Revised Draft Water Resources Management Plan 2024

Technical Report - Customer and stakeholder engagement

June 2023

United Utilities

Water for the North West

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1. Introduction

United Utilities Water supplies water to a population of over seven million people across an area of approximately 13,800 km^2 in the North West of England. On average, we supply domestic and business customers with an overall demand of approximately 1,800 million litres a day, and through our Water Resources Management Plan (WRMP) we must ensure that we continue to maintain a secure and resilient supply of water for customers in the future, whilst at the same time meeting regulatory requirements and environmental objectives and taking into account the aspirations and preferences of customers and stakeholders.

In common with all water companies in England and Wales, we are required by the government to produce a WRMP Plan at least every five years, setting out our proposals to ensure that we can continue to deliver a secure and reliable supply of water over at least the next 25 years. In order to develop a successful WRMP, it is essential that we engage with customers, stakeholders and regulators from an early stage and throughout the development of each successive plan. This allows all relevant parties to shape our plan through a collaborative approach, ensuring that our decision making process takes account of their preferences and priorities so that our plan is more likely to gain their support.

This Technical Report summarises the objectives of our customer and stakeholder engagement, as expressed to us through a range of engagement and research exercises and sets out our programme of consultation and research activities conducted throughout the development of the plan. It includes details of the methodologies adopted and the outcomes of these activities and explains how we have taken customer and stakeholder views into account when developing our plan.

1.1 Aims and objectives

It is important that we engage fully with customers and stakeholders in developing the WRMP. The reasons for doing this, and the benefits for our plan, can be summarised as follows:

- Ensures we produce a plan that is supported by customers and stakeholders and reflects and balances the priorities of all interested parties;
- Helps to shape our investment proposals for our 2025–30 Business Plan;
- Ensures that regulators are fully aware of, and able to comment on, our technical approaches from an early stage in the process, to reduce the need for significant changes at a later stage;
- Allows us to identify opportunities where collaboration may enable more effective or efficient solutions;
- Allows us to identify and adopt examples of innovation and best practice where appropriate;
- Ensures that there are ‘no surprises’ when our final plan is published, as customers and stakeholders will have had a number of opportunities to read and comment on draft plan publications;
- Allows us to demonstrate a transparent link between customer and stakeholder feedback and our decision making process; and
- Ensures compliance with regulatory guidelines, including the Environment Agency’s Water Resources Planning Guideline (WRPG), which states that we should “actively engage with customers and stakeholders at a local or catchment level” and “engage at an early stage with…regulators, customers and interested parties”.

1.2 National and regional planning context

In the recently published (March 2020) National Framework for Water Resources, Defra confirmed their requirement for Regional Water Resources Plans to be produced, to address the need for resilient and sustainable water supplies in a growing economy and changing climate. There are currently five regional groups across the UK, consisting of water companies, water industry regulators and stakeholders, working to address the requirement for Regional Plans.

United Utilities Water is a member of the Water Resources West (WRW) regional group, along with Severn Trent Water, Dŵr Cymru, South Staffs Water, the Environment Agency and a number of associate members. Our 2024 Water Resource Management Plans are being developed in collaboration with WRW, as the aim is for all individual company plans to align with the relevant Regional Plan.

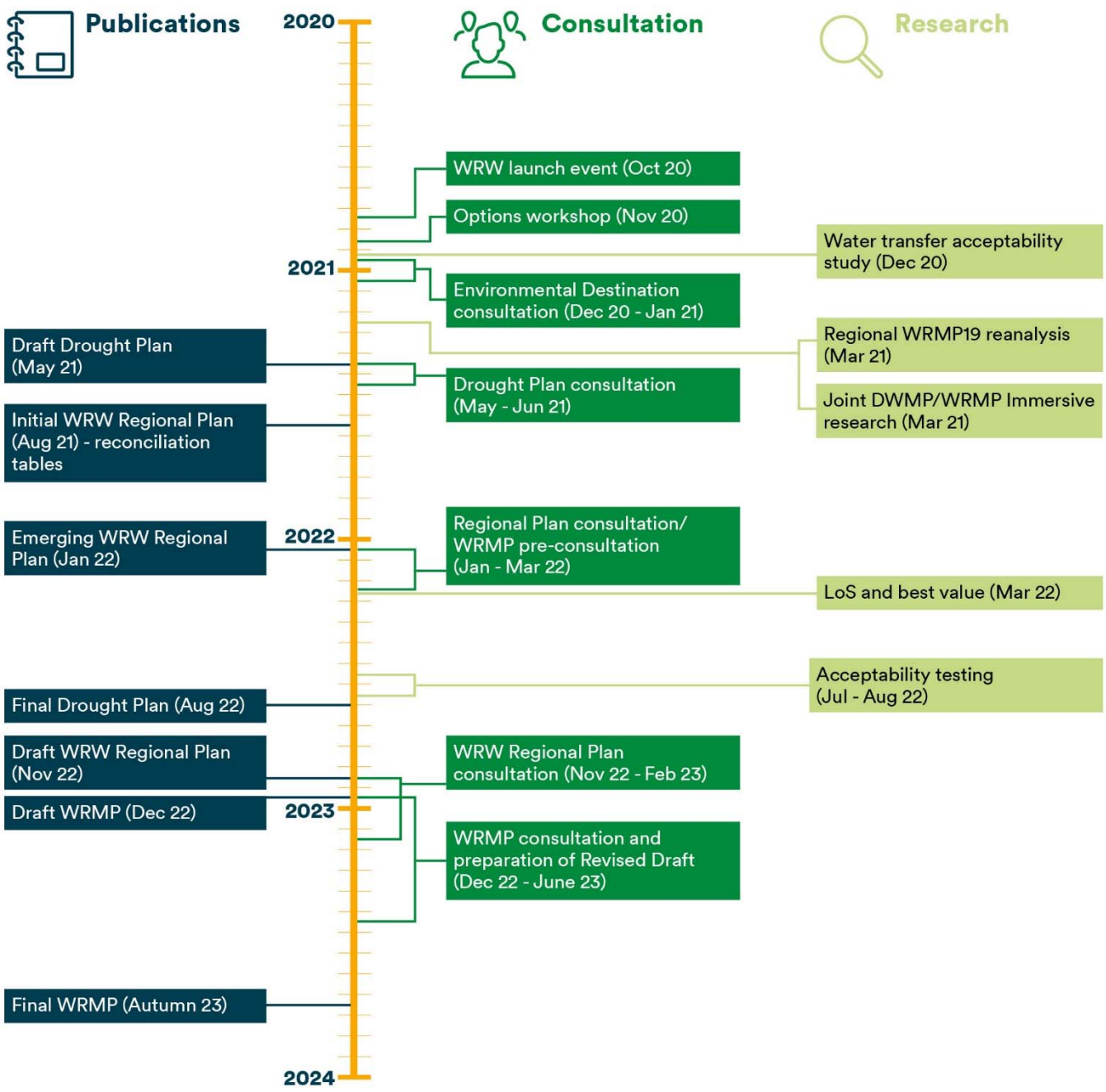
A key activity of the WRW Group is to align company plans using consistent tools and methods where possible to ensure that the overall Regional Plan is founded on a common approach. This includes developing common methodologies for customer and stakeholder engagement. WRW has carried out a wide range of joint research and engagement activity at a regional level, in order to achieve consistency and avoid duplication of effort across individual company plans. We have also sought to ensure additional activity undertaken aligns with the approaches adopted by WRW.

A summary of consultation and research activities undertaken by WRW during the development of both the Regional Plan and the WRMP 2024 is shown in the timeline in Figure 1.

1.3 Timeline of activities

A summary of key research and consultation activities, which have shaped our development of the WRMP 2024 is shown in Figure 1 (Note that this does not include all activity, for example regular liaison meetings with regulators are not shown).

Figure 1 Summary timeline of research and consultation activities for the WRMP 2024



1.4 Changes from draft to revised draft WRMP

Change	Reason	Update(s)	Relevant section(s)
Expanded section on WRW engagement activities	Include summary of WRW draft regional plan consultation	Additional section 2.3.6	Section 2.3.6
New section on consultation	Summary of approach taken to our draft WRMP24 consultation	Additional section 2.4.3	Section 2.4.3
WRW regional customer research update	Reference to further iterations of the research carried out	Expanded section 5.1	Section 5.1

2. Stakeholder and regulator engagement

2.1 Alignment between company and regional engagement

Stakeholder engagement has been undertaken by both UUW and WRW. This has added to the richness of the engagement due to the ability to involve a wider range of stakeholders. However, it has also added to its complexity. Consequently, we have adhered to the strategy set out below:

- All stakeholder consultation activity has been coordinated through the WRW stakeholder management group;
- Detailed consultation/stakeholder engagement undertaken by individual member companies as part of their water resources planning activity is set in a regional and national context;
- Some stakeholder engagement has been carried out on behalf of WRW and the results shared with all parties;
- We are working with other regions to gain wider stakeholder engagement and input;
- Stakeholder feedback on WRMP development relevant to the regional context has been, or will be, shared by individual companies with the regional stakeholder and senior management groups;
- The stakeholder feedback received at each stage will be used to inform subsequent development of the regional plan and WRMPs. In particular, this will include:
  - Consultation on the statement of resource need – to generate options (including third-party options for supply and demand), gather input to ambition, gather views on methods and provide context to help formulate strategic questions;
  - Pre-consultation with statutory and non-statutory stakeholders;
  - Consultation on the informal consultation version (regional plan) to gather views on the strategic choices; and
  - Formal consultation on the draft Regional and Company plans.

2.2 Stakeholder engagement activities

The UUW and WRW activities that have taken place are detailed in the sections below and include:

- WRW: Stakeholder consultation on the initial resource position;
  - WRW: Consultation on options;
  - WRW: Consultation on environmental destination;
  - WRW: Consultation on water transfers;
- WRW: Consultation on the emerging plan;
- UUW: Regulator liaison;
- UUW: Pre-consultation;
- UUW and WRW: Consultation on draft plans; and
- UUW: Other stakeholder engagement activities.

Each following section is structured with a description of the engagement that took place, what we learned from the engagement and how we have used this to inform our plan. It should be noted that stakeholders' comments were not always related to the subject being consulted on. Irrespective of this, we have endeavoured to show where we have incorporated these comments into our plan.

2.3 WRW Engagement activities

Our regional planning group, WRW, has carried out three stages of stakeholder consultation in support of both the Regional Water Resources Plans and individual company plans. The first stage was to obtain feedback on the initial resource position. This was published in March 2020. The second stage was to consult on the Emerging Regional Plan, published in January 2022. The third stage was consultation on the Draft Regional Plan which ran from November 2022 to February 2023.

2.3.1 Stakeholder consultation on the initial resource position

An initial resource position for the region was published in March 2020 and this included a set of key feedback questions for stakeholders (Figure 2).

Figure 2 Stakeholder feedback questions on WRW's initial resource position

1. Do you think we have we missed any key water users within the region? If so, can you please provide details of these water users and the sectors they may be in?

2. Are there any further key challenges and opportunities we face in the region with regard to water resource availability that you believe we should consider?

3. We have set out our first thoughts on the environmental needs and ambition. What are the main areas of opportunity you think we could benefit from?

4. What are your views on how the region could, or should, use temporary approaches, such as drought permits, to managing continuous water availability in drought events?

5. This plan requires engagement across a wide range of stakeholders. What are your views on how best to achieve this and are there any key stakeholders you suggest the plan engages with?

6. We have set out the initial options for managing water resources in the region. What are your suggestions on further options we could consider?

WRW has utilised a range of digital tools and platforms to bring together a diverse mix of sectors and interest groups. The group launched its website with an engaging and interactive virtual event taking place in October 2020, attended by around 70 stakeholders from across the North West, Midlands and Wales. The event included a Q&A session, in which stakeholders had the opportunity to ask questions, prompting discussions about how the plan may impact each of the sectors and how they might get involved in shaping the plan.

The website has been used both as a means to inform customers and stakeholders of the objectives and activities of the group, and also to facilitate ongoing engagement with stakeholders. In particular, an online portal, 'IdeaStream', has been established as a collaborative platform for stakeholders to share thoughts and ideas beyond the consultation events. The aim is to promote discussion and generate ideas by connecting relevant stakeholders: water providers, water users, regulators, planners, landowners and other interested groups. WRW has used IdeaStream to share policy documents, launch consultations and seek feedback from stakeholders. The portal includes separate discussion forums for specific topics of key importance in the development of the regional plan. Separate stakeholder events have also been held on key topics, including the following:

- Statement of Resource Need;
- Options;
- Environmental destination; and
- Water transfers.

The first draft of the WRW Regional Water Resources Plan was submitted in January 2022 and this was followed by a period of informal consultation on the plan, aligned with the pre-consultation for United Utilities' own company plan (see Section 2.4.2).

2.3.2 Consultation on options

A virtual options workshop was held in November 2020, attended by 32 stakeholders from a mix of sectors including attendees from local authorities, private consultancy firms, utilities providers, environmental bodies, flood action groups and universities. The aim was to work collaboratively across sectors to plan water usage for the next 25 years and beyond through building on existing relationships and establish new ones.

In the first session, attendees worked in groups to discuss and identify:

- Water usage by sector;
- Seasonal variation of water usage;
- Issues around wastewater;
- Impacts of climate change on water supplies; and
- Impacts of the economy on water supplies.

The session indicated that many stakeholders were unaware of the exact amount of water usage of their sector, although there was agreement that demand varies seasonally depending on factors such as variation in their production rates (for commercial water users). All stakeholders were in agreement that climate change is a key issue within their sector, impacting on water usage within businesses and in some cases requiring significant infrastructure updates, which would impact on business decisions. Brexit was also identified as a key influence across all sectors, as a macro-economic factor.

In the second session, WRW explained the approach to identifying water development opportunities, and discussion took place on the risks and constraints that may need to be overcome to utilise potential water assets. Stakeholders used a virtual map of the region to plot areas where water assets or potential assets are located; this proved to be a valuable exercise in providing new opportunities for WRW to explore and collaborate on.

2.3.2.1 How this consultation has informed our plan

In our demand forecast, we have taken into account, seasonal variability of demand, the possible impacts of climate change and also the impact of different economic outcomes on our non-household demand forecast. WRW has also used the virtual map that was populated in the stakeholder event as a guide as to where opportunities could be explored and collaborate upon. This has fed into the WRW options workstream, which in-turn has informed the options reconciliation process. More detail on options reconciliation can be found in the decision making technical report.

2.3.3 Consultation on environmental destination

In line with the national framework for water resources, with regional groups we have developed an ambition for sustainable water resources management for the long term, to 2050 and beyond. The Environment Agency published guidelines 'Long-term water resources environmental destination' in October 2020, which we have followed in developing and implementing this environmental destination.

Further details of our environmental destination are provided in our *Revised Draft Technical Report – Environmental Destination.*

A consultation on this topic was undertaken via IdeaStream (Section 2.3.1), the online collaborative portal created for WRW, from December 2020 through to January 2021.

Stakeholders were asked a series of questions, in order to identify:

- How much of a priority environmental considerations would be over the medium term?
- What work was currently ongoing in terms of environmental planning?
- What each stakeholder has experienced in terms of environmental collaboration?

The consultation attracted around 1,000 views on the webpage and a total of 33 stakeholders responded, with a number of key themes emerging in their responses:

- Flooding, water efficiency and demand reduction were all identified as key environmental priorities;

- Early engagement and effective communication were seen as important across all stakeholder groups;
- Numerous opportunities for stakeholder collaboration through existing forums, projects and funding streams were identified; responses from both Waterwise and local government groups expressed a particular wish to work with WRW;
- Several stakeholders identified lack of funding and resources as potential barriers to collaborative working;
- Stakeholders suggested a range of measures to improve the resilience of the water environment, including natural flood management schemes and water storage; and
- Responses from the agricultural sector consistently emphasised a desire to see flexible licencing, increased on-farm water resilience measures and grant schemes.

It was noted that stakeholders have a range of competing priorities, ranging from maximising benefits to ecology, through to running successful businesses or minimising flood impacts on their communities, along with many other objectives. Whilst long-term environmental objectives are important to stakeholders, 'short-term wins' were also seen as important in terms of gaining funding and project approval.

2.3.3.1 How this consultation has informed our plan

As previously stated, demand reduction is central to our plan and in line with regulatory drivers. This can be seen by the number of demand options identified in the options identification technical report and selected in the decision making technical report.

UUW has engaged with regulators on a quarterly basis throughout the programme. It has also held pre-consultations and participated in WRW's consultations. Furthermore, stakeholders including, amongst others, Waterwise and local government groups were included in UUW's pre-consultation and will be included in the formal consultation.

UUW has considered a wide range of different option types. We filtered down from a long list of over three hundred options to make sure the maximum number of types were considered, including resilient natural flood management and water storage. A common WRW screening and selection criteria was then used to select down and shortlist options. Our option selection criteria were based on best value, which combined environmental, monetary cost and economic factors as suggested by stakeholders.

2.3.4 Consultation on water transfers

A further consultation was undertaken via IdeaStream from November 2021 to January 2022 on the topic of water transfers. The aim was to understand stakeholder views on the impacts of changes of water supply, which may be required to facilitate water transfers more strategically, as well as to understand their opinions on the specific strategic resource option proposals under consideration.

Consultation questions asked were;

- Which company supplies the respondent's water;
- The extent to which respondents believe that water should be shared;
- Assurances that respondents would value if trading was to take place;
- Who should pay for cost of the transfer schemes; everyone, or those receiving the water;
- Respondents' views on six specific schemes across WRW;
- The benefits that respondents would like to see from transfers;
- To what extent should supply resilience and the environment be protected in the areas from which transfers are sourced;
- To what extent should there be benefits to areas that provide transfer sources;
- What environment and wellbeing benefits could be realised as a result of trading; and
- General thoughts on water trading.

2.3.4.1 Consultation results

From the responses, we saw that there was broad acceptance of national water trading. Although this was the case, respondents wanted both themselves and the environment to be protected from any detrimental effects. For example, they felt that in areas that became trading sources, there should be no reduction in drought resilience and there should be no detrimental effect on the environment. Respondents also felt that the cost of trading should be borne by those who use the water. Of the trading schemes discussed, there were few respondents that disagreed with them, although the largest proportion of consultees were non-comital.

2.3.4.2 How this consultation has informed our plan

Water trading is central to our plan and this consultation demonstrates that consultees are in favour of this.

Consultees also stated that there should be no detriment to resilience or the environment and by ensuring that there is sufficient 'backfill'. We are not only retaining the existing level of resilience, but we are also improving TUBs levels of service from 1 in 20 (5% chance per year) to 1 in 40 (2.5% chance per year).

2.3.5 Stakeholder consultation on the Emerging Regional Plan

The Emerging Regional Plan was published in January 2022. Following this, a regional stakeholder consultation exercise was launched.

On 26 January, 2 February and 9 February 2022, Water Resources West (WRW) hosted a series of virtual workshops that formed part of the programme of consultation on their Emerging Regional Plan. Each of the workshops had a regional focus – the first on the North West, the second on the Midlands, and the third on Wales – and were designed to seek feedback from stakeholders on the following topics: WRW's environmental destination; drought resilience and demand management; and water resources options. The fourth session of each workshop was dedicated to the specific Water Resources Management Plans (WRMPs) for each region within WRW. On 26 January, this optional session was hosted by United Utilities Water. On 2 February, it was hosted by Severn Trent Water and South Staffs Water, jointly, and on 9 February by Welsh Water.

The workshops were hosted online, using Zoom. Each session consisted of a short presentation given by WRW representatives and/or their counterparts at United Utilities Water, Severn Trent Water, South Staffs Water, and Welsh Water, followed by facilitated discussions in virtual breakout rooms. In addition, stakeholders were asked to vote in an online poll on a number of topics.

Maximising Participation

WRW's database contains the details of more than 1,000 stakeholders, all of whom were invited to take part in the workshop series. The stakeholders on the WRW database were sent several email invitations for the consultation events to ensure that they were given the opportunity to participate. The first invitation was sent on 17 December 2021 to give stakeholders at least five weeks' notice. In addition to the email invitations, pre-identified stakeholders also received telephone calls with the aim of ensuring a mix of different stakeholder groups across the workshops. As standard practice, ahead of any workshops, all stakeholders who had registered were reminded about the event via telephone and email with a view to maximising participation.

Providing Accessible Information

There were four short presentations, each followed by breakout sessions in smaller groups to enable stakeholders to provide verbal feedback. Relevant slides from the presentation were shared in the breakout rooms to ensure that stakeholders had sufficient information in front of them to participate. If stakeholders did not answer a question, the facilitators asked them to confirm whether their silence indicated tacit approval or whether they felt unable to respond.

Each breakout session was followed by electronic voting, with online voting software used to gather quantitative feedback on each topic. Stakeholders were given the option of 'don't know/can't say' when voting and were asked not to answer if they felt that they did not have enough information or the necessary level of expertise to take a view.

Stakeholders were emailed a copy of WRW's emerging Regional Plan ahead of the workshop to provide them with additional background information for the event.

Participants

- A total of 133 stakeholders participated in the workshop, representing 84 organisations.
- The most widely represented stakeholder types were local authorities (23 per cent), government bodies (18 per cent), and utilities (10 per cent). A fifth of participants (20 per cent) identified as 'other', indicating that their stakeholder type was not adequately described by the available categories.
- Thirty per cent stated that they were served by United Utilities Water.
- Fifty-six per cent of attendees who filled in a feedback form told us that they found the workshop to be 'interesting', with another 41 per cent opting for 'very interesting'. Seventy per cent felt that the facilitation at the workshop was 'very good', while 30 per cent chose 'good'.

Workshop 1: WRW's Environmental Destination

The first workshop began with a presentation that explained that WRW is planning a long-term 'environmental destination' for water resources up to 2050 and beyond, using scenarios to consider the impact of climate change and growth and taking active measures to protect and improve the resilience of its catchments. Participants were then asked for feedback on the prioritisation of benefits for action – water resources, multi-benefit, or catchment-specific – and for direction on three possible levels of environmental ambition – current regulation, business as usual (BAU), or enhanced.

- A clear majority wanted to see WRW enact an enhanced level of environmental ambition, and this was reflected in the electronic voting, where 79 per cent opted for level 3 (enhanced);
- Across all three workshops, there was some debate about where to prioritise the benefits for action, with some arguing in favour of a multi-benefit priority in order to gain the widest scope, while others were concerned this could dilute impact and effectiveness and advocated a catchment-specific approach;
- These differences in opinion were reflected in the electronic voting, where maximising multiple benefits received a slim majority (56 per cent), with a catchment-specific approach close behind on 42 per cent; and,
- Delegates were asked to rank environmental benefits according to their importance, and the top priority was water quality, with an average score of 5.34, followed by water resources – flows and levels, with 5.17. The third most important benefit was flood management with a score of 4.54.

2.3.5.1 How this consultation has informed our plan

UUW has used the anticipated effects of environmental ambition in its calculation of supply, which has then been used in the supply and demand balance.

Additionally, the benefits raised in the consultation were evaluated as part of our quantitative customer research where customers were asked to provide a weighting of the best value metrics. This built on the findings of this engagement session.

Workshop 2: Drought Resilience and Demand Management

Workshop 2 began by showing the need for resilience, using forecasts that predict the negative impact of both climate change and growth on the supply of fresh groundwater. It was explained to stakeholders that demand reduction was WRW's starting point, with an ambition to reduce personal water consumption by 20 per cent by 2050, and to reduce leakage by half. Participants were then asked for feedback on the acceptability and feasibility of this proposal, and whether other measures, such as water labelling, building standards and water metering, would be supported. Participants were asked whether WRW should aim to achieve the drought resilience standard (of once in every 500 years) earlier than the proposed date of 2039.

- There was strong support for reducing water consumption by 20 per cent, with 76 per cent agreeing or strongly agreeing with this proposition;
- A majority of stakeholders felt that government intervention was vital in driving down personal water consumption, with this view further supported by the electronic voting, where 89 per cent agreed or strongly agreed with the proposal;

- There was more nuance around the issue of smart metering: although many agreed with it in principle, concerns were raised over affordability, the more fundamental issue of leakage, and the use of hard engineering solutions where a smarter approach might be wise. Voting electronically, 72 per cent were supportive of this measure, 12 per cent remained neutral, and 17 per cent disagreed;
- Many felt that increasing customers' bills to solve deficits by reducing demand was a politically difficult issue, especially given the levels of regional poverty across WRW's patch. This lack of consensus was reflected in the voting, with 48 per cent agreeing, 35 per cent disagreeing, and 17 per cent remaining neutral; and
- Views were mixed on bringing the drought resilience standard forward to 2025, and this was witnessed in the voting, where 58 per cent agreed with bringing the standard forward, 19 per cent disagreed, and 23 per cent remained neutral.

2.3.5.2 How this consultation has informed our plan

Reduction in the consumption of water is core to our plan and in line with our regulatory targets. As a consequence, we have demand options to reduce both leakage and per-capita consumption (PCC). Also, UUW supports government intervention, which is shown by our Water Labelling options. Please see the options identification appendix for more details. Smart metering also features strongly in our preferred demand options.

While we recognise that opinion was split in this group to bring forward drought resilience, our quantitative research strongly supported this. Please see Section 4.1.

Workshop 3: Water Resources Options

Workshop 3 began with a presentation that showed that leakage and demand management alone will not be sufficient to meet increased demand, and that new supply options will need to be identified. This outlined some of the 226 feasible new water supply options, such as reservoir enlargement, effluent reuse, and surface water enhancement, and asked for feedback on the range presented, as well as suggestions on other partner organisations that WRW can work with to create multi-sector benefits and opportunities.

There was then an explanation of local water needs, showing that by the 2040s, supply options will be needed to serve the Midlands, potentially Carlisle, and, further away, the South East. Feedback was sought on water transfers, asking whether this was acceptable to stakeholders, and, if so, what protections and benefits they would expect.

- Overall, it was felt that WRW had presented a good range of water options, with 81 per cent agreeing or strongly agreeing that this was the case;
- There was strong support for options that were seen to have both economic and environmental benefits, and this was reflected in the voting: when asked to rank their top novel water resources, catchment management was first (21 per cent), followed by water treatment works loss recovery (15 per cent) and surface water enhancement (10 per cent); and
- There was little appetite for 'hard engineering' solutions, such as new reservoirs and bulk water transfers, which were seen as politically and environmentally contentious.

There was majority support for sharing water resources, with 75 per cent agreeing with the proposal. However, this was also a politically divisive issue that reflected regional concerns and differences: some delegates objected to their more water-rich regions losing out to development in the South, while others felt that ethically it was correct to share water resources.

- When asked to rank the benefits of water transfers, enhancements to the environment was first, with an average of 3.5, followed by improvements to water supply and resilience, and investment into the area (new jobs), with 3.39; and
- When delegates were asked to vote on the proposition: "Overall, I am supportive of Water Resources West's emerging plan", 74 per cent agreed, but 22 per cent remained neutral, suggesting that more work needed to be done to educate, inform and consult with stakeholders on the plan.

2.3.5.3 How this consultation has informed our plan

We recognise that stakeholders care about both environmental and economic issues. Hence, we have used both in our options selection criteria.

Water trading is also central to our plan where we share water with other water companies to the benefit of customers. In recognition of stakeholder views, we are also fully aligned with the WRW plan as part of our ongoing joint working and our participation in selection of options through regional reconciliation.

Workshop 4: Water Resources Management Plans (WRMPs)

The fourth session of the day was hosted by representatives from each of the utilities in the WRW region, with the first workshop in the series devoted to United Utilities Water, the second to South Staffs Water and Severn Trent Water, and the third to Welsh Water. These sessions were designed to elicit local knowledge and feedback from each of WRW's regions, with a focus on specific areas of their WRMPs: environment, demand management, options, service levels, transfers, water quality, and consultation and engagement.

- The environment was selected for discussion across all three workshops, and key concerns were voiced around river pollution from sewage runoff and pesticides, phosphates and fertilisers, with many delegates of the view that 'water companies have a statutory duty to protect water quality';
- Discussing land management, stakeholders wanted to see more engagement with farmers, large landowners and big industry over reducing harmful runoff, and this connected to a wider picture regarding better catchment management, which could lead to greater biodiversity, more effective flood management, and environmental net gain;
- Demand management focused on the impacts of the levelling up agenda, growth, heavy industry and manufacturing. Policy and strategy geared towards more stringent building regulations, grey water reuse and reducing leakage were all strongly advocated; and
- Water quality was viewed through the environmental context of algae blooms, pesticide runoff and contaminants: catchment management and nature-based solutions, such as slowing water flow and environmental management schemes, were proposed, as well as smarter use of technology, such as strategies to reduce contaminants and pollutants to the rivers before extraction, removing the use of chlorination in drinking water, and better treatment at sewage works.

2.3.5.4 How this consultation has informed our plan

Any option that we select into our preferred plan will undergo a Drinking Water Safety Plan risk assessment, which will help flag any water quality concerns.

Also, as previously stated, our demand forecast has taken into account the economic forecast of the region and has considered a number of economic outcomes.

2.3.6 Stakeholder consultation on the Draft Regional Plan

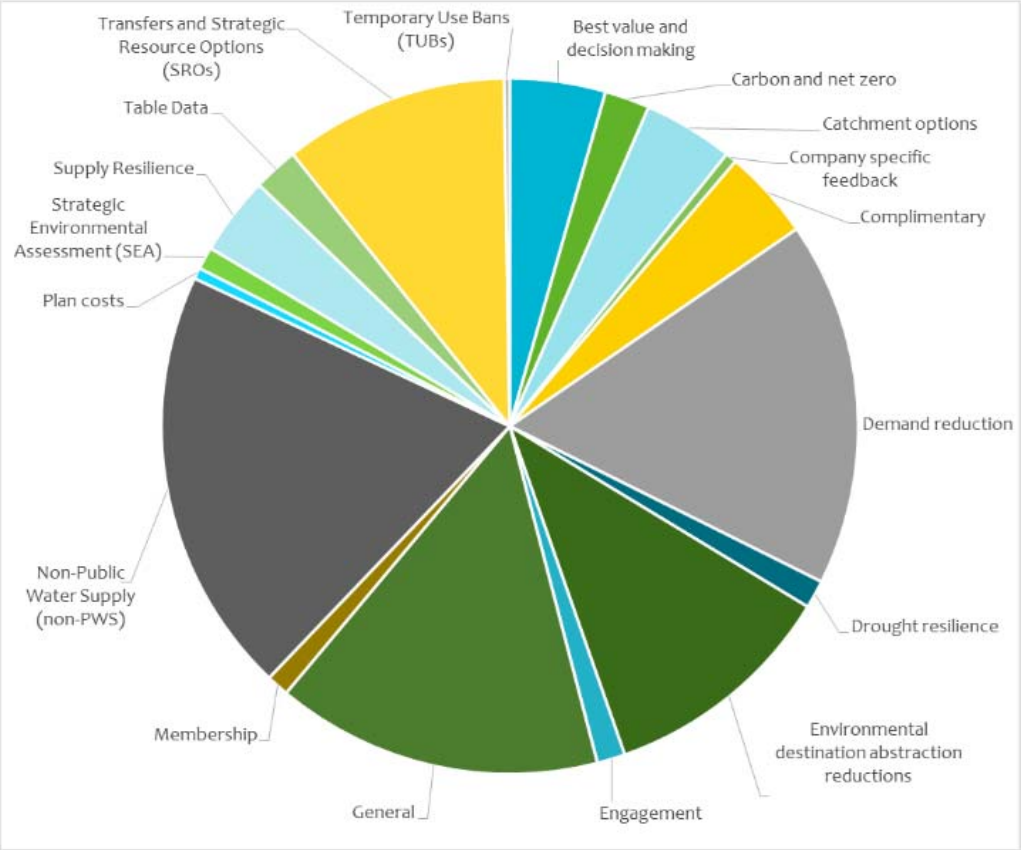
The Draft Regional Plan was published on 16 November 2022, for a 14-week consultation period to 22 February 2023. The plan set out how our members proposed to achieve long-term, best-value and sustainable water resources across our region.

In parallel, the five core water company members consulted on their draft Water Resources Management Plans and nine engagement events were held across the region where the regional plan and WRMPs were discussed with stakeholders. The engagement events were designed to elicit feedback from stakeholders on each companies draft WRMPs.

WRW received 25 formal consultation responses on the draft plan and a Statement of Response was published on their website, explaining the feedback and the changes made to the regional plan as a result. This document was also sent to the Welsh Government Minister for Climate Change and the Secretary of State for Environment, Food and Rural Affairs.

The distribution of key feedback themes is shown in Figure 3. Full details of the responses received can be found in the WRW Statement of Response document.

Figure 3 Key themes from WRW Draft Regional Plan consultation responses.



2.3.6.1 How this consultation has informed our plan

The feedback received during this consultation period was shared with us and we used this to supplement our own consultation feedback, and made changes to our revised draft plan as a result.

2.4 UUW Engagement activities

2.4.1 Regulator liaison

We have undertaken eleven technical liaison meetings with the Environment Agency, Natural Resources Wales and Natural England during the development of this plan. This has enabled us to discuss and develop our technical approaches to the plan in collaboration with these key regulators, as well as addressing key technical queries from these organisations in a timely manner.

We also held a detailed half day meeting with Ofwat to provide information on the development of our draft WRMP and to seek feedback on our approached.

2.4.1.1 How this consultation has informed our plan

The content of these meetings has been incorporated into our plans. Topics covered are shown in Table 1, together with the technical report that contains details of each topic.

Table 1 Topics discussed with regulators and their respective technical reports

Topic	Technical report
1 in 500 deployable output	WRMP24 Technical Report – Supply forecast
Levels of service	
Climate change	
Environmental destination	

Topic	Technical report
Supply modelling approach	
Water Quality	
Outage	
Demand profiles	WRMP24 Technical Report – Demand for Water
Target headroom	WRMP24 Technical report – Allowing for uncertainty
Supply options	
Demand options	
Decision making	
Water transfers	WRMP24 Technical Report – Deciding on future options
PCC and Leakage targets	
Environmental assessments	WRMP24 Technical Report – Options Identification

2.4.2 Pre-consultation

Pre-consultation is a requirement of all water companies in the development of their WRMPs and allows regulators and stakeholders to comment on how we should develop our plan and the key issues and priorities that we should address. In order to achieve consistency and avoid duplication of effort, we aligned our pre-consultation with the informal consultation carried out on the emerging regional plan published by WRW in January 2022. Details of our approach and the timescales of the combined consultation exercise are set out below.

2.4.2.1 Approach to pre-consultation

As per the WRPG we commenced an enhanced pre-consultation with Ofwat, the Environment Agency, Natural Resources Wales and Natural England in November 2021. This consisted of a supporting statement that gave an overview of the ambition, methods and approaches of our plan. It covered:

- Progress with your WRMP19 delivery, any significant changes you expect, and how these will affect our plan;
- The resource zones on which our plan will be based;
- Problem characterisation assessment;
- Our planned approach to assessing climate change;
- Our indicative supply-demand balance at a resource zone level;
- Our approach to adaptive planning (where appropriate);
- Our provisional preferred schemes;
- The wider benefits and outcomes of our plan to deliver beyond a least-cost plan; and
- How our plan will reflect the relevant regional plans.

Pre-consultation gave us an early opportunity to get regulator feedback on our proposed approaches. Feedback was received from the Environment Agency and Natural England in January 2022 and a further submission was made to Ofwat consisting of data tables and a slide deck, which covered the topics above in more detail.

Our pre-consultation commenced in January 2022 to align with the informal consultation carried out on the draft regional plan. This consisted of a company-specific session held during a virtual event as part of the regional informal consultation. Attendees were asked to discuss their views and offer feedback and suggestions on key areas such as demand management, levels of service, the environment, and transfers. This event was followed by sending over 170 stakeholders a briefing note providing a summary of key areas of the plan including our resource zones, supply and demand and best value planning. It included an invitation to submit any views and

feedback, however, a set of key questions on which we wished to obtain stakeholder feedback was included, as shown in Figure 4.

There are a number of statutory consultees for our WRMP, namely the Environment Agency, Natural England, Natural Resources Wales, Ofwat, licenced water suppliers within our area and Cadw. For these stakeholders, we engaged in 'enhanced' pre-consultation[1].

However, in order to obtain a wide range of feedback from all interested parties, we also included non-statutory stakeholders in our pre-consultation exercise. These included environmental groups, water efficiency groups, customer interest groups, non-household retailers and property developers. Many of these consultees are those who have been identified from previous Drought Plan and WRMP engagement activities.

Figure 4 Stakeholder feedback questions included in our company plan pre-consultation

1. We would welcome views on our plans to meet the new government requirement of being resilient to 1 in 500 droughts by 2039.
2. Following on from question 1, we are testing customer support for accelerating this level of resilience. What is your opinion on resilience to emergency restrictions (e.g. standpipes)?
    a. Wait until 2039 (seven per cent chance of standpipes during 2025–2039/1 in 200 year)
    b. Accelerate (three per cent chance of standpipes during 2025–2039/1 in 500 year)
3. We are also testing customer support for different levels of service for temporary use bans (e.g. hosepipe bans);
    a. Status quo – 1 in 20 (23 per cent chance of TUBs in next five years)
    b. Align to best in region – 1 in 40 (12 per cent chance of TUBs in next five years)
    c. Align to best in country – 1 in 100 (Five per cent chance of TUBs in next five years)
4. Do you have any suggestions for options to improve the supply demand balance, either new sources of water or options to reduce the demand for water?
5. Our plan is to only export water to other areas of the country if that water is replaced by another option in the North West. What are your views on the potential for us to export water from the North West to other areas of the country when they are at risk of drought and replace this water with other options in the North West? Are there particular aspects of water trading that you would like us to consider in our plan? Note we will only transfer water if the transferred water is replaced elsewhere in our region.
6. Looking at our current published plan, are there any other specific areas that you consider should be a priority for improvement?
7. Are there any specific ways in which you prefer to be engaged or contacted as we develop the plan, including any ideas for collaboration that we could consider?

2.4.2.2 How this consultation has informed our plan

All consultation responses were collected in a register. Each response was then assigned an owner whose job it was to ensure that it was incorporated into our plan. Themes covered by the pre-consultations are provided in Table 2, cross-referenced to the technical reports in which they are covered.

Table 2 Topics covered in pre-consultation and their respective technical reports

Topic	Technical Report
Engagement	WRMP24 Technical Report – Customer and stakeholder engagement
Options	WRMP24 Technical Report – Options Identification
Catchment solutions/nature-based solutions	WRMP24 Technical Report – Options Identification
Place-based planning	WRMP24 Technical Report – Options Identification
Protected landscapes	WRMP24 Technical Report – Options Identification
Customer and third-party involvement	WRMP24 Technical Report – Options Identification
Regional planning	WRMP24 Technical Report – Deciding on future options
Transfers and trading	WRMP24 Technical Report – Deciding on future options
Preferred Schemes	WRMP24 Technical Report – Deciding on future options
Supply forecast	WRMP24 Technical Report – Supply forecast
Climate change	WRMP24 Technical Report – Supply forecast
1 in 500 resilience/levels of service	WRMP24 Technical Report – Supply forecast
WINEP	WRMP24 Technical Report – Supply forecast
Environmental Destination	WRMP24 Technical Report – Environmental destination
Water Quality	WRMP24 Technical Report – Supply forecast
SEA, HRA and Biodiversity	WRMP24 Technical Report – SEA WRMP24 Technical Report – HRA WRMP24 Technical Report – WFD
Natural capital	WRMP24 Main Report
Demand forecast	WRMP24 Technical Report – Demand for water
Demand savings/Retailers	WRMP24 Technical Report – Demand for water

2.4.3 Consultation

Once instructions were received from the Secretary of State to publish the draft plan for consultation, we did so on 7th December 2022 and entered into a 14 week consultation period, which closed on 15th March 2023. In accordance with the planning guidelines, we made copies of our draft Water Resources Management submission available to both statutory and non-statutory consultees. This was in addition to our own distribution list from previous Water Resources Management Plan and Drought Plan engagement, including those organisations involved in pre-consultation discussions. A full response to feedback received has been covered in the Statement of Response.

2.4.3.1 Approach to consultation

We published a customer friendly summary alongside our Water Resources Management Plan and used social media to highlight our consultation and associated events with customers and stakeholders. Our draft plan was

shared on our corporate website, LinkedIn, Twitter and the *collab portal*[2]. All consultees listed in the 2007 regulations were also emailed directly to inform them that our consultation period had started. Our social media and press release posts picked up over 6,500 impressions and our Water Resources webpage has had over 1000 visitors since the draft plan was published in December 2022; with 20% clicking through and opening the main document. We ensured that all consultee groups were covered by our engagement activities, in line with the Water Resources Planning Guideline. Our website also contained an online form with our consultation questions and responses submitted here were sent directly to the wrmpconsult mailbox and the secretary of state (Figure 5).

The consultation questions we asked were as follows:

1. We are planning to meet the new government requirement of being resilient to 1 in 500-year droughts by 2039 (before then we will be resilient to 1 in 200-year droughts). This improved resilience will be delivered by a combination of leakage reduction and demand management. We would appreciate your thoughts on:

a. The importance of this increase in resilience to you;

b. Our method of delivery, i.e. through reducing leakage and managing demand (e.g. offering smart meters, conducting water efficiency audits etc.); and

c. The timing of the change, i.e. if 2039 is acceptable or you would prefer it to occur sooner or later.

2. By 2050, our ambition is to halve leakage through investment in asset health, innovation and network optimisation. This will require significant investment, what is your view on this approach?

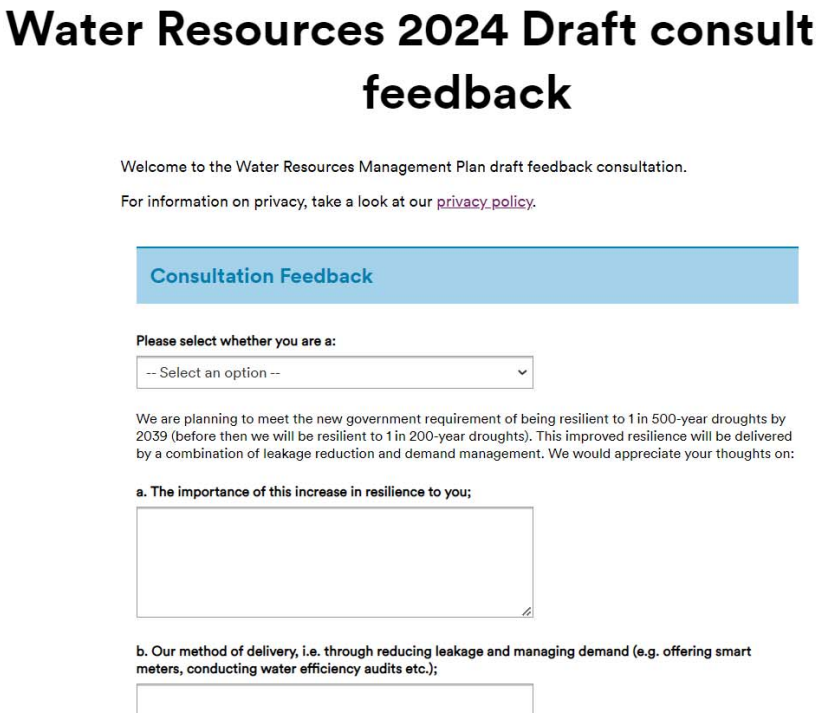
3. By 2050, our ambition is to help reduce customer use per person by over 20 per cent (from around 140 to 110 litres per person per day). To achieve this we will implement a large-scale programme of smart metering, as well as providing water efficiency audits and our education programme. This will all require significant investment and will need to be combined with government interventions, for example the labelling of water-using products such as taps, showers, toilets, dishwashers and washing machines. What is your view on this approach?

4. With regards to water trading, our plan is to only export water to other areas of the country if the transferred water is replaced elsewhere in the North West. We have developed a set of key criteria which a future water transfer must adhere to: our water trading principles (see below). There are also benefits of water trading for the North West, for example the options developed for trading can also be used to improve resilience here. What are your views on the potential for us to export water from the North West to other areas of the country when they are at risk of drought, and replace this water with other options in the North West? Are there particular aspects of water trading that you would like us to consider in our plan?

5. The North West is one of the most vulnerable areas in the country for temporary use bans (hosepipe bans), with a resilience of five per cent risk per year (1 in 20 years). In line with customer preferences identified by our research, our plan aims to improve this to 2.5 per cent risk per year (1 in 40 years) to be more aligned with neighbouring water companies. We would appreciate your views on whether this should be a priority for us?

[2] UU collab portal, https://collab-uu.co.uk/

Figure 5 Screenshot of online web form used to capture answers to consultation questions.



Water Resources 2024 Draft consultation feedback

Welcome to the Water Resources Management Plan draft feedback consultation.

For information on privacy, take a look at our privacy policy.

Consultation Feedback

Please select whether you are a:

-- Select an option --

We are planning to meet the new government requirement of being resilient to 1 in 500-year droughts by 2039 (before then we will be resilient to 1 in 200-year droughts). This improved resilience will be delivered by a combination of leakage reduction and demand management. We would appreciate your thoughts on:

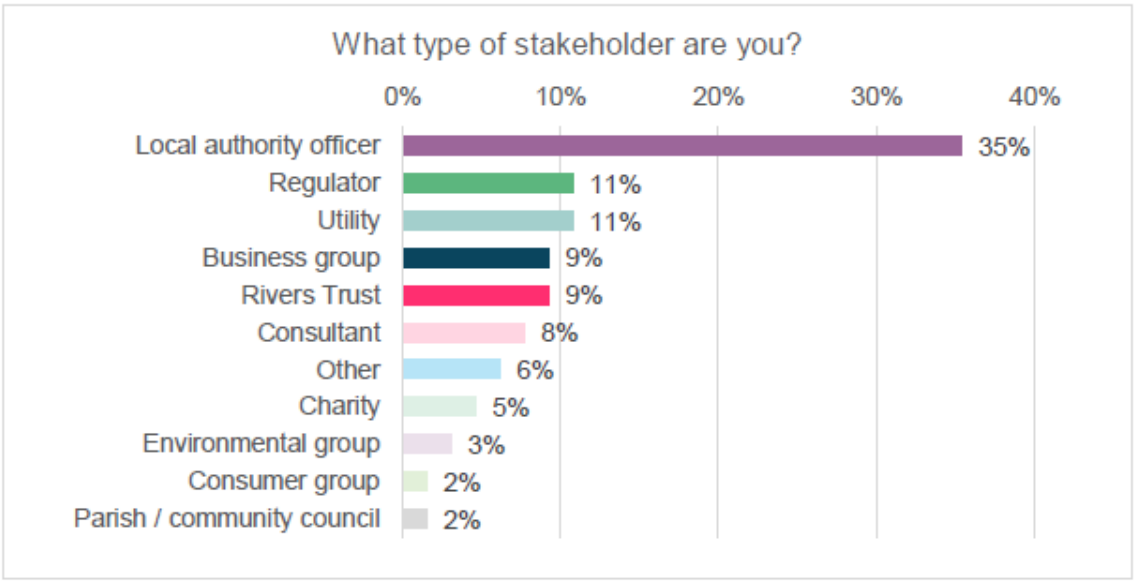
a. The importance of this increase in resilience to you;

b. Our method of delivery, i.e. through reducing leakage and managing demand (e.g. offering smart meters, conducting water efficiency audits etc.);

In addition to this, on 12, 19 and 24 January 2023, we hosted a series of workshops focused on our draft Water Resources Management Plan. Each consultation event was designed to seek feedback from stakeholders on the following topics: reducing leakage and demand; improving levels of service; protecting and enhancing the environment; and water transfers. The fifth session of each workshop comprised a presentation from Water Resources West, followed by a Q&A.

The first two workshops were hosted online, using Zoom, and the third was held in person, in Preston. Each session consisted of a short presentation given by UU representatives, followed by facilitated discussions in either virtual or in-person breakout rooms. In addition, stakeholders were asked to vote, using Slido, on a number of topics. A total of 83 stakeholders participated in the workshop, representing 60 organisations. The most widely represented stakeholder types were local authorities (35%), regulatory bodies (11%), and utilities (11%) (Figure 6).

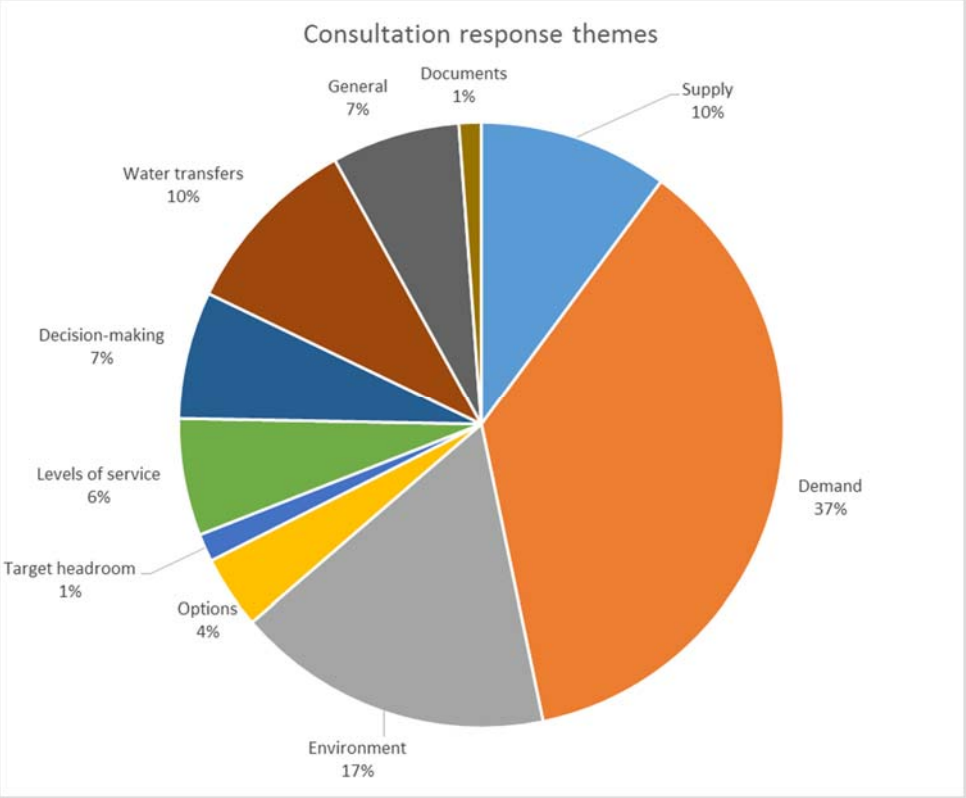
Figure 6 Breakdown of stakeholder type at consultation events



2.4.3.2 How this consultation has informed our plan

We received 26 written consultation responses during our consultation period, which were collated in a tracker and each response was then assigned an owner whose job it was to ensure that it was incorporated into our plan. As several respondents commented on more than one issue, or on different aspects of a single issue, there were over 350 detailed comments to address. The themes discussed are shown in (Figure 7).

Figure 7 Pie chart showing themes of written responses received during dWRMP24 consultation



Qualitative and quantitative feedback received during the three consultation workshops was also taken on board. We carefully considered all feedback and made changes to our plan in response. Full details of all consultation feedback is provided in our *Draft WRMP24 Statement of Response.*

2.4.4 Drought Plan activities

During the period 2019 to 2021 we worked on a major update to our Final Drought Plan 2018, incorporating the latest drought plan guidelines published by the Environment Agency in April 2020. We conducted a pre-consultation for this update, primarily covering statutory consultees such as regulators, the Canal and River Trust, Defra and the Welsh Assembly Government, but also including groups that had been vocal in the previous drought plan consultation, such as Windermere and Ullswater stakeholders.

On 30 April 2021, the Secretary of State for Environment, Food and Rural Affairs confirmed that our Draft Drought Plan 2022 could be published and publicly consulted on. The public consultation period ran for seven weeks from 5 May to 23 June 2021 inclusive.

Our Draft Drought Plan 2022, and its associated documents, were published on our website and we directly notified over 300 stakeholders. As part of the public consultation, we held a virtual stakeholder event on 9 June 2021, which was attended by members of councils, flood action groups and customer challenge groups. Separate liaison was also carried out with individual organisations, including regulators and key stakeholders. We received 18 consultation responses from a range of stakeholders, raising 65 issues, many of which have some relevance to our WRMP.

We carefully considered all representations and amended the Draft Drought Plan where appropriate. A detailed list of all issues raised, and our responses to them, is given in our Statement of Response, which was submitted to the Secretary of State alongside our Revised Draft Drought Plan 2022 in August 2021. In developing our WRMP,

we have taken account of the changes to our Drought Plan and any relevant Drought Plan consultation responses received, where appropriate.

2.4.4.1 How this consultation has informed our plan

The responses that we received from our drought plan consultation fell into the following themes listed in Table 3. We have identified below, where in our WRMP those topics are addressed.

Table 3 Topics raised in the Drought Plan and the respective technical reports where they are addressed

Topic	Technical Report
Customer and stakeholder impact	WRMP24 Technical Report – Demand for Water
Demand management	WRMP24 Technical Report – Demand for Water
Water use restrictions	WRMP24 Technical Report – Demand for Water
Communications	WRMP24 Technical Report – Demand for Water
Document structure and content	N/A
Drought levels	Implicit in WRMP24 Technical Report – Supply forecast
Drought management actions	Implicit in WRMP24 Technical Report – Supply forecast
Drought permits and orders	Implicit in WRMP24 Technical Report – Supply forecast
Environmental issues	SEA, HRA
Water Resource Management Plan	All documents
Windermere	Implicit in WRMP24 Technical Report – Supply forecast

3. Customer engagement

We put customers at the heart of everything we do, and we recognise that customers have a huge part to play in the future of our region. When planning for the future, we need to ensure that we are keeping pace with customer expectations and that we continue to deliver efficient and effective services to their satisfaction.

Our WRMP, together with our Drainage Wastewater Management Plan (DWMP), form key components of our wider business planning process. We are undertaking a wide range of customer research projects to support the preparation of our next Business Plan covering the five-year period from 2025–2030, and the outcome of many of these projects directly informs our preparations and priorities for the WRMP.

Our WRMP24 programme of research utilised innovative methods and an enhanced approach to build on previous research and consultation exercises undertaken for our WRMP 2019 and previous business plans. The main inputs to the plan development will be both:

- Quantitative: the relative preferences and valuations of different options, determined for example from Willingness-to-Pay surveys; and
- Qualitative: a set of views from focus groups and panels etc.

We recognise that good engagement with customers requires a dynamic, multifaceted approach, which seeks continual feedback across multiple channels, which we can assimilate and act upon quickly.

Throughout the process, we have also engaged with our Independent Customer Challenger Group (ICG) group 'YourVoice', which was established in 2015 to provide independent assurance and advice on our customer engagement strategy and research, and its impact on our business plan proposals. The YourVoice panel influenced the development of the Water Resources Management Plan both directly and through influencing our wider business plans. Over the course of WRMP24 development, we regularly met with YourVoice to discuss our customer research and sought scrutiny of the quality, design and reach of our customer participation to make sure that our customer research is high quality and the plan consistently reflects customers' views and priorities. Where appropriate, we also worked with YourVoice to seek third-party expertise to validate results. YourVoice is fully engaged across our research programme covering design, executions, analysis and application. They are invited to view live research focus groups and live dissemination events.

3.1 Research objectives

The customer research carried out for our WRMP 2024 was used to shape, develop and test the acceptability of our preferred plan. Our research objectives break down into five principal areas:

Shape

Strategic choices: Customer views on the core choices that will inform our plan, including, Levels of service and acceptability testing including leakage and demand management;

Trading: Customer attitudes towards water transfers, including, research conducted by our regional group, attitudes towards water taste and smell;

Develop

Best Value: Customer attitudes towards the sort of options that they would prefer to be selected, comprising option qualitative and quantitative assessment; and

Supporting Research: Comprising research to assess and understand the ongoing impacts of COVID-19 on customer attitudes and water usage behaviour and research to understand customers' views on climate change.

Test

Acceptability Research: Used to understand acceptability of preferred plan and find out if any changes needed to be made

The following sections will detail these three areas of research, explaining our research approach, the results of the research, any conclusions that can be drawn and how we have used the findings to inform our plan

4. Strategic choices

In order to develop our preferred plan and gain insight into customer willingness to pay for our strategic choices of Temporary Use Bans (TUBs) and Emergency Drought Order (EDO) levels, we conducted a piece of "Choice Experiment" research. Historically, WRMPs have focussed on minimising the cost of securing future water supplies by following a 'least cost' methodology. However, there is now formal recognition among water companies and regulators that factors other than cost (for example, carbon, impact on the environment, leakage levels, societal well-being, etc.) are important and should be properly considered in the development of a WRMP. Consequently, the WRPG have been updated and companies are now required to follow a 'Best Value Planning' approach via a Multi Criteria Decision Analysis (MCDA) process/tool.

Additionally, water companies are now required to work collaboratively to develop a strategic Regional Plan for water resources. Company WRMPs need to reflect the Regional Plan. To this end, United Utilities and Severn Trent (members of the Water Resources West (WRW) group), commissioned a joint piece of customer research and South Staffs Water (another member group) shared the same metrics choice experiment design with the other two water companies. The decision weights were then incorporated within the common Water Resources West MCDA tool. This report outlines the findings for UUW that fed into the development of our plan.

This choice experiment research is referenced again in Section 6.2.

In addition to this research, we also carried out "Acceptability" research in which we presented our preferred plan to customers to establish its acceptability. Details of this research can be found in Section 9.

4.1 Levels of service: Temporary Use Bans

We supply water every day to a population approaching seven million people and at present we are able to maintain a balance of water supply and demand. However, there are a number of future challenges that could threaten this balance, or impact UUW's resilience, including:

- Growing population;
- Predicted climate change; and
- Environmental legislation, which will restrict us from taking water from the environment, meaning that in the future there will be less water in sources, such as lakes and rivers, which we currently takes water from.

In the event of drought, we will take a range of tiered actions to safeguard remaining supplies, which can include water restrictions to customers in extreme events.

In dry conditions, when it appears as though a severe drought may develop, we will look to implement temporary use bans (TUBs). Formerly known as hosepipe bans, TUBs restrict a number of domestic activities involving the use of a hosepipe, as well as other activities such as filling swimming and paddling pools. Currently, there is a five per cent risk of temporary use bans happening each year (1 in 20 year), which translates to a 23 per cent risk of happening at least once in the next five years.

Compared to other water companies, this risk of restrictions is relatively high. The company in the WRW group with the lowest likelihood of needing to implement a TUB is South Staffordshire Water, with a likelihood of 12 per cent over five years. In other parts of England this likelihood falls as low as five per cent. We, therefore, sought out customers' views on the option to reduce the likelihood of TUBs occurring in the North West to similar levels to other companies, whilst recognising potential bill implications of the additional investment required to achieve this.

In order to calculate the customer preference for improved levels of service and the willingness to pay for improved service, we conducted a Stated Preference Choice experiment, which is described below.

4.1.1 Research approach

Customers in both domestic and business settings were invited to choose which level of service was preferable when shown different options with the associated risk of water restrictions occurring and the impact on the customer's bill.

Detailed information about the two types of water restrictions was shared with the respondent through a series of Show Cards.

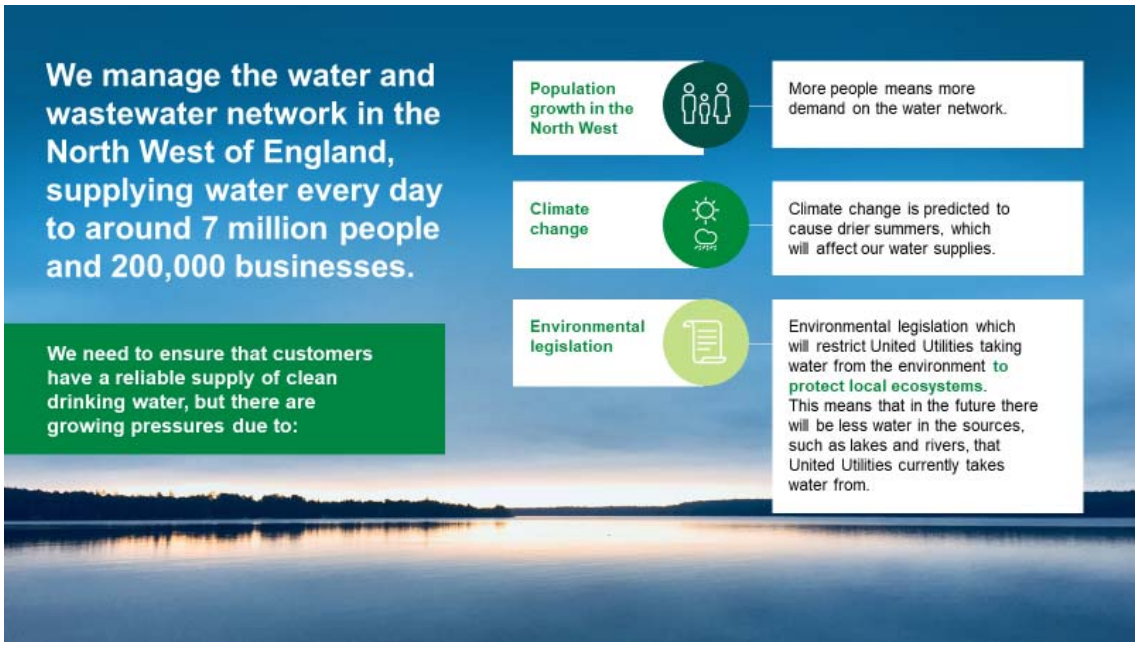
Respondents were shown three options in each iteration for TUBs. Option 1 was the status quo/no change option and was included in all sets shown to the respondent. Options 2 and 3 were improvements to the level of service that is currently received. This is shown in Table 4.

Table 4 TUBs Levels of service

Option	Level of service
Option 1	No change five per cent chance per year (1 in 20)
Option 2	Improvement to 2.5 per cent chance/year (1 in 40)
Option 3	Major improvement to one per cent chance/year (1 in 100)

The sample size of this research was 671 domestic customers. This included representative samples at risk groups such as those with disabilities, low income and those who said they struggled to pay their bills.

Figure 8 Example of 'show cards' for TUBs experiment



The bill impact shown on the first iteration was randomised to avoid a starting point bias.

A double-bounded dichotomous choice model was used (i.e. if the respondent rejected the first price shown for improvements the question was posed again with a lower price point, but if the respondent accepted the first price point then the repetition included a greater bill impact).

Domestic customers were shown a bill impact in Pounds based on their bill, and business customers were shown a percentage bill increase.

4.1.2 Research results

Figure 9 shows the level at which domestic respondents preferred Option 2 rather than the status quo when plotted against the impact on their bills. At a bill impact of £1.90, 66.9 per cent of respondents preferred the improved level of service. The figure also shows that 60 per cent of customers were willing to pay £4.75. The average willingness to pay for the improved level of service was £6.04.

Figure 9 : Percentage of Household customers willing to pay for improvement in TUBs to 2.5 per cent (1 in 40). Red dashed line shows willingness to pay of £4.75 at 60 per cent

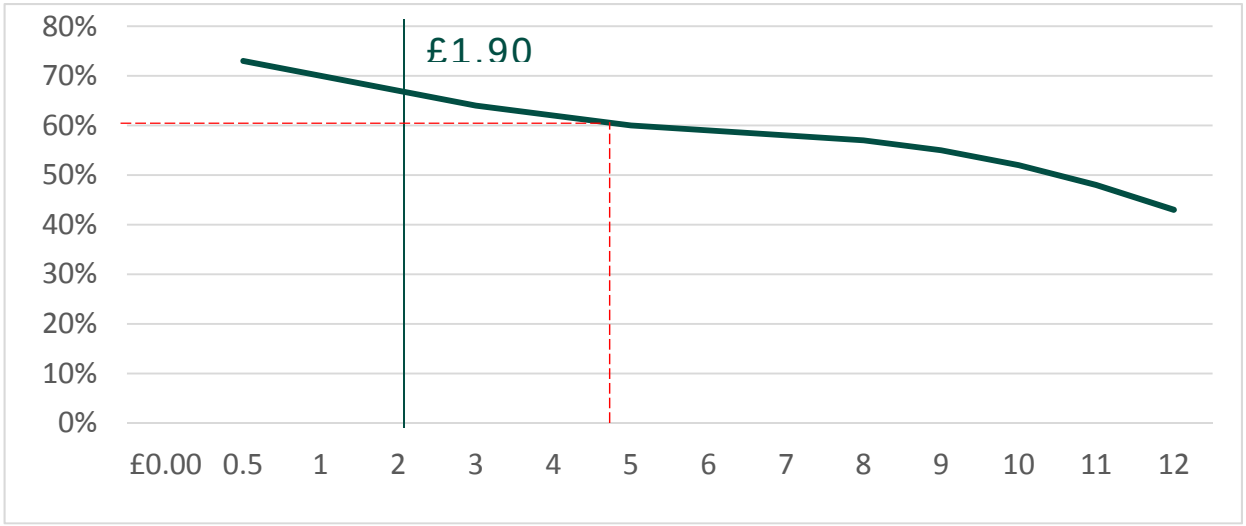
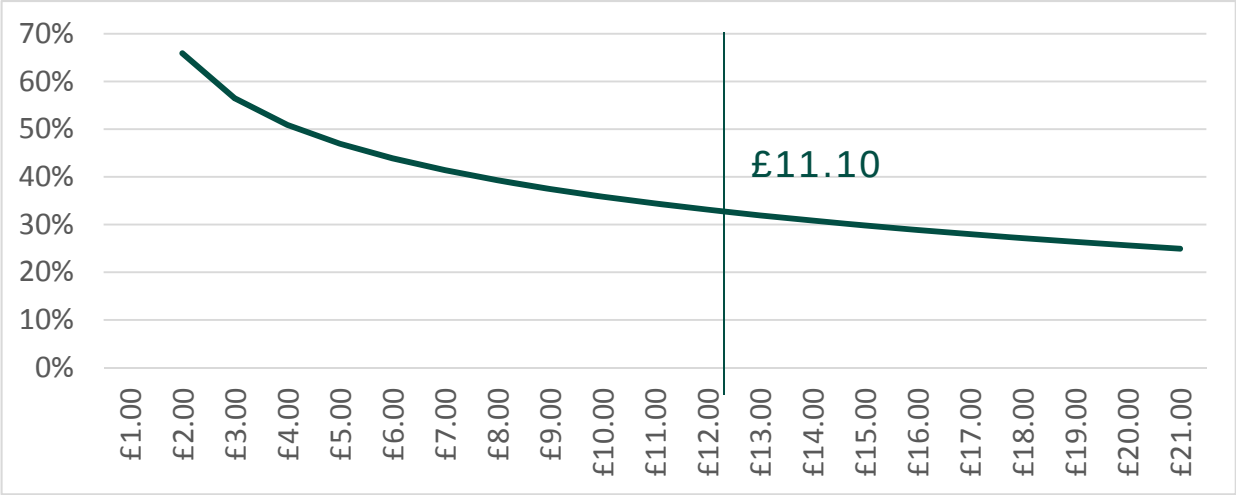


Figure 10 shows the level at which domestic respondents preferred Option 3 rather than the status quo when plotted against the impact on their bills. At a bill impact of £11.10, which is the amount that we have calculated to

deliver this improved service level, just 33 per cent of respondents preferred the improved level of service. The average willingness to pay for the improved level of service was £8.38.

Figure 10 Percentage of Household customers willing to pay for improvement in TUBs to one per cent (1 in 100)



4.1.3 Conclusions

The results suggest that customers are willing to pay the average of £1.90 on an average bill to increase their service levels from the status quo to 2.5 per cent (1 in 40), with 67 per cent supporting bill impacts at this level. The point at which the majority of customers would not be willing to pay is £4.75. This provides a margin of £2.85 before they were no longer willing to pay for the improved service level. However, customers are not willing to pay the £11.10 that would be required for an increase in service from the status quo to one per cent (1 in 100) TUBs frequency. It should be noted that this work was done in isolation of other bill impacts. However, TUBs resilience was also included in a 'whole package' acceptability test, which is detailed in Section 8.

4.1.4 How this consultation has informed our plan

We note that the WRW research that looked at previous studies from the four companies (see Section 5.1) indicated that WRW customers "are largely relaxed about current service levels of restrictions and have little appetite to pay more to reduce them". However, we see from this focused research that customers of UUW do not appear to hold this view. There is a real willingness to pay for service improvement.

This in conjunction with the results of the acceptability testing, has led us to put forward a plan where TUBs resilience is increased but that this is done in such a way as to minimise the cost to customers.

4.2 Levels of service: Emergency drought orders

In the event of an extreme drought, if normal water sources became fully depleted, it could be difficult to supply water directly to customers' taps. As a result, more serious emergency measures such as mobile water tanks, known as bowsers, could be brought in to provide customers with water. We could also implement standpipes, which are freestanding pipes with taps in the street, or rota cuts (when water would only be available at certain times).

As these restrictions are more extreme there is, therefore, a smaller chance of them occurring. Consequently, in this scenario we have provided the percentage chance of it happening at least once in the next 25 years. The government has recently introduced a new requirement that by 2039 we must reduce the chance of these emergency measures occurring to at no more than once in 25 years and no more than five per cent.

As we did for TUBs, we conducted a Stated Preference Choice experiment in order to calculate the customer preference for improved levels of service and the willingness to pay for improved service. The research approach is described below.

4.2.1 Research approach

Respondents were shown two options. Option 1 was the status quo/no change option and was included in all sets shown to the respondent. Option 2 was an improvement to the level of service that is currently received. This is shown in Table 5.

Table 5 Emergency drought orders levels of service

Option	Level of service
Option 1	No change (wait until 2039)
Option 2	Improvement (1 in 500 as soon as possible)

It should be noted that while TUBs only apply to household customers, emergency drought orders apply to both household and business customers. Additionally, as business customers have wider variation in bills due to differences in consumption, the concept of an average bill is not relevant. Instead, bill impacts were framed in terms of percentage increase.

4.2.2 Research results

Figure 11 shows the level at which domestic respondents preferred Option 2 rather than the status quo when plotted against the impact on their bills. At a bill impact of £1.10, 82.3 per cent of respondents preferred the improved level of service. The figure also shows that 60 per cent of customers were willing to pay £11.86 and 70 per cent of customers would be willing to accept a bill increase of £5.90. The average willingness to pay for the improved level of service was £4.56.

Figure 11 Percentage of Household customers willing to pay for improvement in EDO level of service

Figure 12 shows the level at which non-domestic respondents preferred Option 2 rather than the status quo when plotted against the impact on their bills. At a bill impact of +0.4 per cent, which is the amount that we have calculated to deliver this improved service level, 62.5 per cent of respondents preferred the improved level of service. The figure also shows that 60 per cent of customers were willing to pay +0.61 per cent.

Figure 12 Percentage of Business customers willing to pay for improvement in EDO level of service

4.2.3 Conclusions

For household customers, the research shows an extremely strong acceptance of an increased bill in order to move as soon as possible to a 1 in 500 chance of emergency drought orders. While the acceptance of business customers was much lower, at just above 60 per cent.

4.2.4 How this consultation has informed our plan

Although there was strong support for this from household customers, due to much lower support from businesses, we will aim to bring in EDO resilience to 1 in 500 2039 by using the demand management policy.

5. Trading

Water trading can be an emotive topic amongst customers and it is something we really value their opinion on. In order to understand views on water trading, the following research was carried out:

- WRW regional customer research
- Water quality quantitative research
- Water quality acceptability (Hall tests)

Given the nature of water trading, it was important to take a regional view, but also engage with customers directly and hear their views on changing water sources and allow them to try water of varying hardness to inform their opinions.

5.1 WRW regional customer research

To obtain a summary of customer views of each of the four WRW companies, research from those companies was analysed in order to understand the views of the customers of the Water Resources West Region as a whole. A consistent set of customer research questions for water resources was agreed by WRW in November 2020. Using the previous individual company research and, in some cases collaborative research across the companies, we commissioned Shed Research, an independent consultancy specialising in research synthesis to triangulate the findings to inform the WRW emerging plan and individual company plans. This exercise was also used to highlight any gaps in our insight and address these.

Further iterations of this research were carried out in May 2022 and March 2023, as we continued to work collaboratively with other WRW companies throughout the development of our plan. This research was triangulated using CCW and SIA triangulation best practise, and any changes in customer views were highlighted. The views obtained in later iterations aligned with issues raised in the original March 2021 research, which had already been incorporated and addressed in our plan. This provided reassurance that our revised draft would still be meeting customer needs.

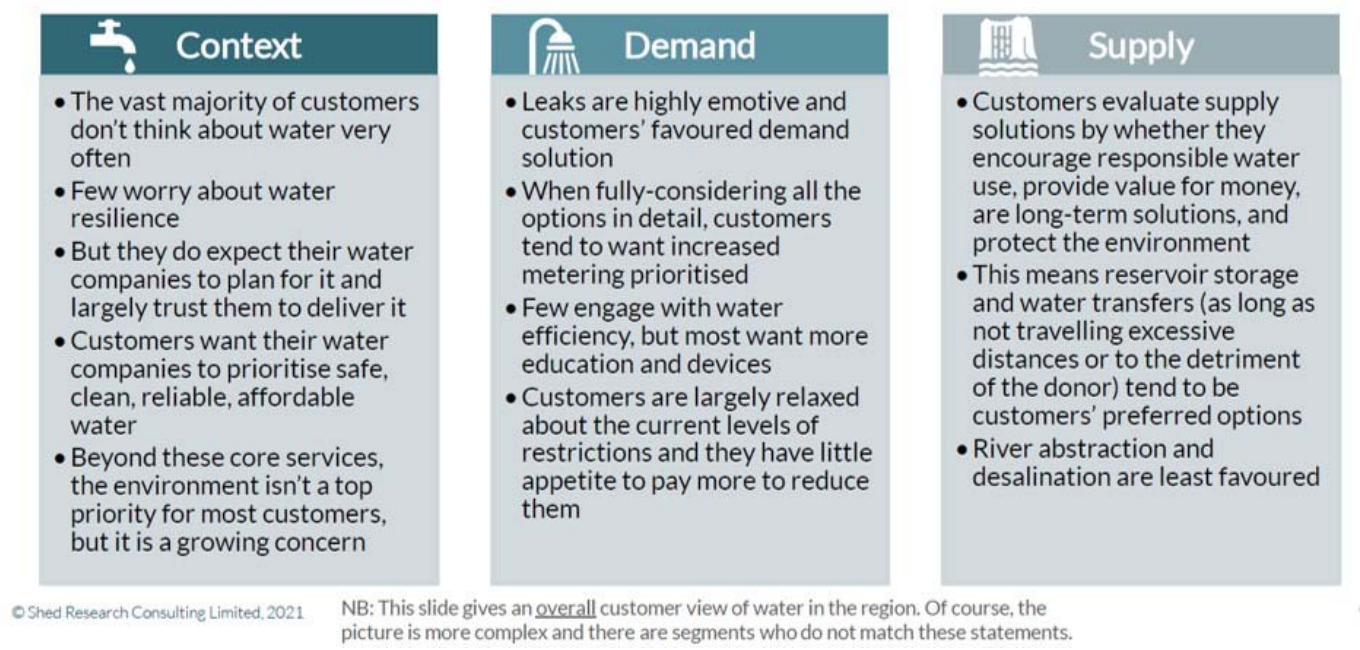
5.1.1 Research approach

WRW commissioned a piece of research in March 2021 to analyse WRMP19 and PR19 research studies from each of the four water companies in order to provide a robust evidence base for customers' preferences across the region. Wherever possible, the latest 2020 research was included to indicate how customers' views may have changed, particularly in the context of the COVID-19 pandemic.

The research was split into qualitative and quantitative analysis. Qualitative analysis involved thematic analysis of 57 pieces of research, mainly from PR19 and WRMP19 customer research, including water efficiency, metering, interruptions, source preferences and transfers. Insight fell into three categories: Context, Demand and Supply.

5.1.2 Research results

Figure 13 Summary of WRW qualitative insight



Customers' main priority for the region is safe, clean, reliable, and affordable water. When it comes to environment issues, customers do expect water companies to be planning for the impact of climate change and building a long-term, sustainable supply. Analysis also indicated that customers are more sensitive to changes in appearance of their water compared to taste and smell. Hard water was raised spontaneously by a vocal minority. The research showed that it is important to inform customers (both household and non-household) directly about variations in water quality immediately and they want to know the cause, actions taken and likely duration.

5.1.3 Conclusions

Overall, customers favour demand options above any other option, but amongst supply options customers prefer reservoir storage and transfers. Findings from this research show that customer opinions expressed in individual research, such as reducing leakage and increasing TUBs resilience, are widely expressed across the region, which adds further support to the decisions we have made in our plan. Quantitative analysis used PR19 and WRMP19 research to provide an overall value (aggregated for the region) for interruptions, taste and smell, discolouration and restrictions on use. These results can then be used to assess future projects and programmes for water resources. The results were consistent with the qualitative analysis and indicated:

- High value on water aesthetics compared with short-term interruptions; and
- High value on restrictions linked to extreme drought e.g. standpipes.

The report shows the importance of joining up research and approaches at a regional scale, to ensure long-term water resilience for all customers.

5.1.4 How this consultation has informed our plan

From the research, a customer valuation tool was developed for use by the water companies to produce a 'willingness to pay' metric for their options, which could subsequently be inputted into the decision making tool and informed the options selected. It was noted that customers are broadly happy with current serviced levels, but the combination of the wide range and scope of this aggregated view, compared to the more specific and direct research we conducted (see Section 4.1) shows that there is a real, but limited willingness to pay for service improvement. The findings from this research were used to inform the PWS customer supply resilience metric, which was used to support decision making consistently across the region.

The report also found significant variation between companies' valuations of service measures, derived from different forms of PR19 research and analysis, therefore, triangulation was used to produce a single value. These

concerns have now been addressed through the establishment of Water Resources West, which provided the opportunity to jointly commission research and share findings across the region. Going forward, the WRW working group will continue to approach research in this joined-up way.

5.2 Water quality quantitative research

A representative sample of over 1,000 household customers was surveyed online in December 2020, as part of a wider programme of research using Hall tests (see Section 5.3) and focus groups, which was on hold/delayed due to the impacts of COVID-19 on face-to-face customer interactions. The aim was to provide insight on customers' attitudes to changes in drinking water quality relating to changes made to balance water resources more widely. In particular, the survey explored customers' perceptions of a potential change in water supply due to future water transfer arrangements.

Specific objectives were:

- What impacts are acceptable to customers, and where are any thresholds where acceptability tails off;
- Are there any key differences across the region in what is or isn't acceptable;
- Does the reason for the use of water make any difference to customers' perceptions/attitudes/acceptability of change; and
- How we should communicate with customers about any planned changes to water quality to help mitigate any concerns and what language would work best in communicating with customers and with the public at large about such issues.

5.2.1 Research approach

An online approach was adopted to survey household customers using a customer sample. The 'core sample' represents customers across our region. A 'boosted sample', which represents areas of the region that may be most impacted by changes in water quality has been analysed separately.

This research comprised two samples, a 'core sample' of 970, which represented customers from across the region and a 'boosted sample', which represented customers in Chester and Runcorn. The reason why these two areas were treated separately was because they were identified as areas of significant impact to water quality changes.

5.2.2 Research results

The results were broken down into three main topics:

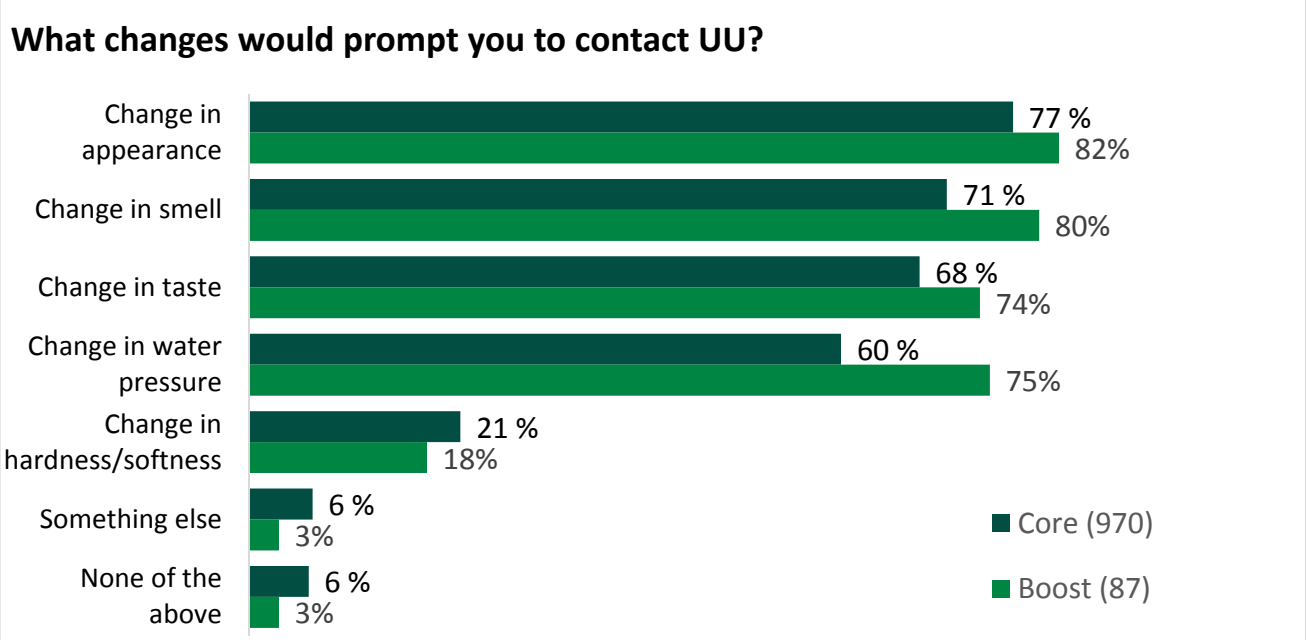
- Current perceptions of water quality;
- Reactions to a change in supply; and
- Communicating changes.

The findings are summarised below.

Current perceptions of water quality

At an overall level, customers are reasonably satisfied with the service they receive from us, with the majority drinking their tap water and one in five filtering it beforehand. On the whole, attitudes towards water quality are positive, although changes in appearance, smell, taste and water pressure would all prompt customers to contact us. At a total level, customers are more concerned about the appearance of their water than where it is sourced from or whether it is 'soft' or 'hard'.

Figure 14 Graph showing which changes would prompt customers to contact UU



Reactions to a change in supply

As the duration of the change in supply increases, so does the level of concern, with customers in Cumbria and Liverpool having the highest level of concern. Views on what duration/frequency would cause the most concern are split by different subgroups. However, there are relatively high levels of acceptability across all events/circumstances but despite high levels of acceptability, there is some variation across subgroups.

Communicating changes

Three-quarters of customers would want to be notified of a change and of those, four in five would want to be notified every time. A notification about a change in supply is sufficient for the majority of customers and would not prompt them to contact UUW.

5.2.3 Conclusions

It is evident from the research that water quality is something that many customers hold strong views on. The perceptions of such can vary by region, age and whether they believe they have hard or soft water. Customers are open to a change in supply but want to be notified, and most crucially informed on the reasons behind it.

- Two-thirds of customers care about whether they are supplied with hard or soft water, and three in five want to know where their water is sourced from;
- Any change in water quality, whether by taste, smell or appearance is going to prompt inbound communications from customers – if they are not notified prior;
- Even when notified, there are still concerns over the impact on water quality. Customers question whether the 'new' water will be inferior, how will this impact their kitchen appliances, do they need to fit filters etc. Ensuring appropriate information is provided to customers around these questions will be crucial;
- The level of concern is exacerbated by the potential duration of any change in supply. The majority are prepared to accept a change for up to a week, anything over this and customers are more likely to take issue;
- Education on the reasons behind a change in supply is crucial to customer buy-in. When prompted, there is a high level of acceptability for a change in supply across a number of events/circumstances; and
- Eighty-five per cent of customers would find a change in supply acceptable if it was due to having to transfer water outside of the North West to areas in need, however, this drops off to 67 per cent for customers in Cumbria.

This data provides strong contextualised evidence on the perceptions of water quality and the impact a change in supply would have.

5.2.4 How this consultation has informed our plan

The fact that there is broad acceptance to changes in water sources, provided that any changes are communicated supports trading. This is because, in order to enable trading, we may have to use alternative sources that would lead to changes in water properties.

Provided any changes are communicated in advance and were temporary, customers appear to be content with these changes. It should be noted, however, that there are certain regions such as Cumbria that are less amenable so steps should be taken to limit the effect of trading in these areas.

5.3 Water quality acceptability (Hall Tests)

The purpose of this study was to explore customer reactions to the proposition that, from time to time, the water quality (hardness) that they experience may deviate from their usual blend.

The specific objectives were:

- What impacts are acceptable to customers, and where are any thresholds where acceptability tails off;
- Are there any key differences across the region in what is or is not acceptable;
- Does the reason for the use of water make any difference to customers perceptions/attitudes/acceptability of change; and
- How should United Utilities Water communicate with customers about any planned changes to water quality to help mitigate any concerns and what language would work best in communicating with customers and with the public at large about such issues.

5.3.1 Research approach

This research comprised of nine focus groups and 12 Hall tests. This was spread across four different areas of UUW's region (Crewe, Wythenshawe, Southport and Widnes) and across multiple days, with customers testing samples of different levels of hardness/softness.

Four locations were selected based on a few different criteria. Each location had supplies with differing water hardness levels, and some areas were more likely than others to be affected by water transfer activity in the future.

With the exception of the pilot, which took part in Crewe and was pre recruited, participants were recruited off the nearby streets and invited to test different water hardness levels in nearby hotels and event halls. Three hall tests were conducted per location.

5.3.2 Research results

The research results were divided into the different areas:

Wythenshawe

Residents in Wythenshawe cared significantly more about where their supply is sourced from and if it is hard/soft; but despite currently being supplied the softest water, they were actually more accepting of the hardest water level they tested. Results can be seen in Table 6.

Table 6 Wythenshawe Hall test results

Measure	Group	Results
Satisfied with overall quality	Perceptions of current supply	72%
Satisfied with taste		63%
Claim to be aware of current supply source	Desire to know about water supplied	16%

Measure	Group	Results
Important to know where water is sourced from		68%
Care whether home is supplied with hard/soft water		61%
Want to be notified about change in water supply	Desire to know about changes	78%
Likely to contact United Utilities Water if notified of change		59%
How concerned would you be if United Utilities Water changed the source of the water		4.8/10 (mean)

Crewe

The hall tests in Crewe revealed that residents marginally preferred their current supply (moderately soft) over the slightly softer level and the slightly hard level. However, significantly less found the moderately hard level acceptable. Results can be seen in Table 7.

Table 7 Crewe Hall test results

Measure	Group	Results
Satisfied with overall quality	Perceptions of current supply	80%
Satisfied with taste		68%
Claim to be aware of current supply source	Desire to know about water supplied	20%
Important to know where water is sourced from		51%
Care whether home is supplied with hard/soft water		43%
Want to be notified about change in water supply	Desire to know about changes	84%
Likely to contact United Utilities Water if notified of change		34%
How concerned would you be if United Utilities Water changed the source of the water		4.8/10 (mean)

Widnes

Residents in Widnes were as accepting of their current supply as they were of the softer level. Results can be seen in Table 8.

Table 8 Widnes Hall test results

Measure	Group	Results
Satisfied with overall quality	Perceptions of current supply	70%
Satisfied with taste		63%

Measure	Group	Results
Claim to be aware of current supply source	Desire to know about water supplied	19%
Important to know where water is sourced from		48%
Care whether home is supplied with hard/soft water		35%
Want to be notified about change in water supply	Desire to know about changes	80%
Likely to contact United Utilities Water if notified of change		49%
How concerned would you be if United Utilities Water changed the source of the water		4.6/10 (mean)

Southport

Despite having relatively hard water for their current supply, residents' perceptions of this were not that different from the other locations tested. Results can be seen in Table 9.

Table 9 Southport Hall test results

Measure	Group	Results
Satisfied with overall quality	Perceptions of current supply	70%
Satisfied with taste		66%
Claim to be aware of current supply source	Desire to know about water supplied	20%
Important to know where water is sourced from		44%
Care whether home is supplied with hard/soft water		39%
Want to be notified about change in water supply	Desire to know about changes	80%
Likely to contact United Utilities Water if notified of change		40%
How concerned would you be if United Utilities Water changed the source of the water		4.1/10 (mean)

5.3.3 Conclusions

It is evident from this research that water quality is something that many customers hold strong views on, but the majority are unable to clearly distinguish between the quality of different water hardness levels – especially when it comes to taste. Some appear to simply prefer the taste of softer water, whilst others prefer harder water.

The majority found the taste of all water hardness levels acceptable across the four locations, suggesting that changing level will be accepted in the majority of cases.

The only exception was in Crewe, where significantly less found the moderately hard level acceptable compared to the current moderately soft level. This was mirrored in the lather-ability tests, although there was less acceptance of some of the higher hardness levels in the softer water areas.

In the hot water tests, the higher hardness levels resulted in duller looking tea and an accompanying scum.

Around half of customers felt it is important to know where their water comes from. This varied by location – with 24 per cent more wanting to know in Wythenshawe vs. Southport.

The majority say they would want to be notified of a change in their water source.

The main message to get across is reassurance about the quality and safety of their water. Letter was the most preferred channel, followed by email.

Most were accepting of the reasons why their source would change. Transferring water outside of the region was the least accepted, yet still had 75 per cent acceptability. This mirrored sentiment in the focus groups.

Whilst most would not notice a change if not told, some people are highly sensitive to changes to their supply, which can aggravate medical issues such as irritated skin and irritated bowels.

5.3.4 How this consultation has informed our plan

Water trading is core to our plan so we were keen to understand if there are any customer preferences that would conflict with this. This research allowed us to explore the sensitivities with impact and smell and informed the engineering solutions we have chosen going forward to be those with a maximum 2 Twort level variance on hardness.

From the Hall test conclusions above, there is no evidence that water transfers should not go ahead. There are clearly mitigations, such as communication that need to be carried out when customers' water sources change. We are, therefore, content to include water trading within our plan.

6. Best Value

An objective of this research was to develop a Best Value Plan in line with Water Resource Planning Guidelines. This included the following:

- To measure at a high level, customers' attitudes and views regarding the natural environment and our approach to planning;
- Explore customers' ranking of our water supply options to meet demand over the next 25 years; and
- Explore customers' preferences for WRP options to obtain weights for WRW MCDA decision metrics.

6.1 Immersive options qualitative research

Publication of both a Drainage Wastewater Management Plan (DWMP) and a WRMP are key components of the wider business planning process. Customer consultation is an essential part of developing both plans and we identified a number of common research objectives across both plans:

(1) Which service areas and options/solutions are prioritised by customers;

(2) How customers prioritise each option and the factors that come into play; and

(3) Views on the potential benefits/challenges of options.

AURA Award 2021

We were a finalist for the AURA award, which is given to the best case study from a client and/or client-agency collaboration, which demonstrates the impact of insight on their business through:

- Bottom line improvements/successes; and/or
- Engaging difficult to reach stakeholders; and/or
- Changing the opinions of customers through effective and creative use of insight.

Given these common objectives, we commissioned a joint piece of immersive research that allowed each plan to test its options, but those customers that participated were also able to see the wider context and appreciate the many decisions that must be made by us.

6.1.1 Research approach

A three-week 'pop-up' community made up of 153 customers, 18 business users and 17 future bill payers was established. The customers involved were representative of our customer base. The research was conducted across three elements:

(1) **Knowledge building:** mini-surveys and discussions;

(2) **Depth and understanding:** video groups and in-depth interviews; and

(3) **Final verdict/consensus:** survey.

6.1.2 Research results

The research showed that customers ultimately see the future of water management in the North West as a collective responsibility, which has been summarised in Figure 15.

Figure 15 Summary of how customers view the future of water management in the North West

Responsibility falls into three main groups:

United Utilities Water

Responsibility to maintain infrastructure and seek efficiencies.

Initiatives in line with these are often considered 'no brainers' – some are surprised they aren't already in place.

Customers

Individual responsibility to consider water use and disposal.

Happy for behavioural strategies to help nudge better behaviour.

Education needs to start earlier, preferably in schools, to get people on board.

Industry

Need to play their part too.

Without their buy in, many initiatives might struggle to get off the ground.

Financial incentives or recognising standards (such as soil certificates) can help do this, providing a win-win situation for all.

Customers' views showed that they are more familiar with the water resources part of the water cycle and generally understand the concepts better, however, the DWMP initiatives are easier for them to grasp and engage with. During this joint customer research, customers expressed a desire for us to harness technology and use progressive thinking and innovative approaches to tackle problems.

None of the WRMP initiatives presented were rejected outright, though more 'extreme' measures, such as desalination, that fundamentally alter the water cycle were viewed with trepidation and considered a last resort. Overall, the emphasis was placed on individual behaviour, our responsibility to minimise losses, and working with 'what we've got'. The ranked priorities are shown in Figure 16.

Figure 16 Customers' ranked priorities based on immersive research, April 2021

Ranked priorities (WRMP)	% RANKING 1ST	% RANKING IN TOP 3	% RANKING IN TOP 5
Promoting water efficiency	19%	61%	75%
Leakage and water losses	28%	42%	69%
Water meters	8%	56%	58%
Managing the land to improve water quality	6%	17%	53%
Reusing water	17%	33%	53%
Increasing capacity	6%	25%	47%
Fees, Tariffs and charges	3%	14%	31%
Taking water from surface waters	3%	6%	28%
Transferring water from other areas	0%	8%	25%
Taking water from the sea	3%	11%	14%
Taking water from underground	0%	6%	14%
Drought permits and orders	3%	11%	14%
License trading	6%	6%	14%
Receiving alternative water supplies in drought	0%	6%	6%

Perspectives differed between businesses that primarily use water for domestic purposes and those where it is integral to operations. Where use is largely domestic, they accept that change comes with additional cost, but offset this against sustainable supplies, helping to build a better world for future generations. Those businesses with heavier water use are more sensitive to increasing costs, but consider water bills to be fairly low overheads,

so are able to absorb slight increases. Overall business owners are looking for reassurance and support from us in three key areas:

(1) Education – convey why there's a need to take action, why they need to be mindful about how they use water and how this can affect water supply and quality in the future;

(2) Impact – address how the initiatives will affect individual businesses and sectors in the long term, both in terms of supply and bottom lines; and

(3) Implementation – work with businesses to come up with relevant and tailored solutions to facilitate this. There's openness to a two-way dialogue and consultations to help put a plan in place that benefits all parties.

> "United Utilities should be leading by example. In my eyes, it should be saying 'this is what we're doing, this is what you can do.' 'Are you reusing water? Are you making sure you're reducing leakage and water losses?' You know, things like that to help tie everything together."
>
> - Events and Exhibitions company

Future bill payers appear to have a lower level of knowledge about water, the system and bills. The environment and the future are important, but hard to envisage. The views of vulnerable customers were largely in line with those of the wider general population. They expressed views that society needs to take more responsibility and education is important to understand and change how they use water. Their concerns are that increasing costs are proportionate and fair.

6.1.3 Conclusions

In-depth conversations made apparent that there are gaps in people's understanding of the practicalities and ramifications of the proposed initiatives. In particular, understanding of licences and governance initiatives was poor and this is something we hope to address in future research.

While no options were ruled out by the research, customers clearly favour those that make the most of what we have already. For example, reduction in leakage and water efficiency measures score highly. Customers were less inclined to support the more extreme options such as desalination.

The key themes for household customers seemed to be:

- Better education on the practicality of options and also on how to reduce water usage;
- Measures to increase water efficiency; and
- A reduction in leakage.

The key themes for businesses were:

- Education on how to reduce water usage. This was a shared theme with household customers;
- Support in addressing the impact of initiatives; and
- Support for and collaboration with businesses to help them develop tailored solutions that address any impact of initiatives that have been implemented.

6.1.4 How this consultation has informed our plan

This research has enabled collaboration with customers, which has played a significant role in the development of the WRMP. Customers were able to understand different option types and the benefits and drawbacks associated with these. Subsequently, this enabled customers to rank their priorities for solution types.

Based on this research, and also on our own analysis of the most beneficial options, we are prioritising demand options to tackle leakage and per-capita consumption. This is very much aligned to the 'make more of what we already have' message. As such, we are proposing large programmes of smart-metering and mains rehab. We are

also promoting campaigns such as water labelling of appliances, which aligns to the education aspects that came out in the research.

Water efficiency also features strongly in our plan where we are driving behavioural change to enable customers to save water. These activities are mirrored for both household and non-household customers.

6.2 Choice Experiment quantitative research

Additional details about this Choice Experiment research can be found in Section 4.

6.2.1 Research approach

Both household and non-household populations were recruited to participate in the research.

Household customers

- An online approach was adopted to survey a representative sample of 671 household customers across the region using customer sample and customers via an online panel provider;
- Customers had to have sole/joint responsibility of the water bill; and
- Quotas and weights were applied to age, gender, region, urban/rural, socio-economic grade and metering.

Non-household customers

- A similar online approach was adopted to survey a disproportionate sample of 184 business customers across the region using an online panel provider;
- Business customers had to have complete responsibility or at least oversight of the water bill; and
- Quotas and weights were applied to reflect the profile of North West businesses as a whole in terms of business size.

Respondents were shown more detail on the ten different water resource options. Respondents were shown ten individual slides for each option, which included a description, the relative cost and whether the option would have a positive or negative impact on each of the metrics. This was then summarised so that respondents could compare the options.

- Survey participants saw eight questions each.
- Attribute levels varied according to an experimental design.
- Household water bill impact shown in Pounds, while Business water bill impact shown in percentages.
- Outcome for exercise is a measure of customer WTP for each attribute level.
- Customer WTP used to derive decision metric weights.

6.2.2 Research results

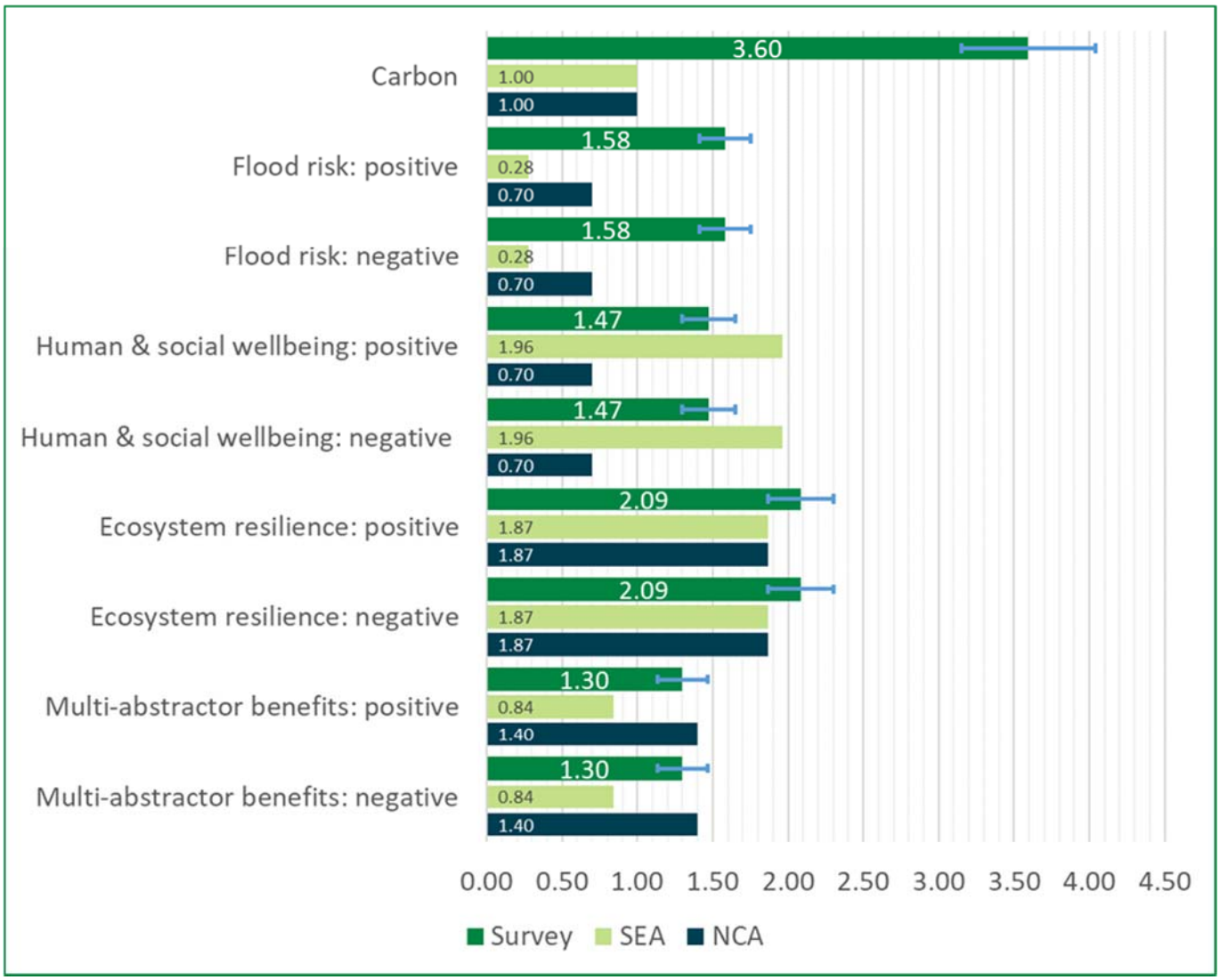


Figure 17 Metric weights from the research results

6.2.3 Conclusions

- The preference weights of carbon emissions are substantially higher than the SEA and NCA weights.
- The preference weights of flood risk are substantially higher than the SEA and NCA weights.
- The preference weights of human and social wellbeing are in between the SEA and NCA weights.
- The preference weights of ecosystem resilience/habitats are somewhat higher than the SEA and NCA weights.
- The preference weights of multi-abstractor benefits (impacts on rivers) are somewhat lower than the NCA weights.
- Positive impacts were as highly weighted as the equivalent-sized negative impacts in line with the outcome from the stakeholder workshops.

6.2.4 How this consultation has informed our plan

The weights shown in Figure 17 were used as weightings in our decision making tool. In this way, customer preferences of how they value environmental factors and carbon have been used to directly drive our decision making.

7. Supporting Research

7.1 Impacts of COVID-19 on customer attitudes

7.1.1 Research approach

Evolving from research into how water and sewer usage was affected by COVID-19, we are now tracking the 'state of the nation' by looking at customers' more general views and behaviours with regards to household finances, their concerns both at a national and regional level, expectations of brands and the environment.

The research sought to answer the following objectives:

- Customers' key concerns and what's important to them;
- Household finances and concerns around meeting bill payments;
- Changes in water usage in the home;
- Expectations of brands; and
- Environmental attitudes and behaviours.

7.1.2 Research results

The following highlights were identified that pertain to Water Resources:

- Customers expect to reduce the majority of water-related activities in the next six months, with the exception of gardening as the weather improves;
- With less discretionary income and household bills set to rise, many are now more worried about meeting outgoings – particularly energy, food and council tax;
- In terms of non-water activities, customers expect to be walking and exercising more, suggesting an opportunity to promote UUW recreational land;
- 'Safe water to drink' was the most important priority for all customers. It is approximately four times more important than a 'reliable supply now and in the future';
- Customers call for UUW to prioritise keeping bills low and supporting vulnerable customers, followed by preventing pollution and leaks;
- Spontaneously, keeping water bills low and supporting water saving behaviours were key requests, as well as ensuring UUW assets are maintained and leaks reduced;
- Older customers claim to be more engaged with environmentally conscious behaviours, in particular recycling and doing their bit to help the environment;
- Recycling and reducing water are still key green behaviours. There is intent for over a third to re-use water, reduce personal air pollution and eat more locally sourced foods; and
- Mirroring customers' expectations on UUW to reduce leakage, 'minimising waste' continues to be the most important expectation of companies.

7.1.3 How this consultation has informed our plan

The research tells us that customers believe that their increased water usage that is due to COVID-19 will stabilise with the exception of gardening-related usage. As a result, we have commissioned demand forecasts, which have included a number of different scenarios. These cover water usage change with respect to COVID-19. Details of this can be found in the *Draft Technical Report – Demand for Water.*

Customers also value safe and clean drinking water over water resilience. Consequently, we have conducted Drinking Water Safety Plan risk assessments for all the options that are included in our preferred plan. This is outlined in the *Draft Technical Report – Options Identification.*

The research also indicates that customers see affordable bills as a priority. The levels of service testing and acceptability research described in Section 4 outline how we have assessed customers' willingness to pay for our plan.

Furthermore, we have prioritised customers' preference to see leakage addressed in our decision making activity that is detailed in the *Draft Technical Report – Deciding on future options.*

7.2 Climate change

7.2.1 Research approach

The purpose of the research was to understand customer views with regards to climate change on the water and wastewater industry and understand customer awareness and expectations of United Utilities Water in the effort to protect our environment and mitigate against the risks of climate change.

More specifically, we wanted to explore the following areas:

- Understand customer priorities when it comes to climate challenges in the water and wastewater industry (uninformed and informed view);
- Understanding what customers expect from UUW in terms of resilience and climate change and what role UUW is expected to play;
- Understanding customers' expectations of their role in tackling climate change as it pertains to water and wastewater; and
- Understanding if customers want to engage more frequently/in more detail about United Utilities Water's climate change initiatives.

We used an online approach to interview business and household customers as well as future bill payers. Sample was provided by United Utilities Water for the household fieldwork.

7.2.2 Research results

This study has provided robust and strong evidence on the views of household and business customers, as well as the bill payers of the future. It shows clearly where the concern of these groups is relating to climate change, and where investment should be prioritised now and, in the future, to overcome these challenges.

- It is clear that climate change is a concern for many customers, and significantly more so for future bill payers;
- For household and future bill payers, the level of concern with climate change in the UK is only second to the COVID-19 pandemic;
- Customers appear to have a good understanding of UUW's role and responsibility, but when probed further there are significant gaps in knowledge;
- With the exception of drought, and to some extent sewer flooding, customers did struggle to articulate the link between climate change challenges and the impact this has on UUW operationally;
- When further informed, it instilled a level of respect for UUW that they perhaps had not had – the notion of 'we take water for granted' was frequently mentioned;
- Generally, customers are satisfied with the steps UUW is taking to tackle climate change and there are clear indications on what steps are preferred to others. Tackling drought and sewer flooding is a key priority for all groups;
- There is an appetite to hear more, but the level of detail and delivery of the content will need to be varied – a 'one size fits all' approach will not work; and
- Customers are most open to receiving information via email, however, other channels were mentioned by all groups such as social media, TV programmes and advertising. Many household customers also felt there is a route into schools to educate on these matters.

7.2.3 How this consultation has informed our plan

From this research, we recognise the concern that customers have for climate change. Consequently, our supply workstream has ensured that climate change has been fully considered. This can be seen in Section 7 of *Draft Technical Report – Supply forecast.*

8. Preferred Plan Acceptability Testing

UUW shared its preferred plan with customers in order to understand its acceptability and to see what, if any, refinements should be made. It should be noted that a three day heat wave occurred during the fieldwork period, where the North West was subject to amber/red extreme heat warnings. While no water restrictions were implemented in the North West, the issue's salience was likely higher than it would otherwise be.

8.1 Acceptability testing

8.1.1 Research approach

A total of 1,312 interviews were carried out across these three groups and quotas and weightings were used where appropriate, to ensure the results were representative of United Utilities' customer base. A mix of household customers were recruited based on the quotas, as well as financial vulnerability, household disability status, ethnicity attitudes towards the environment and use of waterways in the North West. The future bill payers consisted of 16-29-year-olds who currently have no responsibility for paying the water bill.

The interviews took the following formats:

- 1,157 online interviews (925 HH, 100 FBP, 132 NHH)
- 145 face-to-face interviews (77 HH, 68 NHH)
- 10 online depth interviews (HH)

During the interview, customers were required to make trade-off decisions between different levels of services for each of the seven areas on the right (Figure 18), using SIMALTO, a simultaneous multi-attribute trade off tool. To inform their choices, customers were shown the impact the options had on: supply/demand, customer bills (average monthly 2030 bill for HH/FBP and % change for NHH), environment/society, and the carbon footprint.

To fully contextualise the bill impacts, the text preceding the exercise grounded respondents as much as possible to encourage them to make realistic choices. It explained that: bill impacts did not account for inflation; that other household bills could increase or decrease in the future; that money spent on service improvements would not be available for them to spend elsewhere; and that future household costs would also be affected by rises in costs to goods, services and other bills.

Figure 18 Seven areas examined during acceptability testing

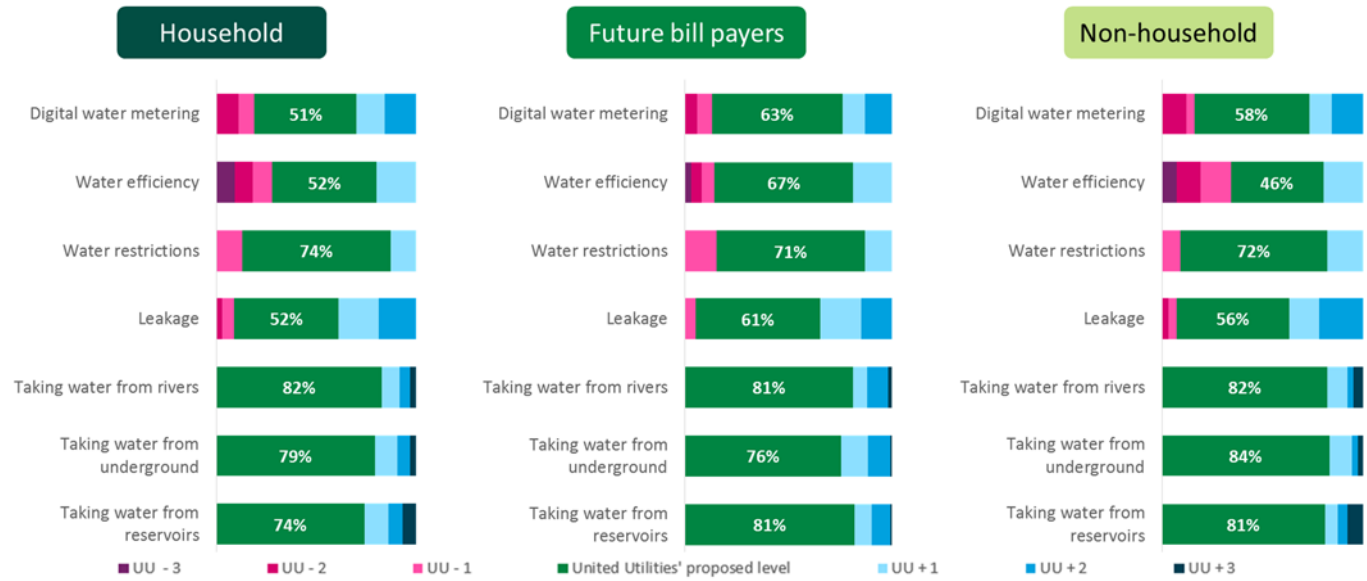
Areas
Digital water metering
Water efficiency
Temporary use bans
Leakage
Taking water from rivers
Taking water from underground
Taking water from reservoirs

8.1.2 Research results

Levels of service choices

Overwhelmingly, the majority of household customers and future bill payers opted for UUW's proposed level of service in each of the seven areas. For non-household customers, the majority of customers opted for the proposed level for six out of the seven areas. For water efficiency the proportion opting for the proposed level was 46%, with a greater proportion opting for lower levels of service compared to HH and FBP. A summary of these findings can be seen in Figure 19.

Figure 19 Customer preference for UUW's proposed level of service across all seven categories.



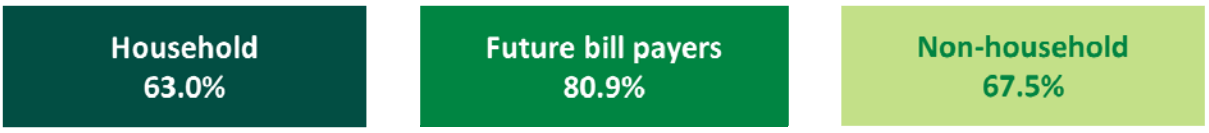
The main reasons given for agreeing with UUW's plan is a sense that it is the best response, that it is cost effective, that it is good for the environment or a feeling of trust in UUW. Where there was deviation, there were a mix of reasons given. Some were motivated by lower costs, others wanted a plan which does more for the environment, or creates a bigger buffer between supply and demand.

SIMALTO Analysis

The first stage of the research provided an overview of customers' selections for each of the attributes and the reasons why. However, in total there are 22,030 valid combinations of bundles and different priorities for different customers. Some want to save money by picking lower levels, others want a higher level of service regardless of the cost, while many are happy with UUW's proposed plan or something similar.

To distil this data and establish the 'best' package, a SIMALTO analysis modelled the optimum mix of service levels for the seven attributes which maximises plan preference score. It did this by taking all of the information about the plans the respondents designed (% choosing each level, bill amount, carbon footprint etc.) and analysed the data to discern how preferable each valid plan was for each respondent. It then aggregated this to give an overall plan preference score. The simulated plan preference scores for UUW's proposed plan are shown in Figure 20. Scores over 60% are deemed to have a strong level of support.

Figure 20 Preference scores for UUW's preferred plan.



Willingness to pay

If willingness to pay exceeds the cost of the plan it indicates that customers believe it represents good value for money. The bill impact of UUW's proposed plan is £12.67[3] and results from this research displayed a willingness to pay which ranged from £19.56-£26.09 across a number of subgroups, with the average willingness to pay being £23.05. The least vulnerable group and couples have the highest willingness to pay, whereas vulnerable groups and those on Merseyside tend towards lower amounts. While it may seem strange that willingness to pay is so high given the current cost of living crisis, during the depth interviews many (but not all) customers explained that on a monthly basis the bill increases are fairly insignificant, especially when compared to the predicted increases

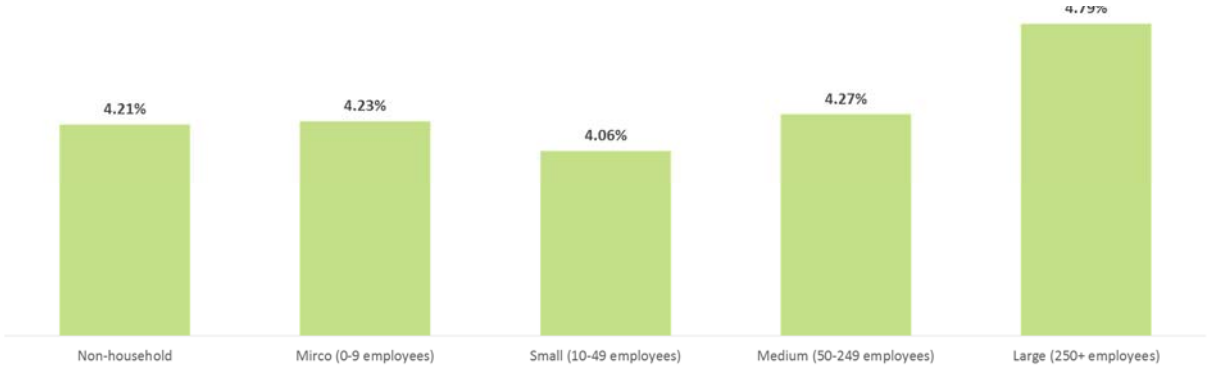
[3] Note that this value was subsequently updated as set out in Deciding on future options technical report. However, the updated value of £16.59 is still below the willingness to pay range in this research.

in energy bills. For context, United Utilities' plan would add around £1.05 per month to customers' bills and even upping the service level for one or two areas usually leaves the bill increase at below £2 per month. A summary of these findings can be seen in Figure 21.

Figure 21 Willingness to pay results across a range of household customer groups.

The bill impacts for non-household customers were presented as percentages because an average bill for this segment would be meaningless given the degree of bill variability in this group. The UU proposed plan bill impact is 3.00% and as the graph below shows, the willingness to pay of micro, small and medium businesses is similar to the overall business figure, with the main variance coming from large employers where willingness to pay is 0.58% points higher. A summary of these findings can be seen in Figure 22.

Figure 22 Willingness to pay results for non-household customers.



TUBs

One of our strategic choices, TUBs, is driven by whether customers would like an increase in service level and as such, would be willing to pay for it. Therefore, respondents were asked to choose their preferred levels of service for water restrictions. Each level of service was shown to the respondent alongside the bill impact. The informed preference for the level stated by the respondent was taken as a proxy for their willingness to pay for the service level with the associated bill impact. Respondents who did not express a preference for an improved level of service were inferred as rejectors of the improvement at that level of bill impact. We used this information to calculate a mean (average) willingness to pay from the stated preference data using the Turnbull method.

The willingness to increase our service level to 1:40 was £4.55. This is very similar to value of £4.75, which was identified in the choice experiment research (Section 4.1.2), despite the fact that in this case customers were making choices around a number of service provisions, with a much higher overall bill increase.

8.1.3 Did the timing of the research influence the choices made by respondents?

This research coincided with a period of extreme heat and dry weather across the UK which was followed by some water companies enforcing hosepipe bans and water restriction measures making the news headlines.

Interviews conducted before the news of water restrictions broke were compared to those conducted during/after to determine if this event influenced respondents' choices and preference for water restriction levels.

The highest level of preference for the UU level of service for water restrictions (1-in-40, or 12.5% chance of a TUB happening in a five-year period) is noted post the extreme heat – though the differences in preference levels is not statistically significant and there is very little difference in the proportions of respondents who stated a preference for the highest level of service for water restrictions (5% chance of happening in five-year period). Table 10 summarises these findings.

Table 10 Preference levels for 1:40 TUBs before, during and after dry weather period

	Prefer 1:40 level
Before extreme heat/ water restrictions	74%
During	72%
Post extreme heat/ water restrictions	76%

There is no evidence that the timing of the research significantly influenced respondents' preferred levels of water restrictions.

8.1.4 Conclusions

Results of this research show that UUW's proposed levels of service were the most popular amongst customers and overall preference scores for the proposed plan were strong across all three segments (household, future bill payers and non-household). Analysis of the preference scores also showed limited scope to improve the score through tweaking the plan, meaning that United Utilities' plan is already highly optimised in terms of maximising customer (and future bill payers) preferences.

8.1.5 How this consultation has informed our plan

This research has demonstrated that customers have a high level of support for our preferred plan. Therefore, we have not made any alterations. By shaping our plan to the outcomes of previous engagement we have built a plan for customers; this has been confirmed by this piece of research. We will continue to engage with customers and stakeholders on our plan, in particular with regards to leakage reduction. This will happen both as part of WRMP24 and our PR24 business plan submission. As part of PR24 we will examine customer preferences, acceptability and affordability in the context of the full range of services we provide including relating to wastewater.

9. Existing research referenced

Customer engagement undertaken for our previous WRMP (2019) provides context for the development of our latest plan, whilst also allowing us to understand where there are continuing consistent, or changing, themes to take into account. Table 11 summarises the customer research that was carried out as part of the WRMP 2019.

Table 11 Summary of customer research carried out for WRMP 2019

Date of research	Research carried out	Outcomes of research
March 2016	Water efficiency: Customer behaviour change study – a behaviour and perceptions study conducted with 1,300 customers by Corporate Culture.	The study highlighted a need for positive communications as there was relatively low customer recollection of water efficiency campaigns or awareness of free meters. Bill saving is still the primary motivator for water metering. The study recommended a trial and feedback approach to water efficiency messaging, which has been incorporated in a draft strategy moving forward.
June 2016	Business Plan: Customer priorities research – conducted by Box Clever Consulting.	Clear priorities identified during this research were: safe, clean drinking water and reliable water supply, with other key priorities being: preventing homes from flooding; preventing accidental pollution; reducing level of leakage; and responding quickly to reported leaks. Several key future challenges were identified: reducing water wastages and leaks; ensuring appropriate plans are in place to service a growing population and cope with climate change; and putting preventative measures in place that guard against water quality issues. The research found that two-thirds of customers feel that the current bill amounts are reasonable but there was little significant indicative willingness to pay for additional service.
September 2016	Customer preferences – phase 1 qualitative focus groups.	This research showed that customers generally had a good sense of what role we fulfil for them. The research highlighted that cost of services was important to customers, something that was not necessarily as important to stakeholders. Attitudes towards metering and water saving varied depending on customers' circumstances, e.g. there were significant differences in attitude between metered and unmetered domestic customers. The reliability of services was also a key concern for customers, above cost and the environment. Customers accepted the need for water restrictions if justified, whilst drought permits were seen by some as an extreme measure, which should only be used after water use restrictions. The main concerns expressed about water trading were that the North West should not suffer as a consequence (e.g. water quality).
June 2017	Quantitative leakage survey to find out whether customers are willing to pay to help reduce water leakage.	Customers believe leakage to be an important priority for us and are willing to pay more to reduce leakage further. For example, nine out of ten participants, and particularly older participants, believe that it is important for us to work to reduce leaks, and a majority of respondents would be willing to see an increase in their annual bill (with the amount depending on the leakage target to be achieved). Leakage reduction options formed a key part of our 2019 plan and the outcomes from this research were considered alongside our other engagement in our preferred plan.

Date of research	Research carried out	Outcomes of research
June 2017	Business Plan: Quantitative service valuation (willingness to pay survey) to gauge customers' opinions on how they value different elements of service.	The overall outcomes of the business plan service valuation survey were: On average, household customers were willing to see their annual bill increase by 6.2 per cent; However, vulnerable household customers were only willing to see a 0.3 per cent increase; Annual bill level was the largest driver for household choices of how we might alter our service; Safe clean drinking water, cleanliness of our rivers and lakes, and cleanliness of the sea and lakes for swimming were the top three service attributes that drove household customer choices; and Customers highly valued supply resilience based on short-term supply interruptions.
June 2017	Customer preferences: phase 2 quantitative research to measure customers' preferences for water resources, levels of service, and the options we might include in our plan. The research included willingness to pay exercises along with a technique called 'Gabor Granger' analysis to compare results.	The Gabor Granger work on level of service showed that customers are happy with the level of service for water use restrictions but would generally support an improvement to this service. Our 2019 WRMP considered a move from a level of service of no more than once every 20 years on average (Five per cent annual average risk), to a 1 in 40 year on average service (2.5 per cent annual average risk). The research suggested that this would be supported by most customers. Similar to previous customer research, customers wanted to see a reduction in leakage and promoting water efficiency as priorities for future investment. Several options relating to these issues were considered in our 2019 plan. Non-household customers also showed a preference for taking water via 'desalination' as a potential future option, this is the opposite view to that expressed by stakeholders.
July 2017	Immersive experience: innovative customer roleplay workshops to collect customer valuations on (a) long-term supply interruptions; and (b) on ecosystem services.	More than half of participants were prepared to pay something to improve service on supply interruptions, with the willingness to pay (per household) to reduce the risk of a three-day supply interruption being in the range £3–£3.76 depending on population affected. After the event supply interruptions were ranked as fourth out of seven service attributes (compared to fifth before the event). Of five ecosystem services considered, 86 per cent of participants opted to buy at least one service improvement, 55 per cent bought three or more, and 20 per cent bought service improvements on all five. Mean spend across all five ecosystem services was £3.43 per household per year. Green spaces for recreation and a healthy river to support wildlife were the most popular services.
September 2017 and June 2018	Programme choice experiment: innovative interactive sliding tool used by customers to select supply-demand options against household cost.	The research showed that customers are willing to pay for a leakage reduction, but that there is no strong opinion to invest to alter the current level of service. Many customers chose an increase in metering and some water efficiency schemes as well. Reservoirs and boreholes are preferred supply schemes over river abstraction, despite higher costs.

Date of research	Research carried out	Outcomes of research
December 2017	Programme acceptability testing research: to test programme choices for future investment across all water and wastewater services through the company's Business Plan.	The research indicated that: Of all service areas considered, reducing supply interruptions had the lowest amount of support. There was no clear overall preference to improving water quality in rivers, although customers in the 18–34 age range and/or in Cumbria did show a preference. There is overall support for leakage reduction from current levels, with a median bill impact level of acceptability of £1.74; the proposed level of leakage reduction was within the range supported by customers.
2018	Level of service (further research): acceptance compared for customers informed about other companies' levels of service and those not, and also by, chance the research was undertaken during a period of dry weather and the results compared to the 2017 research.	The net acceptance of our current levels is slightly higher for the uninformed groups for temporary use bans, non-essential use bans and extreme events. There was no difference between the two groups for acceptance of drought permits. Overall, the conclusion was that our drought resilience levels, when compared to other water companies, has little impact on customers' overall acceptance of these service levels. For all types of water restriction, the 2017 acceptance was marginally higher than the acceptance in 2018, although there was no significant difference for extreme events, which may be due to these events being extremely rare.
March to May 2018	Water trading research: quantitative and qualitative customer surveys commissioned jointly by United Utilities Water, Severn Trent and Thames Water to evaluate customer views on water trading and transfers.	Although initially awareness of water scarcity was low, customers recognised this as a long-term issue requiring immediate nationally co-ordinated action. Fixing leaks was the preferred demand management solution, whilst water reuse was the preferred supply solution. However, 74 per cent of all customers support water trading as part of the solution, but had concerns about the security of supply, environmental and financial impacts. Eight assurance statements were, therefore, developed to help mitigate the core areas of concern: Companies selling the water only do so if they can ensure they have a reliable source in the future; Water will only be taken when it is needed by Thames Water and the wider South East region; There are plans in place to maintain new pipework; The 40 pence [benefit] per donor customer is used for the improvement and upgrade of water services, with no impact on bills; Impact on bills for recipient regions will be kept to a minimum by spreading the cost over a long period; The regulator ensures water is traded at a fair price, and any cost to customers fairly reflects the level of investment made; External bodies will be involved in monitoring processes, which could pose a risk to the environment; and Water companies will be regulated on environmental impacts and must conduct due diligence checks.

A further exercise undertaken by WRW re-analysed customer engagement outcomes from the 2019 WRMPs of the individual companies in our regional group: further details are in Section 5.1.

10. References

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