less interest from farmers who use several water sources (mains, abstraction, private water supply).

The water retailers consulted as part of the WRE NHH demand Club project Stage 1 stated that inaccurate data was a major barrier to encouraging water efficiency in the sector. Retailers felt it is difficult to promote water efficiency with the current data which was seen as poor quality, with meter readings repeatedly missed. Smart metering was seen as the solution and would be the simplest and easiest way to target and measure water efficiency. However, the cost of smart meters was prohibitive for smaller businesses and therefore investment support would be needed from wholesalers.

> *"Wholesalers don't know enough about meters - where they are, if they're broken etc. If they could deal with that we'd be well on the way to better water efficiency."* (Unassociated)

Severn Trent's Proactive Metering Research Report from late 2021/early 2022, summarised the perceived advantages of metering to be that it could work out cheaper (depending on household make up), meters were seen as way of ensuring that everyone will pay for what they use, they make people more careful about what they are using, they enable people to cut down wastage and to 'do their bit', provides accurate billing, could help to inform water companies and help detect leaks and it is a fairer way to charge. Perceived disadvantages were that it could work out more expensive (depending on household make up and life circumstances), customers might modify behaviour to the point where people are worrying too much about usage or feeling guilty, it could cause arguments in the home, there is hassle associated with having to read them, customers were unsure whether the customer pays to install plus added installation hassle, it could impact on where you can live or house sales, people would need to enter the home to service it (post COVID-19 concern) and that bills would fluctuate. When revealed that most water meters are not in fact smart, participants were clear that not being able to access the information in real time, for some, defeats the purpose of having a meter in the first place.

A more recent report from *Severn Trent in May 2022 Severn Trent environmental destination and compulsory metering* found similar conclusions to *Accent's Quant Themes 1 and 3 Study - Mar 2022*, in that amongst uninformed customers, half supported the introduction of universal metering, significantly higher amongst metered customers compared with unmetered. Once customers were informed with education on the topic, support for universal metering increased (significantly) by 8%. When considering options for a universal metering roll out programme, 49% wanted rollout to be undertaken as soon as possible and this was significantly higher amongst metered customers, middle social grades (C1C2) and those who do not report issues with paying their household bills. Significantly more customers supported the roll out of smart meters with the associated increase in costs compared to cheaper, non-smart meters (42% compared to 29%). 44% supported the rollout of smart meters by 2035. Monthly meter reads were the most preferred frequency for receiving meter reads (37%). There was no clear preference for replacement method (38% replace at end of life/40% before end of life).

The *Metering and Efficiency Research report from Relish, Welsh Water from October 2021* supported findings in SSC's region, in that unmetered customers were often open to more info and to their barriers being challenged. Most also expressed support for the fairness of paying for what you use, thus progressive metering offers a stepped approach to adoption without making meters compulsory. Customers recognised that better understanding their usage will help them reduce consumption, and they saw a potential role for smart water meters in helping achieve this. They did, however, harbour cost concerns and have high expectations based on energy smart meters, with (for example) IHDs, apps and real time info. Applying a tiered pricing tariff structure to control demand did not gain traction with customers, primarily because it was felt to penalise families and vulnerable customers. Although not ideal, reducing pressure across the network was often felt to be a preferable and fairer solution.

The GB wide study by *Artesia MOSL Enhancing Metering Technology report* published in April 2022 found that adoption of smart metering across all retail market regions would have the following benefits:

- For retail customers - accurate bills, based on consumption. Fewer complaints. NHH customers can make more informed choices about their retailer based on value-add services and should be able to switch more easily due to accurate bills speeding up the process. More opportunity for water efficiency, leakage will reduce, and bill shocks minimised.

- For wholesalers - Each transaction will be settled based on accurate consumption data. Improved visibility of consumption from each NHH meter, allowing sites with potential wastage or leakage to be identified, and this information will be shared with retailers. Opportunities to improve water efficiency and reduce leakage. Improved consumption data to improve demand forecasting and water resource planning. Improved consumption data for use in water balances and performance commitment reporting. Accurate consumption will also improve settlement calculations.
- For retailers - More accurate settlement and reliable cashflow, due to improved billing and settlement accuracy. Reduced costs for meter reading, and the opportunity to deliver a more efficient service. It will allow retailers to innovate and provide customers with the services they want. It should provide more confidence in taking on new customers.
- For the market operator - Improve market performance, allowing the market to be more outcome focussed. Provide a data rich environment to deliver value added insight and drive evidenced based improvements. It should allow the market to become more efficient.

The Artesia report also stated that enhanced meter technology exists now that can deliver the benefits via remote communications, daily metered consumption values from every meter, sub-daily consumption data to identify continuous demand which can reduce leakage or deliver water efficiency. Delivering enhanced meter technology in AMP8 is cost beneficial and will deliver benefits into the future. Enhanced meter technology could be delivered by wholesalers as a "low regrets" investment in PR24 to deliver long term benefits under a range of scenarios.

A recent report *Hafren Dyfrdwy WRMP Customer Research, in April/May 2022* showed that a majority of the sample felt positive about smart meters. They would be motivated to monitor use and (hopefully) save money. Many were unsure or had concerns, however, suggesting clear communication of potential benefits is needed.

Approach to fitting and retrofitting meters

Information gathered in the *Appendix A07 - PR19 data triangulation study - SSW WRMP* from 2017-18 found that the opportunity to revert to an unmeasured charge within the first two years of opting for a meter remains a vital policy to offer. Also, offering a guarantee that the customer will not pay more than their rateable value during this period would also give customers reassurance. This should be supported by targeted communication of any savings made during this period as a way to help overcome the main barrier that customers highlighted, the prospect of higher bills. This is particularly important to ensure vulnerable customers to not experience unwanted distress, particularly when moving home; and the evidence shows that a noticeable number of customers view smart metering as a potentially useful service to help them manage their water consumption more effectively. A pilot trial, including gaining customer feedback, of how best to approach a water smart metering roll out is required to ensure it delivers a solution that gives customers more control of their water usage – something they have called for throughout SSC engagement.

The *SSC Deep Dives Report from November 2021* which favoured bringing in universal metering within the next 10-15 years felt the focus should be on installing new meters (or retrofit and install new meters at the same speed) to support achieving this. Customers felt that this time frame is sufficient for South Staff and Cambridge to make the transition.

> *"we are running out of water the problem needs to be managed asap"* Cambridge Customers.

Those who thought universal metering should be implemented should be implemented in the next 25 years did so because they were more concerned about the cost of implementation if completed sooner.

Smart metering preferences

The *SSC Deep Dives Report from November 2021* said that most participants were willing to pay more to have universal metering implemented ahead of 2050 but may not have considered this in the context of all other proposed bill increases (relating to water transfers, more frequent information on usage etc). Cambridge customers were more likely to prioritise full Advanced Metering Infrastructure (AMI) as a roll out option than SSW. Cambridge customers also appeared slightly more determined to hold out against any bill increases than SSW customers (including support for vulnerable customers). Future customers were slightly more likely to prioritise AMI metering than current customers. Higher socio-economic grades were more reluctant to pay towards supporting vulnerable customers through the impact of increased water bills.

The *SSC WRAP online groups report February 2022* found that customers were surprised that there was only a small price differential between roll out of Automatic Meter Reading (AMR) (£3.50 per year) and roll out of AMI metering (£4.20 per year) by 2040. Cost was a prevalent consideration but once they were aware of the small additional costs of AMI as opposed to AMR, there was a strong preference for AMI. The need to educate and inform consumers about the change to smart meters was

highlighted. There was concern about the potential impact of changes on vulnerable consumers and frequent mentions of the positive impact on the environment. One Cambridge participant was very sceptical about the reasons for change (which has been noted as emerging in wider metering studies) and therefore such an emotional response needs to be factored into any communications about the introduction of AMI.

Cambridge region stakeholders reported in the *SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses March 2022* that there was strong and consistent support shown for smart water meters and more frequent data. Smart metering, Technology, Data insight – smart metering roll out was deemed to be a key enabler so all working with the same data. There was a need for more support and advice on business cases in how to make best use of resources.

In the *Accent's Quant Themes 1 and 3 Study - Mar 2022* monthly meter reads were the most preferred frequency (39%). In this study, customers were not shown the potential bill impacts of investments made, rather willingness to pay for particular service features (independent of one another) and found 26% of customers were prepared to pay an additional £2.50 per year for monthly or twice monthly meter read.

The *WRE NHH Final Debrief* reported that the idea of smart meters captures the attention of NHH customers as they like the idea of more accurate billing and not having to read a meter. However, the is some concern about the feasibility of installing smart meters in certain locations, such as rural farms. Other concerns raised in WRE NHH demand club project stage 1 included: SMEs finding a smart meter investment is not worthwhile and would need an incentive to install one. There was discussion about wholesalers supporting business customers with the investment as they also benefit from businesses installing smart meters.

Supporting low-income families who might struggle to pay their bills

In October 2021, *South Staffs Water Stakeholder Roundtable feedback* stated that universal metering should be introduced gradually, with care, to protect those who might be tipped over the edge by a rise in water bill. Stakeholders suggested some approached to help reduce the financial shock, including, not catching people off guard, SSW should educate customers on universal metering and introduce the concept slowly. Stakeholders also suggested offering financial help to avoid unmanageable high bills.

The *SSC Deep Dives Report from November 2021* concluded it is right to support the most vulnerable customers. Water companies need to consider how much customers are being asked to contribute towards supporting others struggling with paying their water bills. Recent energy price rises have brought household bills to the forefront of peoples' minds and there is recognition that household budgets are being squeezed.

Usage of "ghost" meters to encourage unmeasured properties to switch to a meter

The *WRMP Strategic Planning - 2021 22 report* found that the shadow "ghost" metering concept was seen as a positive and efficient way to increasing number of metered properties.

The *PR19 data triangulation study - SSW WRMP from 2018* underlined that the opportunity to revert to an unmeasured charge within the first two years of opting for a meter remains a vital policy to offer. Also, offering a guarantee that the customer will not pay more than their rateable value during this period would also give customers reassurance. This should be supported by targeted communication of any savings made during this period as a way to help overcome the main barrier that customers highlighted, the prospect of higher bills. This is particularly important to ensure vulnerable customers to not experience unwanted distress, particularly when moving home; and the evidence shows that a noticeable number of customers view smart metering as a potentially useful service to help them manage their water consumption more effectively. A pilot trail, including gaining customer feedback, of how best to approach a water smart metering roll out is required to ensure it delivers a solution that gives customers more control of their water usage – something they have called for throughout all our engagement.

The more recent *SSC Deep Dives September 2021 study* found the majority of customers across both regions (30 out of 40) believed that properties should switched to a metered charge within 6-12 months of a meter being installed. Waiting until a change in occupancy was not favoured by customers, the reasoning was because they believed customers might not attempt to change their behaviour if they are not planning to move and this option does not communicate the seriousness of the situations.

"I think 1 year would give people plenty of time to start and be more mindful of their water usage and monitor how they may use it different due to different times of the year." SSW Customer

However, in the *SSC H2Online community*, when asked 'what do you think of a potential new approach to increase water meter uptake?', ghost water meters were the least popular option (15% CAM, 21% SSW) compared with the 25% price cap guarantee. However, 40% of SSW customers said they would like a combination of both options offered.

"I selected a combination of both. A ghost meter fitted then a guarantee for two years on the price cap. I support the help for low income or people who have a medical need for more water" - SSW member

Offering a price cap and/or staggered bill for a period of a year to smooth the bill shock

In October 2021, *South Staffs Water Stakeholder Roundtable feedback summary* showed that stakeholders suggested a range of approaches to help reduce the financial shock. People should not be caught off guard by meters. Education (particularly in advance of starting a universal metering programme) and a slow steady approach ("drip drip") would help. Some customers would need financial help to avoid unmanageably high bills. A stakeholder with an environmental focus suggested that customers should be encouraged to cut their water use first, before being offered financial help.

New ways of charging for water and tariffs

SSC WRMP24 - WRAP Theme 1 research findings from June-August 2021, showed there was support for higher tariffs for higher users, but only if the system considers household size and composition. SSW customers, however, query how this would work for customer without a meter and how this could impact large households on low incomes and those with health conditions. SMEs didn't agree with this method for businesses.

> *"That would be understandable as it makes sense to me that customers who use more water should pay for more water. I would only think this would be unfair if this was also applied to low-income households who may not be able to afford the extra cost."* Cambridge Water, Future Bill Payer.

Some customers suggested offering lower prices for less use would be a better method, using this as an incentive for behaviour change.

The *SSC WRAP online groups report - Feb 2022* found that on the whole, individual tariffs were more appealing than a community tariff but a Community Tariff should be considered if that is the only option available. Time-based tariffs were least popular of the individual tariffs as they were perceived to be least likely to result in behaviour change as so many water-based activities are anchored to morning routines. Respondents found it difficult to choose between tariffs based on usage without knowing more about costs involved. With either option challenges were identified with educating customers about the 'acceptable' water usage limit.

In October 2021, the *Metering and Efficiency - Research report from Welsh Water* concluded that applying a tiered pricing tariff structure to control demand would struggle to gain traction with customers, primarily because it was felt to penalise families and vulnerable customers. It could however benefit non-working households and home workers who can load shift. Although not ideal, reducing pressure across the network was often felt to be a preferable and fairer solution.

Other smart technology

The *PR19 Foundation Research - Full Report from June 2017* stated that longer term, there was an expectation for increased investment in technology, improved education, and measures to address future demand. Younger customers in particular wanted SSC to help them manage their own usage (and costs) via smart technology, devices and real-time information.

The *SSC Customer Priorities Tracker - Qualitative wave 2 Research - May 2022* explored expectations of future technology and found that long term priorities include as an enhancing factor, that customers expect SSC will be much more imaginative in their use of technological solutions for example, no flush toilets, predictable usage apps, water efficiency devices, real time/instant service support, water recycling technology, innovation that addresses carbon emissions and water leakage detection and prevention.

Behaviour Change

The *WRMP Full Report - Oct 2017* stated that over half of customers agree they could do more to reduce water usage. A lack of awareness that a water shortage is likely in future, meant that many saw no reason to reduce their usage. Both passive and proactive education and support were welcomed. Although most customers said they thought water is a precious resource, many did not seem to reflect this in their behaviour. It was concluded that more work was needed to raise water consciousness.

Later that same year, the *Appendix E - customer research findings summary - CAM WRMP* summarised a positive start to the WaterSmart trial when providing customers with water saving recommendations in their homes and gardens. The effectiveness of these water savings recommendations was monitored over time to help guide SSC's approach to how best to support customers to use water more wisely.

The *Blue Marble water usage in the garden Final Report* from August to September 2021, focussed on water usage in the garden in various water company regions (not including SSC customers). This report showed that respondents found it tricky to remember exactly how many times they used water in the garden over the 6-week period. This was especially true for watering the garden, where most over-estimated the frequency that they did so. Many claimed to have a more strict and regular watering routine than what they carried out. Few really followed a strict routine and watering the garden was a sporadic behaviour during the observed fieldwork. It was often done when: the customer found themselves at home with time on their hands; the weather was particularly hot, and crucially, sunny, or when they happened to notice the plants looking dry or unhealthy. Among the participants who gardened, all said that they gardened a similar amount at that time to pre-pandemic, suggesting that garden water usage patterns at that time ought to be similar to pre-pandemic behaviours.

Most customers felt that they were *capable* of reducing the amount of water that they use in the garden. Barriers were low awareness of water scarcity and more water efficient ways to conduct regular behaviours and reducing water usage may make certain tasks more time consuming e.g. cleaning car/patio. There was often seen to be a key gatekeeper to garden water usage i.e. the main gardener. The downsides of water saving were perceived to be less fun and that it made tidiness more difficult. There were few perceived advantages i.e. there was low awareness of cost benefit or environmental benefits to using less water.

Another report from *Blue Marble, the WRE: Club Customer Engagement report* highlighted too that customers need to be empowered to help, by reducing their water use: consumers and stakeholders agree that communication is vital. Much of the public do not know there is a problem. There is little to motivate them to reduce demand. Potential for restrictions in a drought does not appear to trouble people (who approach the prospect with new post-pandemic resilience). The water sector's perceived silence on the risk of supply shortages suggests that the problem is not real/immediate.

The *SSC Deep Dives Report from November 2021* highlighted that metering is strongly believed to encourage behaviour change and is considered the fairest way of paying for water by customers. Similarly, the SSC WRAP online groups report from Feb 2022 found that customers believed that having real time information would change behaviours (as it has for some of those with smart energy meters).

The *SSC WRAP online groups report - FINAL - Feb 2022* noted there may be a difference between claimed and actual behaviour change as a result of smart metering. People find it notoriously difficult to predict how they will behave in the future.

The *UEA-CBESS-22-01 - behavioural change report January 2022* contained several considerations relating to behaviour change that could be adopted by SSC. Long-term change and increased adoption of new behaviours can be inspired by exploring new forms of interventions like environmental restructuring and modelling. Interventions can be designed and targeted more precisely with the support of more preliminary research and the use of best practice derived from primary or academic research. The benefits of interventions can be improved by including reinforcement of the newly introduced behaviours, supporting long-term behaviour changes. There is a good foundation available for identifying and adopting new methods of data collection and impact analysis to formalise and streamline the process of impact assessment. A sizeable majority of interventions surveyed were delivered via standard communications channels and would have benefited from some underpinning research or evidence base. Trial runs, and measurement of outcomes in terms of changes in behaviour could also have helped optimise the interventions, increasing the likelihood that investment made in the larger roll out would be successful. Research shows that these one-off `fire and forget' interventions are unlikely to result in significant success. Further, they miss an important opportunity to build a knowledgebase and community of practice in the sector, in which successful interventions can propagate more widely, while unsuccessful ones can be examined to understand behaviour better and improve the design of future ones.

The *SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses*, from March 2022, felt that best practice sessions to share case studies of success stories would be helpful. It was viewed water was a key part of the conversation around strategic planning, quality of life and attracting business investment in Cambridge. There was a call to explore opportunities to link water and energy savings. Multi-utility link up could work but that depends on the building usage and how much water is used (link to occupancy) and potentially new build incentives to harvest water. If there was a price rise in the cost of water, then more effort is put in place to reduce usage.

Golden Threads: Demand side options

Golden Threads	**The need for customer information and engagement**	*Leaks*: those on customer properties are unlikely to be effectively addressed without an education programme to gain customer cooperation. *Water recycling*: customers are positive about this but again, education is important to encourage their involvement. Education and good information are clearly strong potential drivers of behaviour change.
	Call for collective responsibility and fairness	*Leaks*: customers feel strongly that this should be addressed, but they were reluctant to pay for this on bills. *Water recycling*: subsidies for retrofitting systems will be a key requirement to encourage adoption *Metering*: generally regarded as a fair basis for charging, particularly among those who already have them and among future customers. Cambridge household customers were slightly more in favour than those in South Staffs region, though both regions generally positive towards universal metering. Targeting areas of higher consumption should be the priority. Accurate billing is also important among NHH customers to encourage a sense of fairness.
	Concern for the environment	There was generally low awareness of the environmental benefits to using less water.
	Protection for vulnerable customers	*Metering*: there are concerns about how to move all customers to universal metering, including the costs for vulnerable customers. As long as these are mitigated and introduction is gradual to prevent unaffordable bill increases, there is majority support for universal metering.
Emerging thread	**Cost of living**	*Leaks*: opposition towards paying for this has been exacerbated by financial hardship since Covid-19, which is likely to continue with the cost-of-living crisis. *Metering*: acceptance is dependent on the balance between reducing demand and the potential extra costs to some customers. SME customers were slightly less positive towards universal metering as there were concerns over bill increases.

9. SOURCE PREFERENCES, RESERVOIRS AND WATER TRANSFERS

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Research Objectives
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions	June-August 2021	HH Future SME	47 Customers HH (28), future (9) and SME (10) customers	To explore household customer, future customer and SME business customer preferences in terms of: •Environmental ambition •Levels of service/resilience ambition •Water efficiency ambition: leakage/PCC/metering •Best value planning criteria To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 85 (CAM 20, Essex & Suffolk 20, Anglian 40, plus 6 in-depths) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).
SSC Deep Dives Report FINAL 04.11	South Staffs and Cambridge Water: Findings from the WRAP (Water Resources Advisory Panel) DEEP DIVES on universal metering and water transfers (Community Research) – November 2021	November 21	Bill-Payers Future customers Small businesses	87 Total Forum 1: 47 Total CAM: 25; SSW: 22 Billpayers: 28; Future: 9; Small business: 10 Forum 2: 40 total CAM: 20; SSW: 20 Bill payers: 26; Future: 6; Small business: 8	To explore household customer, future customer and SME business customer views in depth on; universal metering and water transfers.
Severn Trent WRMP24 Report	Severn Trent Water – WRMP24 Report (DJS Research) – May 2022	November 2021 February 2022	HH and NHH customers	624 HH, 149 NHH	Measure customers' preferences for water resources, levels of service and the options or plans that Severn Trent might create to address any changes to levels in service or to address a supply-demand deficit. To develop a Best Value Plan in line with Water Resource Planning guidelines.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Research Objectives
SSC Quant MCDA Study - Feb 2022	SSC WRMP: MCDA – Quantitative Insights (Accent) – July 2021	20th December 2021 to 4th March 2022	HH and NHH customers	1,015 online interviews: 570 with SSW and 445 in CAM, 887 HH, 128 NHH	Explore customers' attitudes and views regarding the natural environment and SSC's approach to planning.
SSC WRAP online groups report – FINAL – Feb 2022	South Staffs and Cambridge Water – Findings from the WRAP (Water Resources Advisory Panel) Focus Groups on options relating to metering, tariffs and water transfers (Community Research) – February 2022	February 22	Bill-Payers Future customers Small businesses	11 Total CAM: 5; SSW: 6 Bill payers: 9; Future: 1; Small business: 1	To explore the following topics with online groups; metering options (covered in both regions), new types of tariffs/incentives (SSW only), water transfer options (CAM only).
Hafren Dyfrdwy WRMP Customer Research	Hafren Dyfrdwy Water Resources Management Planning: Customer Research Debrief (Blue Marble) – June 2022	April and May 2022	HH NHH Future customers Digitally Excluded	35 Total 4 future customers; 20 HH customers; 6 NHH customers; 5 digitally excluded customers.	To understand HD customers' views of the initial WRMP proposals. Specifically, to gauge; response to proposed use of water restrictions, response to proposed ways to reduce demand, response to proposed use smart meters, response to plans to meet the new leakage targets, response to plans to use water transfers, and response to plans to support private supply households.
Britainthinks: Water Club Changes of Source	June 2022Water Club: Changes of Source Full Report (Britainthinks) – June 2022	June 2022	HH NHH	Qualitative Phase: 98 HH Quantitative Phase: 1,762 HH, 198 NHH	To review existing evidence. To identify and fill knowledge gaps about attitudes towards water source change. Provide a clear and actionable framework for water companies to use when communicating water source changes in future.

Overview

Expanding provision via reservoirs is one area where there was a regional difference; customers in the Cambridge region put a new reservoir as a top three priority when asked to rank a range of demand and supply side options, whereas in the South Staffs region expanding existing reservoirs was only ranked 5th and therefore seen to be less of a priority to meet demand in this way.

Customers are often concerned about how reliant SSC could become on other suppliers and some think water transfers should be a last resort, as this could affect other suppliers' resilience. They want to be informed about when transfers may happen and if there will be any effect on the quality of the water they receive. Customers were spontaneously concerned about the effects this might have on the environment, and the CO2 emissions especially provoked a strong reaction.

The value placed on new reservoirs

Customers from *SSC WRMP24 WRAP Theme 1 (August 2021)* engagement stated that building new reservoirs felt like good long-term planning despite the expense.

> *"I thought that the reservoir would be a good long-term investment which will benefit the area for many years and provide a large water source although I do understand it is a very expensive project." Cambridge customer*

The *WRE: Club Customer Engagement report* found that 37% of customers selected seeing more reservoirs to store water as part of their top three supply or demand side options they would most like to see included in the business plan. Views in support of reservoirs were often quite vague and generic: customers simply felt they are a 'good idea that works', rather than being able to cite a more specific reason. Equally, many did not feel any strong arguments against this option. Many felt that using water from reservoirs would be less damaging to the environment than creating water through other initiatives, and that the structures

themselves would provide a habitat for local wildlife. Reservoirs were appealing as they also create attractive community assets that can be used for leisure. For the 15% who placed creating more reservoirs in their least favoured options for the business plan, they were concerned that construction would harm wildlife and destroy habitats. Others were put off by the disruption of their construction, the high cost which would have to be paid for by local people and the large amounts of land required. The latter was a particular concern for the Cambridge and Essex & Suffolk regions, which have high population density. Whilst some found the low running costs attractive, others felt the expensive construction meant reservoirs were not a viable option. Finally, many questioned whether this option which relies on rainfall is sensible in the context of climate change.

In *the SSC Quant MCDA Study - Feb 2022*, the Cambridge region placed building a new regional storage reservoir as third top priority for household and non-household customers alike, with 11% overall selecting it as a priority. Increasing the size of an existing reservoir was ranked 5th in the SSW region, with a slightly lower proportion (8%) selecting this as a priority.

Engagement in the *Severn Trent WRMP24 Draft report* showed customers placed value on reservoirs, with seven in ten households having visited a river, lake, or reservoir at some point and a third (34%) having done so in the past year. Those who have an annual income of over £60,000 were more likely to visit these sites, suggesting that visiting these sites may be unaffordable to those on lower incomes, especially if travelling long distances is involved.

In the Severn Trent region, when household customers were asked about supply options; 'increasing the size of reservoirs' was the second most important supply option to them. 'Recycling or re-using water indirectly' was ranked first for these customers and 'Maximising the outputs of current treatment assets' was third. For non-household customers 'increase the size of existing reservoirs' was the most important supply options. 'Increase capacity of water treatment works was ranked second and 'Maximise the outputs of our current water treatment assets' was also ranked third.

Customer concerns about bringing in new water sources to meet the long-term supply/demand side balance

Customers who took part in the *SSC Deep Dives, October 2021,* understood from the materials shown that water is in short supply and even though most would advocate for reduced demand, they are accepting of supply side options. Water transfers are sent as a binding agreement between two parties which should not be entered lightly, customers do not want their region to become over dependent on water transfers and so expect all eventualities to be considered before agreement is made. SSC need to consider the fairness of the approach and how to communicate potential benefits of water transfers to customers living in donor areas. Cambridge Customers who took part in the SSC WRAP online group research had similar thoughts; they showed concern about resilience on another water company, would other companies have resources available for them is they needed it? They also wanted to know if SSC has done everything else in its power to avoid needing these options, i.e., have they considered water recycling options?

Hafren Dyfrdwy WRMP Customer Research Debrief found a majority of customers support water sharing, if there is sufficient water in the region. Customers need reassurances that this would not put customers in detriment during a drought. However, a minority of customers think this sounds like an extreme measure.

Would customers be concerned if their water quality changed from underground source only to one that mixes in surface water or changes to only surface water?

Cambridge customers in the *SSC WRAP Online Groups* showed concern over the quality of the water changing from using new sources asking; 'Will the water quality and taste be affected?' and 'Will customers be told that water transfers will be happening?'

Britain Thinks Water Club: Changes of Source looked into the attitudes concerns of customers regarding water source changes; sources included:

- Water recycling
- Desalination
- Water transfers and
- Reservoirs

Key concerns for customers about water recycling included safety, quality and the environment. Many customers focused on the 'yuck' factor of this and found it hard to overcome. When educated more, customers expressed concerns about the energy intensity of the process and the high carbon emissions.

Desalination is a less-well know water source compared to others and felt that it was only suitable for emergency situations due to the intense construction and running processes.

Customers had concerns about water transfers in terms of comprehension issues and worries about quality and the environment. Yet, this was favoured more as an option as it was a logical solution to water scarcity.

Finally, reservoirs are more well known as a water source in the UK which is reflected in more positive attitudes towards them. The main concern for customers is in terms of cost.

The study also found customers had low engagement with topics related to water stress, customers were more likely to engage with source change information when it relates to the impact it has on them as a customer. This included quality, taste, characteristics and properties of water coming out of the tap. Customers were most concerned about the effect water source change will have on hardness, taste and the impact on their bills. Customers want clear information about what will and will not change in terms of these areas.

Preference for particular types of water transfer

SSC WRAP online groups (Feb 2022) were shown four water transfer options:

- **Option A:** Cambridge water takes a treated supply from a neighbouring company and pay the company the relevant commercial bulk supply costs for the water.
- **Option B**: Raw (untreated) water from regional resource (reservoir) is treated as a shared treatment works, between one or more water company. Treated water is transferred from the shared water treatment works into CAM area of supply and distributed through existing pipes and networks.
- **Option C**: Like option B, the difference being CAM fully owns the treatment works rather than sharing.
- **Option D**: Cambridge Water develops a supply outside of its supply area on its own (not a shared resource) and transfers this to its customers

Option B 'development of shared assets' was preferred by most; this was because this option was viewed as providing sufficient security and control whilst being lower cost than the other options. However, there was concern that it may not be sufficient to provide future needs. And although option C was similar to B, customers felt that the lower costs of sharing (B) outweighed the control advantage of C.

Customers also liked option D, with one customer feeling strongly that this option would future proof the strategy. This option also resonated with other customers; however, they flagged concerns about costs in the current climate and time it would take to get up and running. Timelines were explained to customers, yet they still assumed this option would take the longest time to implement.

Customers had concerns about the reliability of supply in Option A, they felt that this was a temporary, stop-gap measure and there were concerns about environmental control. However, customers did spontaneously identify and accepted that this type of transfer may need to happen whilst longer terms options were put in place.

Customer spontaneous views of water transfers and how these changed when informed

During the *SSC Deep Dives*, Cambridge participants seemed surprised to find out how reliant their area might become on water transfers in the future. As the forum progressed and after further education on the challenges faced to meet future demand and protect the water environment, these participants understood that they will become reliant on transfers which saw some increased levels of acceptance. However, Cambridge customers had markedly lower levels of agreement with various conditions associated with transfers than SSW participants. Concerns included environmental impacts, companies not being self-sufficient and becoming over reliant on other companies.

> *"I am even more convinced that water transfers are an unacceptable way of dealing with water shortages. Particularly the CO2 emissions and ecological impact of water transfers are something that is to be avoided at all costs."* Cambridge customer

Cambridge participants in the *SSC WRAP online groups* immediately associated water transfers with the transfer of treated water from another water company on a commercial bulk supply basis (Option A), and therefore, transfers were felt to be a stop gap or short-term fix rather than associated with planned supply options.

Furthermore, the *SSC Deep Dives and Cambridge Water WRAP online group* both had spontaneous concerns about the environment, both in terms of the constructions of pipelines and transfer of non-native species. The CO2 emissions linked to water transfers provoked a strong reaction. Customers want SSC to give reassurances about the environmental impact of water transfers.

Who do customers think should pay for water transfers?

Cambridge water customers in the *SSC WRAP Online Group* had some misapprehensions about how costs would be applied during water transfers and the frequency of use. There was some presumption that water transfers would just be used at times of high demand and paid for only at those times. Similarly, the minority of Hafren Dyfrdwy customers thought the idea of water sharing sounded costly.

The literature reviewed did not provide evidence to inform who should pay for the water transfers. This should be an area of focus for future research to inform WRMP24.I

Golden Threads: Source preferences, reservoirs and water transfers

Golden Threads	**The need for customer information and engagement**	Customers want to be informed about when transfers may happen and if there will be any effect on the quality of the water they receive.
	Call for collective responsibility and fairness	Reservoirs are seen as offering amenity beyond their contribution to the resilience of supply, being a popular leisure destination open to all. However, the cost of travelling to these locations may be a barrier to lower income households. Water transfers were generally accepted as a short term, practical way to meet shortages, but an acceptable solution in the long term. The practice must be seen to be fair and potential benefits communicated to customers living in donor areas.
	Concern for the environment	While water transfers were tolerated, one concern was that it should not reduce the quality of service in other regions or threaten the quality of the environment in either the donor or recipient supply area.
	Protection for vulnerable customers	There were no specific points relating to vulnerable customers, but it is important to maintain good quality supply for all customers, evidenced primarily in terms of the taste and smell.

10. ACCEPTABILITY AND AFFORDABILITY OF WRMP24 PLANS

Bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Research Objectives
New-Pin Looking to the long term report - Sustainability First	Looking to the long-term: Hearing the public interest voice in energy and water – Eight agendas for change (Sustainability first)	2015-2018	N/A	N/A	This report summarises the work carried out by Sustainability First's New Energy and Water Public Interest Network (New-pin) between 2015 and 2018.
PR19 Foundation Research - Full Report - June 2017	Foundation Report – Qualitative Findings: Full Report (Accent) – June 2017	May-June 2017	Household Non-Household	93 Total: HH: 70 NHH: 23	To understand customer priorities for service delivery both now and over the longer term (prompted and unprompted). And to check these against previously established priorities in PR14 work.
Appendix E - customer research findings summary - CAM WRMP	Appendix E Customer Research Findings Summary – Cambridge Water – Water Resources Management Plan: Appendices	2017-2018	Household SME Future	Total: 7000+	n/a
Appendix A07 - PR19 data triangulation study - SSW WRMP	PR19 data triangulation study - SSW WRMP	2017-2018	HH and SME customers and future customers	9000+	n/a
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic Decisions (Community Research) – August 2021	June-August 2021	Household Future SME	47 Total: HH: 28 Future: 9 SME: 10	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria. To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.
WRE: Club Customer Engagement report	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	September 2021	HH, NHH, Stakeholders	HH: 20 (CAM 5, Essex & Suffolk 5: Anglian 10) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Research Objectives
					preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).
South Staffs Water Stakeholder Roundtable feedback summary	Stakeholder Roundtable Feedback – South Staffs Water (Community Research) – October 2021	Oct-21	Attendees from councils, Citizens Advice, Natural England, Waterwise and consumer industry representatives.	8	To consider stakeholder views at a formative stage of the plan development process.
Cambridge Water Stakeholder Roundtable Full Report - October 2021	Stakeholder Roundtable Feedback – Cambridge Water (Community Research) – October 2021	Oct-21	Attendees from a wide range of organisations, including local environmental and river groups, national environmental organisations, a water retailer for businesses, a social housing provider, a local authority planning department, a university and an MP	18	To consider stakeholder views at a formative stage of the plan development process.
SSC Customer Promises Tracking 2021 22 Annual Report	South Staffs and Cambridge Water Customer Tracking Research Report 2021/22 (Turquoise) – April 2022	Report dated April 2022 Rolling monthly interview programme	Household Non-Household	1,106 Total: HH: 814 NHH: 292	To monitor ongoing customer satisfaction against the key metrics that engagement has shown to be important to customers; these include hard and soft measures. To deliver on-going customer sentiment tracking against key brand statements. To probe awareness and usage of key services and track changes in the way customers wish to interact with SSC. To monitor and track the impact of Covid-19 pandemic on customers – new objective added in 2020/21.
SSC household affordability income analysis - June 2022	SSC Household affordability Income Analysis – June 2022.	June 2022 (reviewing data since 2021)	Household	4,419 Total: HH tracker: 800 From other SSC surveys: 3,619	To track a range of key service related and brand metrics each year, such as customer perceptions of "affordability of water bill"
Feedback on draft Water Resources Management Plan 2024 from the WRAP	Feedback on draft Water Resources Management Plan 2024 from the WRAP	Jun-22	Water Resources Advisory Panel - billpayers, future customers and SMEs	CAM: 13, SSW: 13, Billpayers: 18, Future customers: 2 and SMEs: 6	An online forum with participants designed to get feedback on the draft WRMP24 (from informed customers) before it is submitted

Overview

Stakeholders are concerned about affordability of water bills, especially due to high levels of deprivation in the South Staffs Region and the current cost of living increases. They agree that current customers should pay for future plans, but these customers need to be protected and prepared for any future bill increases. Customers generally find their water bills good value for money, but again the cost-of-living crisis is a concern especially with the current energy bills being so high. Cambridge customers tended to be less satisfied with value for money than South Staffs customers.

What is driving acceptability or lack of acceptability of the BVP plan?

According to the *New-Pin Looking to the Long-Term report, in 2015*, 11% of households in England and Wales were at risk of affordability problems in water. In 2017, the PR19 Foundation Research found that while the current bills were seen as value for money and SSW/CAM are seen as financially responsible, customers were keen to ensure that the plans incorporate the need to ensure affordability in what they perceived as an economically uncertain future.

Appendix E – Customer Research Findings Summary delved into the acceptability and affordability of plans in 2018, were customers showed strong support for plan. 82% of customers found the plans acceptable (81% South Staffs, 83% Cambridge) and 73% found them affordable (72% South Staffs, 74% Cambridge). When testing acceptability of the proposed performance commitments, high levels of comprehension of the definitions was found and nearly two thirds of all participants found all of the proposed targets sufficiently stretching, which could be the driver of the acceptance levels.

Customers who attended *SSC WRMP24 – WRAP Theme 1 Forum* (August 2021) saw their water bill as good value for money. They were most comfortable with bill increases for fitting more meters and educating customers; however, they were least comfortable with bill increases to reduce the frequency of restrictions. Yet, SMEs had stronger support for investing to reduce restrictions because their business could be affected. Customers were generally accepting of paying for future generations, but had mixed views for other regions. The mean average acceptable bill increase was approximately £20. Cambridge customers maximum acceptable bill increase per year was £120, but for South Staffs customers, this was only £70.

SSC Customer Promises Tracking 2021-22 found that Household satisfaction with value for money had fallen by 4pp to 65%; yet affordability rose 8pp across the region to 79% (79% South Staffs and 80% Cambridge), this is a positive finding especially given the current cost of living increases.

Furthermore, satisfaction with value for money in South Staffs region was 67% compared to 61% in Cambridge. Customers in the high social grades of A or B were significantly less satisfied with value for money (58%) which may explain the difference between the supply regions, with Cambridge Water having larger proportions of customers with higher social grades. Female customers were significantly more satisfied (71%) than males (60%).

The *WRE: Club Customer Engagement report by Blue Marble in September 2021* summarised that concerns over affordability were heightened post Covid. Plans should be fair and affordable for all, and everyone was worried about rising costs. Inequalities highlighted by the pandemic created a more 'citizen' mentality where it was important to protect lower income/poorer customers, however, stakeholders (and some NHH) believe water is (too) cheap and under-valued. The need to protect the economically vulnerable was undisputed.

At the *South Staffs Water Stakeholder Roundtable* (October 2021) affordability was raised repeatedly due to the high levels of deprivation in the South Staffs region and the high profile of water poverty, stakeholders who work with customers who have financial problems were most likely to raise this issue. However, Affordability was also mentioned by stakeholders with an environmental focus. Stakeholders were keen for South Staffs to be as ambitious as possible to protect the environment and water supply but stressed that this needs to be balanced against what customers can afford. It was suggested that environmental improvements should be made slowly to protect struggling customers from steep bill increases that they couldn't afford with the cost-of-living crisis. If bills do need to increase, stakeholders want South Staffs to protect and prepare struggling customers.

SSC household affordability analysis found that during 2021/22, households with an income level of £16,380 to £23,000 were least likely to agree their water bill is affordable - 71% - with 14% disagreeing with the statement, the most of any segment.

Do customers find the SSW/CAM WRMP draft plan acceptable in the context of WRE/WRW?

The literature reviewed did not provide sufficient evidence to inform this objective. This should be an area of focus for future research to inform WRMP24.

Customer views between the least cost and preferred BVP

The *WRE: Club Customer Engagement report by Blue Marble* in September 2021 found that customers were largely accepting of the idea of the best rather than the cheapest. And although it may not be the cheapest it may be better value for money overall because solutions are not a quick fix. However, it is noted that the terminology can be confusing to consumers as 'best value' in other contexts means the cheapest and they don't always equate the idea of best value plan as affecting customer bills directly. Lower socio-economic groups (C2DEs) tend not to be aware that investment choices impact their bills.

Golden Threads: Acceptability and affordability of WRMP24 plans

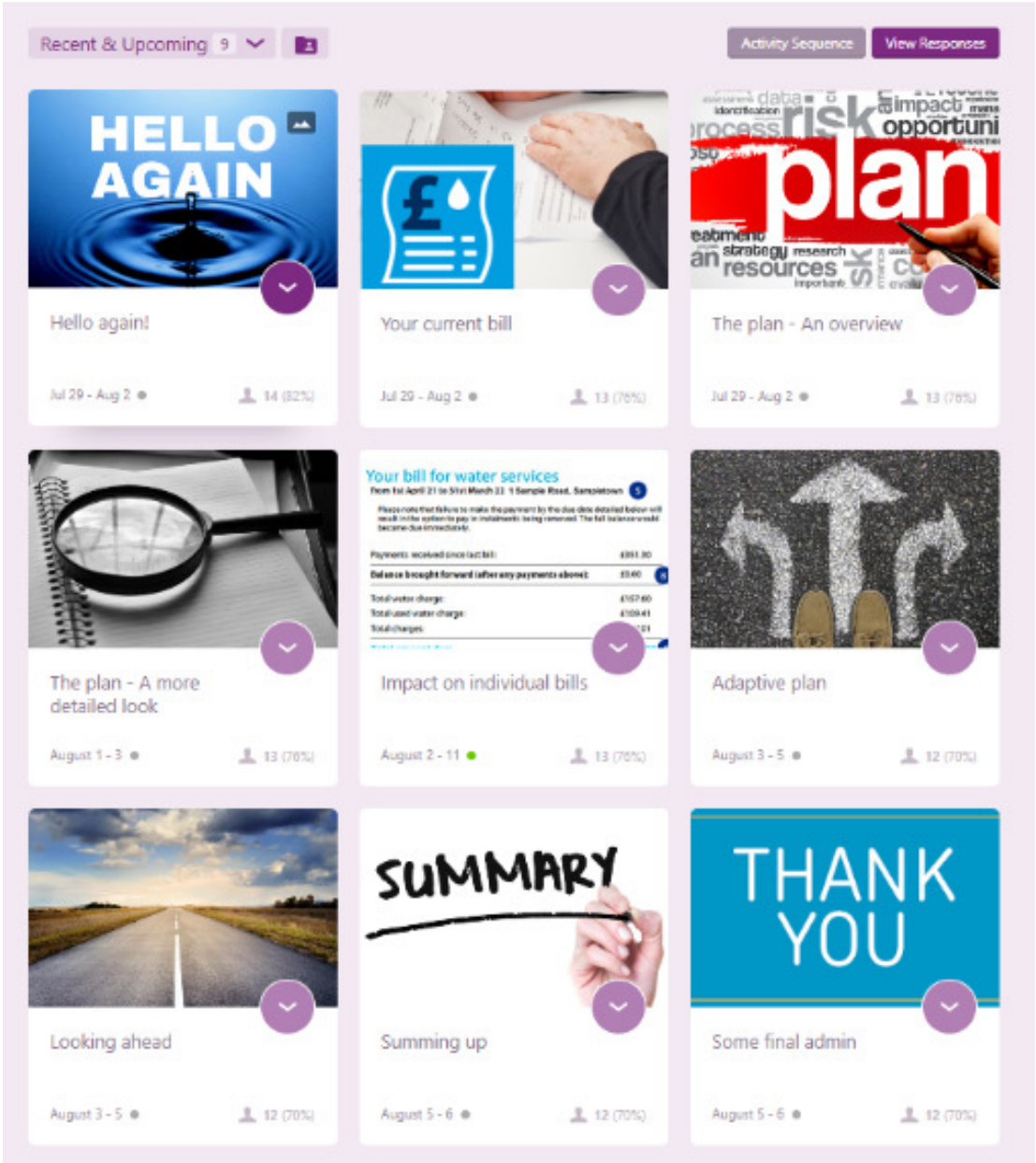
Golden Threads	**The need for customer information and engagement**	Perceptions of 'Best value' are affected by how stakeholders understand the investments that are being made and how this benefits customers, now and in the future, so in this respect information, and engagement as important as ensuring that bills are perceived as reasonable.
	Call for collective responsibility and fairness	There is wide acceptance among stakeholders that the responsibility for future investment should be shared by current customers in the form of paying for that investment now, but it should primarily be focussed on their region. The perceptions that water bills offer good value for money is a good basis for this support currently, but the cost-of-living increases and how its impacts are distributed across consumers will potentially challenge this in the immediate future (see emerging thread below).
	Concern for the environment	A consistent theme is the observation that while stakeholders generally recognise the importance of environmental ambition and the pressing issues related to climate change, immediate concerns loom larger, notably in the form of the rise in the cost of living and the diminishing ability of current customers to pay for long term investment.
	Protection for vulnerable customers	Customers and stakeholders clearly recognise the importance of assisting low income and vulnerable customers. They also recognise this as an important responsibility of SSC, and by implication, many accept that this must be paid for through all customers' bills.
Emerging thread	**Cost of living**	The area of plan acceptability and affordability naturally highlight the cost-of-living increases most strongly, suggesting heightened awareness among customers and stakeholders of the need for good value investments balanced against the potential need to defer some longer projects if this will release resources to address the current needs of customers.

Early acceptability testing of WRMP24

The WRMPs in both of SSC's regions have been developed in line with customer preferences over time, and at this time a draft plan has been tested qualitatively with customers and early results are available in the *Feedback on draft Water Resources Management Plan 2024 from the WRAP*. The plans in both regions will be fully tested quantitatively and qualitatively in 2023 and the results incorporated into a revised version of this review.

The qualitative testing via the WRAP forum provided participants with a series of tasks to complete online, including polling questions, written tasks and self-generated discussions (see Figure 11. Participants were also invited to comment on each other's posts to generate discussion amongst participants on the key topics. In one of the final tasks, the emerging findings were shared with participants to gauge their reactions to the wider group view. This was a way of increasing engagement and a response to learnings from the first Forum.

Figure 6: Overview of group discussion topics used in Feedback on draft Water Resources Management Plan 2024 from the WRAP



Golden threads

One area to flag from this report is that the key themes (golden threads) running throughout the research programme are still evident (see Figure 7) in the draft plan presented.

Figure 7: Golden threads evident in Feedback on draft Water Resources Management Plan 2024 from the WRAP

Transparency and engagement to understand context for and impact of any proposed changes.	A focus on fairness and collective action/sharing resources.	A strong desire to take action sooner rather than later. Generally driven by concern for the environment.	A wide, but not universal, call to protect vulnerable customers.
• Participants stress this will be key, if the plans are to be accepted by a wider set of customers.	• Appears to be reflected in the willingness of most South Staffs customers to contribute towards the cost of delivering the major supply options in the Cambridge plan.	• Concerns for the environment is still very evident and a number of participants want to know why the plans cannot be implemented straight away. However, some participants believe that affordability may have become the more pressing issue.	• This is perhaps even more top of mind, given the current economic climate

11. REGIONAL DIFFERENCES

Throughout this review much common ground has been found between the two regions and the majority of studies conducted by SSC covered both regions. However, there were some themes throughout the review where consistent differences emerged between the two regions and these are noted below in order to highlight considerations required for WRMP planning in each region:

Best value planning and investment priorities

The *Accent Quant Themes 1 and 3 Study - Mar 2022* delved into how SSC should balance various investment priorities and SSW customers overall slightly favoured keeping bills as low as possible for customers above all else. Cambridge customers as a population were more evenly split between keeping bills low and investment into other areas.

Environmental destination

Cambridge customers were more likely to value environmental factors highly and therefore prioritise the environment, in spite of the cost-of-living impacts seen in 2021-2022. Additionally, the Cambridge region tends to place more value on environmental factors compared to South Staffs Water region, the environment has stayed higher up the priority list and Cambridge customers tend to be slightly more in favour of a faster timetable of delivery of their preferred level of environmental destination.

The *SSC WRMP24 - WRAP Theme 1 research findings 2021* found that customers preferred an ambitious target with regards to the environment, in spite of this being the most expensive option. This was particularly the case in the Cambridge region where there was more detailed knowledge about water environment problems and more support for ambitious targets compared to South Staffs.

When asked in the *SSC WRMP24 - WRAP Theme 1 research findings 2021*, Cambridge gave slightly more support for a faster timetable than the South Staffs region, but 20 years seemed a reasonable compromise for most, although.

The *Cambridge Water Stakeholder Roundtable Full Report - October 2021* were clear that changes need to be made as a matter of urgency. The consensus was that there is an urgent need to take action before it is too late.

Service level resilience to drought

No regional differences were highlighted in this area.

Balancing Supply and demand side options

The *Cambridge Water Stakeholder Roundtable feedback summary in October 2021*, had strong support for Cambridge Water to do more on demand management and quickly e.g. increase ambition on per capita consumption; introduce universal metering; and use restrictions as part of business as usual rather than only in the most extreme situations.

In the Cambridge region, the most popular supply side option was a new reservoir, with workshop participants torn as to whether or not this should be a shared resource.

During the *Cambridge Water Stakeholder Roundtable feedback summary in October 2021,* a new reservoir was generally seen as an essential component of the plan. Transfers elicited mixed feelings, ranging from an essential component of the plan in the medium term to unacceptable because of environmental impacts. Water recycling was popular.

Demand side options

The *SSC H2Online Community Feedback from 2019-2022* among a more engaged, informed audience found that when members were told about SSC's leakage reduction targets for 2020-2025 (15% reduction), 64% wanted South Staffs Water to go further and deliver a 20% reduction or greater, and 47% wanted Cambridge Water to go further and deliver a 20% reduction or greater.

The *SSC WRMP24 - WRAP Theme 1 research findings in summer 2021* found strong support for universal metering, especially strong in Cambridge. In South Staffs, universal metering was picked as one of the top three options by 3 of the 4 future customers. It was a much less popular option amongst current customers. Likewise in Cambridge, 4 of 5 future customers chose this option, although in this region it was a more popular choice for all. However, no SMEs in South Staffs chose universal metering within their top 3 options. Of those who are prepared to pay more to deliver universal metering, customers in the Cambridge region (27%) were significantly more likely to pay an additional £4 per year to see universal metering delivered by 2035. SSW customers were most likely to support an extra £2.50 by 2050 (24%)

This was reinforced with the *SSC H2Online Community Feedback – WRMP from late 2019 to early 2022* which highlighted that saving money is a key selling point of 'smart' water meters in the South Staffs Water region, whilst in the Cambridge Water region it is the wider benefits of saving water through leakage detection and supporting the environment, as well as the convenience of automatic readings. In June 2021, 52% of Cambridge Water community members (base 44) indicated that they felt metering should be universal for all customers, whereas only 32% of South Staffs Water members (base 47) shared this view. 43% of South Staffs Water members indicated that customers should have a choice when it comes to a metered supply and should have the option to switch back if they are unhappy; 18% of Cambridge Water members shared that view. In Feb 2021, when asked what SSW/CAM's metering policy should be, 30% of South Staffs Water members thought (base 27) water meters should be universal but starting with those with high water usage, compared to only 13% of Cambridge members (base 23). However, 57% of Cambridge members thought a water meter should be universal for all customer homes, compared to 26% of south Staffs members.

Cambridge customers were more likely to prioritise full Advanced Metering Infrastructure (AMI) as a roll out option than SSW. Cambridge customers also appeared slightly more determined to hold out against any bill increases than SSW customers (including support for vulnerable customers).

Source preferences, reservoirs and water transfers

Customers in the Cambridge region put a new reservoir as a top three priority, whereas in the South Staffs region expanding existing reservoirs was only ranked 5th and therefore seen to be less of a priority to meet demand in this way.

During the *SSC Deep Dives*, Cambridge an informed, a group of participants seemed surprised to find out how reliant their area might become on water transfers in the future. As the forum progressed and after further education on the challenges faced to meet future demand and protect the water environment, these participants understood that they will become reliant on transfers which saw some increased levels of acceptance. However, Cambridge customers had markedly lower levels of agreement with various conditions associated with transfers than SSW participants. Concerns included environmental impacts, companies not being self-sufficient and becoming over reliant on other companies.

Acceptability and affordability of current water bills

Customers who attended *SSC WRMP24 – WRAP Theme 1 Forum* (August 2021) saw their water bill as good value for money. The mean average acceptable bill increase was approximately £20. Cambridge customers maximum acceptable bill increase per year was £120, but for South Staffs customers, this was only £70.

Satisfaction with value for money in the *SSC Customer Promises Tracking 2021-22* in South Staffs region was 67% compared to 61% in Cambridge. Customers in the high social grades of A or B were significantly less satisfied with value for money (58%) which may explain the difference between the supply regions, with Cambridge Water having larger proportions of customers with higher social grades.

12. APPENDIX

11.1 Full bibliography

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
Quant Themes 1 and 3 Study - Mar 2022	SSC WRMP Themes 1 & 3: Managing Droughts, Leakage Ambition, Universal Metering, Environmental Ambition – Quantitative Insights (Accent) – April 2022	February to March 2022	1028 HH, 152 NHH	1180 in total, 753 in SSW and 427 in CAM	Core purpose of this study was to provide evidence of customer response and support for; managing droughts, universal metering, leakage, environmental ambition.
Appendix A07 - PR19 data triangulation study - SSW WRMP	PR19 data triangulation study - SSW WRMP	2017-2018	HH and SME customers and future customers	9000+	n/a
Appendix E - customer research findings summary - CAM WRMP	Appendix E Customer Research Findings Summary – Cambridge Water – Water Resources Management Plan: Appendices	2017-2018	HH and SME customers and future customers	7000+	n/a
Artesia MOSL Enhancing Metering Technology report FINAL REPORT	MOSL: A Strategy for Enhancing Metering Technology (Artesia) - April 2022	Report dated 6th April 2022, no FW dates given.	Stakeholders	30 stakeholders.	The aim of this project is to capture and understand the collective stakeholder view of current state of metering technology in the retail market and to develop a technology strategy and framework for assessing the business case for smart, AMI, AMR and data solutions which will benefit stakeholders in both the retail and wholesale market. Providing a consistent approach to support adoption of future standards and protocols and more efficient rollout across the industry.
WRE: Club customer engagement	WRE: Club Customer Engagement Final Report: Combined (Blue Marble) – September 2021	Sep-21	HH, NHH, Stakeholders	HH: 85 (CAM 20, Essex & Suffolk 20, Anglian 40, plus 6 in-depths) NHH: 14 (Anglian 8, Essex & Suffolk 3, CAM 3) Stakeholders: 20 organisations across the 3 companies	To understand consumer context (general environmental priorities, current awareness of long-term challenges and implications for water suppliers, perception of water suppliers). To explore expectations and priorities re environmental planning. To explore response to the 'best value' plan objectives. To explore options preferences (ranking of preferences and what drives importance). To explore intergenerational economics (response to affordability options to understand generational expectations).

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
Water usage in the garden Final Report 2021	Understanding Water Usage in the Garden: Final Debrief (Blue Marble) – November 2021	August-September 2021	15 households (3 per water company area), mix of social grade, HH composition and age, working status, home ownership, urbanicity. All with outdoor tap and moderate - heavy water users.	15 HH	Observe, through ethnographic filming, garden water usage behaviour. Assess dissonance between recalled and actual (filmed) behaviour. Provide insight to support communications and behaviour change activities about "good" or "bad" garden water usage. Explore whether garden water usage is thought to have changed as a result of the Covid-19 pandemic.
CCW Public views of the water environment report	Public views on the water environment July 2021	Feb-21	62 participants (recruited to represent a broad range of current and future water customers)	62 current and future customers	The Consumer Council for Water (CCW) wished to conduct research into how people value and understand the water environment, their preferences for how it should be managed, and their views on current policy directions, taking account of the difference in policies between England and Wales.
Customer preferences on added value for large resource schemes – Literature review	Customer Preferences on added value for large resource schemes: Literature Review on Public Value of Infrastructure Investment (Accent) – April 2022	Apr-22	n/a	n/a	To understand what types of public value customers perceive are important and preferences among those types (and if preferences change depending on the geographical location/ type of scheme or other factors).
Customer Priorities Infographic - July 2022	Customer Priorities – Now and in the future	2020/2021	HH and NHH customers	n/a	n/a
Feedback on draft Water Resources Management Plan 2024 from the WRAP	Feedback on draft Water Resources Management Plan 2024 from the WRAP	Jun-22	Water Resources Advisory Panel - billpayers, future customers and SMEs	CAM: 13, SSW: 13, Billpayers: 18, Future customers: 2 and SMEs: 6	An online forum with participants designed to get feedback on the draft WRMP24 (from informed customers) before it is submitted
Hafren Dyfrdwy WRMP Customer Research	Hafren Dyfrdwy Water Resources Management Planning: Customer Research Debrief (Blue Marble) – June 2022	April and May 2022	4 future customers, 20 HH customers, 6 NHH customers, 5 digitally excluded customers.	35	To understand HD customers' views of the initial WRMP proposals. Specifically, to gauge; response to proposed use of water restrictions, response to proposed ways to reduce demand, response to proposed use smart meters, response to plans to meet the new leakage targets, response to plans to use water transfers, and response to plans to support private supply households.
Metering and Efficiency - Research report from Relish, Welsh water	Metering and Water Efficiency: A research report (Relish) – October 2021	October 2021 is report date, FW dates not provided.	DCWW Customers	Our response comprised n=30 in online community, 700 online interviews and n=100 CATI (computer assisted	To collect feedback from customers to understand their views, preferences and priorities on the subjects of water efficiency, metering and tariffs.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
				telephone interviews), to maximise	
New-Pin Looking to the long-term report - Sustainability First	Looking to the long-term: Hearing the public interest voice in energy and water – Eight agendas for change (Sustainability first)	2015-2018	N/A	N/A	This report summarises the work carried out by Sustainability First's New Energy and Water Public Interest Network (New pin) between 2015 and 2018.
PR19 Foundation Research - Full Report - June 2017	Foundation Report – Qualitative Findings: Full Report (Accent) – June 2017	May-June 2017	Household Non-Household	93 Total: HH: 70 NHH: 23	To understand customer priorities for service delivery both now and over the longer term (prompted and unprompted). And to check these against previously established priorities in PR14 work.
SSC Metering Presentation Final - July 2017	SSC Metering Uptake Research (QA Research) – July 2017	Jul-17	HH Customers without a meter and have a rateable value above 250 and likely to benefit from a meter.	101 CAM, 101 SSW	To understand the key barriers to customers switching to a meter. To understand what messages and communication channels would be most effective in switching customers to take up a meter.
Severn Trent Proactive Metering Research Report	Severn Trent Proactive Metering Research Findings (DJS research) – June 2021	Jun-21	34 customers (domestic and vulnerable) Group: 28 depths: 6	34	Severn Trent wanted to conduct deliberative research to understand five key themes, relating to metering; views on metering, installation of the meters, drivers and barriers to metered water billing, Severn Trent communications, mandatory metered billing.
Severn Trent WRMP24 Report	Severn Trent Water – WRMP24 Report (DJS Research) – May 2022	November 2021 February 2022	HH and NHH customers	624 HH, 149 NHH	Measure customers' preferences for water resources, levels of service and the options or plans that Severn Trent might create to address any changes to levels in service or to address a supply-demand deficit.
South Staffs Water Stakeholder Roundtable feedback summary	Stakeholder Roundtable Feedback – South Staffs Water (Community Research) – October 2021	Oct-21	Attendees from councils, Citizens Advice, Natural England, Waterwise and consumer industry representatives.	8	To consider stakeholder views at a formative stage of the plan development process.
Cambridge Water Stakeholder Roundtable Full Report - October 2021	Stakeholder Roundtable Feedback – Cambridge Water (Community Research) – October 2021	Oct-21	Attendees from a wide range of organisations, including local environmental and river groups, national environmental organisations, a water retailer for businesses, a social housing provider, a local authority planning department, a university and an MP	18	To consider stakeholder views at a formative stage of the plan development process.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
SRO Public Value - Draft report - July 2022	SRO Schemes Research: Combined Insights (Accent) – July 2022	Jul-22	HH, NHH, Future,	Qual: unknown Quant: 5902 HH, 533 NHH	To understand what added value customers perceive is important as part of infrastructure development. To understand preferences for the added value – what should be the balance between options such as economy, jobs, apprenticeships, leisure, education and carbon sequestration etc? Do the preferences change depending on the geographical location/type of scheme or other factors? How much are the customers prepared to pay? What language should be used to explain the added value?
SSC Quant MCDA Study - Feb 2022	SSC WRMP: MCDA – Quantitative Insights (Accent) – July 2021	20th December 2021 to 4th March 2022	HH and NHH customers	1,015 online interviews: 570 with SSW and 445 in CAM, 887 HH, 128 NHH	Explore customers' attitudes and views regarding the natural environment and SSC's approach to planning. Explore customers' ranking of SSC's water supply options to meet demand over the next 25 years. Explore customers' preferences for WRMP options to obtain weights for WRW MCDA decision metrics.
SSC Customer Priorities Tracker - Qualitative wave 2 Research - May 2022	Priorities Research Qualitative Insights – Year 3 (Accent) – May 2022	May-22	Customers	27 current and future HH consumers and 7 NHH customers, 5 depths with 75+ and financially vulnerable, 5 depths with 50+ NHH customers	Explore what matters to customers now and in the future to root SSW/CAM plans in the customers' world. Understand what customers want and expect SSW/CAM to focus on in the short term and long term to 2050. Track and measure any changes in short- and long-term priorities and what is driving these changes.
SSC Customer Priorities Tracker Qual Wave 1 Report - Oct 2020	Priorities Research: Qualitative Insights – Year 1 (Accent) – October 2020	Oct-20	Customers	c60 in total	To understand customers uninformed and informed priorities in the short and long term. To understand what factors drive any changes in priorities including whether there are any wider "Water Industry" trends. To understand whether there have been changes since Summer 2017 and what has driven those changes.
SSC Customer Promises Tracking 2021_22 Annual Report FINAL	South Staffs and Cambridge Water Customer Tracking Research Report 2021/22 (Turquoise) – April 2022	Report dated April 2022 Rolling monthly interview programme	Household Non-Household	1,106 Total: HH: 814 NHH: 292	To monitor ongoing customer satisfaction against the key metrics that engagement has shown to be important to customers; these include hard and soft measures. To deliver on-going customer sentiment tracking against key brand statements. To probe awareness and usage of key services and track changes in the way customers wish to interact with SSC.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
					To monitor and track the impact of Covid-19 pandemic on customers – new objective added in 2020/21.
SSC Debrief Meeting Notes - Round table on Water efficiency in Businesses	Debrief Meeting Notes – Stakeholder Roundtable: Helping Businesses Save Water – March 2022	Mar-22	Attendees: Universities and local industry	6	To work with businesses in the Cambridge area to find out what can be done with retailers to further support, promote and implement water efficiency in NHH in the next 5 years and beyond (challenges, visions, opportunities).
SSC Deep Dives Report	South Staffs and Cambridge Water: Findings from the WRAP (Water Resources Advisory Panel) DEEP DIVES on universal metering and water transfers (Community Research) – November 2021	Nov-21	Forum 1: 47 Total CAM: 25 SSW: 22 Billpayers: 28 Future: 9 Small business: 10 Forum 2: 40 total CAM: 20 SSW: 20 Bill payers: 26 Future: 6 Small business: 8	87	To explore household customer, future customer and SME business customer views in depth on; universal metering and water transfers.
SSC H2Online Community Feedback - WRMP	H2Online – South Staffs Water and Cambridge Water: Summary of activities relevant to WRMP engagement (Explain) – November 2019 to March 2022	Nov 19- March 22	Panel responses vary over time CAM 360+ SSW 315+	Panel responses vary over time CAM 360+ SSW 315+	To build an engaged community of customers, going beyond gathering insight to establish and sustain two-way engagement. To ensure that the PR24 engagement programme delivers a further step-change in customer engagement.
SSC household affordability income analysis - June 2022	SSC Household affordability Income Analysis – June 2022.	June 2022 (reviewing data since 2021)	Household	4,419 Total: HH tracker: 800 From other SSC surveys: 3,619	To track a range of key service related and brand metrics each year, such as customer perceptions of "affordability of water bill"
SSC WRAP online groups report - FINAL - Feb 2022	South Staffs and Cambridge Water – Findings from the WRAP (Water Resources Advisory Panel) Focus Groups on options relating to metering, tariffs and water transfers (Community Research) – February 2022	Feb-22	Bill payers: 5 Future: 1 Small business: 1 SSW: 6 CAM: 5	11 customers	To explore the following topics with online groups; metering options (covered in both regions), new types of tariffs/incentives (SSW only), water transfer options (CAM only).
SSC WRMP24 - WRAP Theme 1 research findings	Findings from the WRAP's (Water Resources Advisory Panel) Theme: Strategic	June-August 2021	HH (28), future (9) and SME (10) customers	47 Customers	To explore household, future and SME businesses customer preferences in terms of; environmental ambition, levels of service/resilience ambition, water efficiency ambition, and best value planning criteria.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
	Decisions (Community Research) – August 2021				To ensure a "golden thread" of customer preferences in these strategic areas, which sets the context for the remainder of the engagement programme.
Strategic Metering - Roles and Responsibilities Report PA Consulting	Roles and Responsibilities for Metering in the NHH Market: Phase 1 Report (PA Consulting) – June 2022	Jun-22	collaboration with MOSL, the Metering committee and it's Metering Roles and Responsibilities Sub Group	n/a	Identifying a set of potential options to reform or enhance current roles and responsibilities in relation to metering and related activities in the NHH market.
SSC Customer Tracking Customer Priorities: Desk Review Report for SSC PLC (Accent) – 8 September 2020	Tracking Customer Priorities: Desk Review Report for SSC PLC (Accent) – 8 September 2020	Aug-20	Various	13 reports	Review current SSC understanding of its customers' priorities, as reported in SSC research outputs. Review methodologies for customer priorities measurement, including a review of research conducted by other water companies for PR19. Review Ofwat expectations for PR24, as set out in Ofwat's recent Time to Act strategy paper.
UEA-CBESS-22-01 - behavioural change report - 2022	Behaviour Change Interventions in the Water Sector (UEA and CBESS) – January 2022	Jan-22	n/a	n/a	To identify existing good practices, as well as opportunities for improving how evidence bases can support the design of interventions, and how the effectiveness of interventions can be monitored and evaluated over various timescales.
WRE NHH demand club project - NHH retailers stage 2 de-brief	WRE Promoting Water Efficiency in the NHH Sector: Collaborative Roundtable Meetings – Debrief (Blue Marble) – April 2022	March 2022- April 2202	NHH Customers	4	To develop and refine solutions with retailers and wholesalers.
WRE NHH demand club project - Stage 1 findings	WRE NHH Engagement Interim Report: Water Retailers (Blue Marble) – January 2022	December 2021 – January 2022	NHH Customers	9	To find out water retailers views and opinions on water efficiency, and on strategies to encourage NHH water efficiency.
WRE_NHH engagement final debrief	Promoting Water Efficiency among Non-Household Customers: Understanding how Wholesalers can Motivate Usage Reduction (Blue Marble) – August 2022	8th June - 7th Jul 2022	NHH Customers	26 NHH customers	To find out current role of water efficiency –How, it at all, have businesses adopted water efficiency? Barriers to water efficiency – What is, and could be, preventing adoption of water efficiency? WRE proposition response – How do business' feel about WRE's water efficiency propositions?
WRMP Full Report - Oct 2017	WRMP and Long-Term Resilience Customer Engagement Insight – Full Report (Community Research) – September 2017	Autumn 2017	HH and SME customers	Workshops 62, business and stakeholder round tables 21, survey: 300 in SSW, 200 in CAM	To use the research findings from Phase One to support the development of their WRMP in both regions, specifically understanding customers' views on; levels of service, leakage, water efficiency, metering, and (if possible) environment impact, and initial thoughts on options for the future. And to use the findings from Phase Two to inform investment choices, by giving customers the opportunity to feed into SSC's strategic challenges.

Evidence	Actual Report Name	Fieldwork Date/Insights gathered	Participants	Sample Size	Project Objectives
WRW 2022 updated regional plan customer research	Water Resources West Regional Plan Customer Research (Shed Research Consulting) – June 2022	Jun-22	N/a	n/a	To ensure the customer input in the regional plan is up-to-date by including the latest knowledge (by conducting a triangulation of the most recent customer and stakeholder research).

11.2 Customer Priorities Infographic

11.3 Accent Quant themes Environmental destination Stimulus Materials

Customers were then asked to pick one of the three levels below, each with tailored bill impact:

LEVEL 1	LEVEL 2	LEVEL 3
The water environment (i.e.: river, streams, lakes, etc) stays as protected as it is now	**The water environment stays as protected as it is now, but South Staffs/Cambridge Water also prioritises some of these to protect and improve them**	**South Staffs/Cambridge Water goes even further, working in partnerships to protect and improve the vast majority of water environments**
This is **not doing nothing** because a lot has to be done just to stand still and to stop these environments from deteriorating or deteriorating further because of issues like climate change reducing rainfall levels and an increasing population and water being wasted, such as due to leakage. This option means more action for the water company to take (just to keep things the same) and therefore some increased investment will be needed. The amount of water saved from reducing customer demand may not be sufficient to allow for additional growth and so new supply options (like a water transfer from a surrounding area) may need to also be considered.	To make sure it could then meet the long-term demand for water, the company would also need to find alternative sources for water. There could be a need for larger supply options (such as a new reservoir) as well as working to further lower customer demand for water and reduce leakage, which would mean a bigger investment is needed.	The approach would focus on working in partnerships with many other organisations along river catchments to improve the flow of the water and fully restore the water environment to what it was before any damage was done by human activities. Due to the complexity of work and the number of stakeholders involved, this will be the most expensive option for the water company, which would mean an even bigger investment is needed to find new water sources to meet demand.
Bill impact: £	Bill impact: ££	Bill impact: £££