

# IMPACT

FROM INSIGHT TO INFLUENCE

Application of the Delphi Method

SSC PR24 Triangulation

Final report

Prepared for SSC

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# 1. Background

The research reported here was one element of a comprehensive process of triangulation, in which the outputs from a range of sources were combined for the purposes of providing inputs to SSC's PR24 investment modelling. This triangulation drew on values from:

1. NERA WTP PR24 research commissioned by SSC
2. ODI PR24 results commissioned by Ofwat
3. Results from previous PR19 sources
4. Other relevant research and insight sources.

Alongside this process, a 'Delphi' approach was developed to provide objective assessment of all these sources by external parties recruited for this purpose. Details of the triangulation methodology and results can be found in '**SSC08 PR24 Technical triangulation – Phase 1 Methodology.**' and '**SSC09 PR24 Technical triangulation – Phase 2 Results.**'.

# 2. Methodology

## The Delphi Method

A key innovation compared to PR19 was the expansion of the number of experts who would be involved in the rating and ranking of customer valuation evidence.

The Delphi method is a flexible tool for drawing together the opinions of several independent assessors with the aim of moving towards a consensus, or at the very least a well-documented and clear basis for disagreement. It is used for decision-making and forecasting, with the former being the more relevant to the application in this research and triangulation process. It is an established process used in numerous fields of study, by which a panel of people with relevant expertise (be it technical or commercial) are invited to take part in an iterative process run by a single organiser. All participation is anonymous, which overcomes several potential biases that are present in any qualitative group exercise: anchoring bias (the impact made on opinions of the first speaker in a discussion), halo / authority bias (the undue influence of an individual because of personality / status / specific expertise) and 'loss of face' (the natural unwillingness of participants to be seen to change their mind).

In their account of using the Delphi Method, Amos and Pearse<sup>1</sup>, suggest that the Delphi technique is typified by five main characteristics:

- its focus on researching the future or things about which little is known
- reliance on the use of expert opinion
- utilising remote group processes
- the adoption of an iterative research process, and
- the creation of a consensus.

## Our Approach

Compared to typical applications of the method, our intended approach was quite narrowly defined when considered in terms of the first point above, and equates more to 'things about which little is known'. It can be captured in the core question: 'What is the appropriate WTP value to use for each service attribute in SSC's investment appraisal for PR24?' This was accompanied by the secondary question of 'What is the appropriate range of values to test around each of these central WTP values?' Not only did it require assessment of the validity of WTP values derived from research, but also evidence from wider sources that could indicate whether these values were low or high in comparison.

## How the Delphi survey instrument was constructed and who was involved in this process

Impact Research was responsible for constructing and implementing the method, but our every step was open to scrutiny both internally (SSC) and externally (peer review). This included the way we summarised panel member's feedback and selecting their open-ended responses to support their assessments.

The typical steps of the Delphi method can be summarised as follows<sup>2</sup>:

1. Identify your experts
2. Identify other roles (facilitator, analyst, etc)
3. Craft the first set of questions

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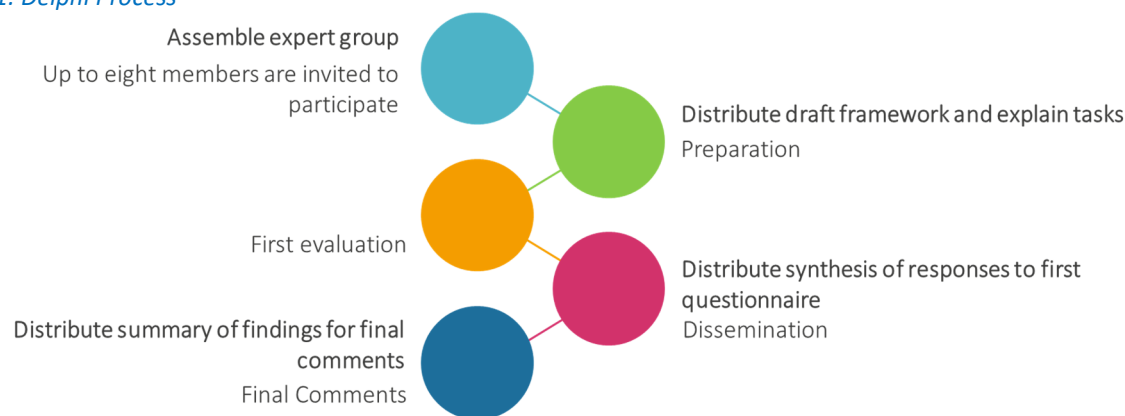
<sup>1</sup> Amos and Pearse, 2008, Pragmatic Research Design: an Illustration of the Use of the Delphi Technique, EJBRM, Volume 6 Issue 2.

<sup>2</sup> Clayton, 2021

4. Tabulate and analyse results
5. Prepare the next set of questions
6. Continue gather-analyse-ask
7. Stop at convergence
8. Report

With these steps in mind, the planned structure and content of the Delphi Method was as follows:

**Table 4.1: Delphi Process**



It is suggested in the literature<sup>3</sup> that panels of 10 or more participants are typical, as are usually three iterations or more. In comparison, our approach was necessarily more modest in scope. The time and expense in recruiting a large panel of experts is an important practical consideration, so we planned to recruit a smaller group, which resulted in 4 participants. One of the ‘participants’, Sustainability First, was actually a team of two individuals. This process involved two phases, rather than the typical three which is suggested in the literature. While resources are also a factor in limiting the number of iterations to two, it also reflects the focussed nature of the study scope. Typically, Delphi studies include a wide-ranging set of open-ended questions at the first stage, reflecting the complexity of the issues related to a topic such as forecasting future economic performance or agreeing the development steps for a new health treatment. In our case, the sources of information were already defined (all available WTP studies and related research) and the task was narrowly defined (agree the most appropriate WTP values to use).

Our approach used interactions between expert group members via anonymised questionnaires rather than face-to-face communication. This encourages focussed and open expression of opinion, where potential conflict of interests, issues of confidentiality or simply the influence of personality are minimised. Core to the method is the use of a multi-stage self-completion questionnaire with individual feedback encouraged.

A summary of the steps in the Delphi approach for this research is shown overpage. The initial briefing note to participants and the first-stage and second-stage questionnaire are shown in the Appendix.

### The Expert Panel

The expert participants were recruited from different disciplines:

- An expert in the field of customer engagement from the energy industry
- A technical expert in the field of stated preference research and WTP estimation
- A representative from the ICG
- Representatives from Sustainability First (two colleagues working together as one participant).

Anonymity is key to the process, so the views of panel members on the validity of contributions from their fellow panel participants were confined to the answers that were given, and reported after the first stage of the process.

Once recruited, Impact sent an outline of the process to the participants in November 2022. Each participant was expected to participate in two rounds of the Delphi process, which both involved reading an information pack, and then answering an in-depth online survey. The panellists were advised that around three to four days in total would be required over the entire process. The panellists were provided an incentive for recognition of their time and efforts.

<sup>3</sup> Fink-Hafner, Dagen, Douřsák, Novak and Hafner-Fink, 2019, Delphi Method: Strengths and Weaknesses, Metodološki zvezki, Vol. 16, No. 2

### 3. Application

The method was applied to two phases:

- Phase 1 (December 2022) – After an initial development phase in which the questionnaire was extensively revised (see appendix), the four participants were given an extensive summary of all available customer insights and research information on the 12 service areas to be covered in SSC’s PR24 WTP research. From this they were asked to identify what they considered to be the rank order of customer priorities. They were also introduced to the results from the PR19 WTP triangulation outputs in preparation for Phase 2.
- Phase 2 (February 2023) – the same four participants were given an information pack with feedback on their comments from Phase 1 and were asked to reconsider their rank ordering of customer priorities. They were also presented with summary reports of the WTP/WTA results for PR19 (triangulated), the NERA SSC PR24 study and the Accent/PJM ODI PR24 study. As well as giving their views on the credibility of these different information sources, they were asked to make one final reassessment of the rank ordering of customer priorities in the light of these results.

#### Preparation – First Information Pack

Whilst identifying and recruiting the expert participants, the Impact team began preparing the research materials. A triangulation of multiple data sources related to twelve service areas from SSC’s PR24 research was conducted, and these insights were fed into a PowerPoint Information Pack. For each of the twelve service areas, the Information Pack contained some general context setting and business as usual insights, as well as qualitative and quantitative research results relating to customer priorities regarding each of the areas. This Information Pack was emailed to the expert Delphi panellists in a PDF format, and they were given a few days to digest the information before the first questionnaire was sent.

#### First Round Questionnaire

The Impact team developed the first round of the questionnaire with regular feedback from SSC, to ensure the questions were fully aligned with the goal of the Delphi method in this instance. The first-round questionnaire began with an overview of the Information Pack content, whereby participants were asked to provide short summaries, as well as explain what they thought was missing, for each service area that was covered in the pack. Based on what they had read in the Information Pack, the participants were asked to rank the technical themes in order of customer priority. Firstly, this ranking exercise was conducted for household customers, which was supplemented by an open-ended justification for the ranking order. Participants were asked both to rank the items and to write free-text comments that, for example, explained their rating or expressed any disagreement with the question’s relevance. Then, participants were asked to do the exact same exercise for non-household customers. It was important to capture any demographic or regional differences that panellists thought would occur, so they were asked if their ranking order would differ between the South Staffs and Cambridge Water regions for both household and non-households, and then if their ranking order would change when considering financially vulnerable and future household customers. These questions were expressed in an open-ended format, in order for participants to fully articulate any differences in priorities they supposed could occur between these different customer types.

The rest of the first questionnaire focused upon willingness to pay values, specifically trying to decipher those that best represented customers’ priorities and avoiding discussion of technical issues related to how best to represent these in CBA. Participants were shown multiple WTP results and were asked for top level feedback on the ease of interpreting the data that was presented to them, as well as what stood out and any additional information that might be needed to critique the PR24 WTP results during the second round of feedback. In the round 1 questionnaire, the values were based on work carried out for PR19, but also included some additional values obtained since. For clarity, and ease of comparison, the WTP were split separately by HH/NHH, given that the values and priorities of these groups are different. The WTP results were displayed in three different ways, and participants had to evaluate each format. The first display of the WTP results was a graph in which the bars represented the size of the WTP value (and hence the relative important) for each of the technical themes, and all figures related to value per property affected. The next graph that participants were shown displayed the values per property multiplied by the total number of properties, which recognises that the impact of any change to each service area affects a different number of customers. The experts were then shown their own ranking order for household customers again, alongside the PR19 WTP values for both individual customers and customers altogether. They were asked if any of these PR19 rank orders surprised them when considering them in relation to their own ranking of the 12 technical themes. Finally, participants were shown a range of values around each central WTP value, for each technical theme, including the lower and upper limits. Again, they were asked if they were comfortable interpreting that data, and if any of the ranges surprised them.

The round 1 questionnaire ended by introducing experts to the performance levels that are to be tested in the PR24 WTP study and asked them for general observations about the levels being tested, and which made sense or stood out.

The exercise of completing this questionnaire warmed up the experts for the second round of the Delphi method.

### Preparation - Second Information Pack

The responses to the first-round questionnaires were collated and used to create the second-round research materials. The Information Pack for phase 2 presented the same technical attributes as before, together with both the individual respondent's rating and the (anonymised) ratings from the other members of the panel. During the first round of the Delphi Method, some potential improvements were suggested by the panellists, most of which were actioned for Phase 2. An addition to the second Information Pack was the inclusion of industry comparison results for some of the technical themes, which was requested by the experts in Phase 1, as it would provide a useful benchmarking tool. The rest of the Information Pack was originally going to contain the key results from the NERA WTP PR24 research commissioned by SSC, and the ODI PR24 results commissioned by Ofwat, alongside some PR19 data. This data was the crux of the second Information Pack, so we expanded it further and included some contextual information, as the panellists requested more contextual information in phase 1. This supplementary information included background objectives and rationale of the projects, as well as technical background information on each of the methods. We included example questions from both NERA and ODI studies, so that the experts could see exactly what participants of that research were asked, as well as sharing the definitions of each technical theme for both the studies, as there were some differences between them. Following this contextual information, the Information Pack covered some of the key WTP and WTA values from NERA and ODI respectively, as well as key data from the PR19 study. The latter part of the pack contained clustered bar charts showing final comparisons across the three sources, detailing the total value of intermediate service improvements for HH and NHH customers (from each of the three sources). The intermediate levels were chosen as these had a relatively higher level of consistency across the studies. We wanted to display this information in multiple formats to aid understanding, so we also created some ranking tables, which showed all 12 attributes, and the ranking orders from each of the three resources, which we compiled from the actual WTP/WTA values. This was shown for both HH and NHH data.

Having taken on the feedback from Phase 1, we decided to try and make the functionality in Phase 2 slightly easier for the participants, and hence printed off the Information Pack and sent it via the post (as well as also sending a digital file). Receiving the Information Pack in physical form aided the user experience, as well as very clearly labelling which slide numbers they should be referring to when answering each question in the second online survey, and including a progress bar on the online survey. Feedback after Phase 2 shows that the expert panellists thought the second phase was much improved from round one, and the printed materials, as well as a progress-indicator, and clear slide labelling, were very useful additions.

Due to delays in receiving some information from the team who were working on the ODI report, the information pack that was sent to participants via the post was missing a few slides. Once we had received all the data, we sent out another email a few days later, with a PDF attachment containing these extra slides, detailing where exactly they fit into the main information deck. This email also contained links to the full ODI and NERA reports, in case panellists wanted to refer to these at any point.

### Second Round Questionnaire

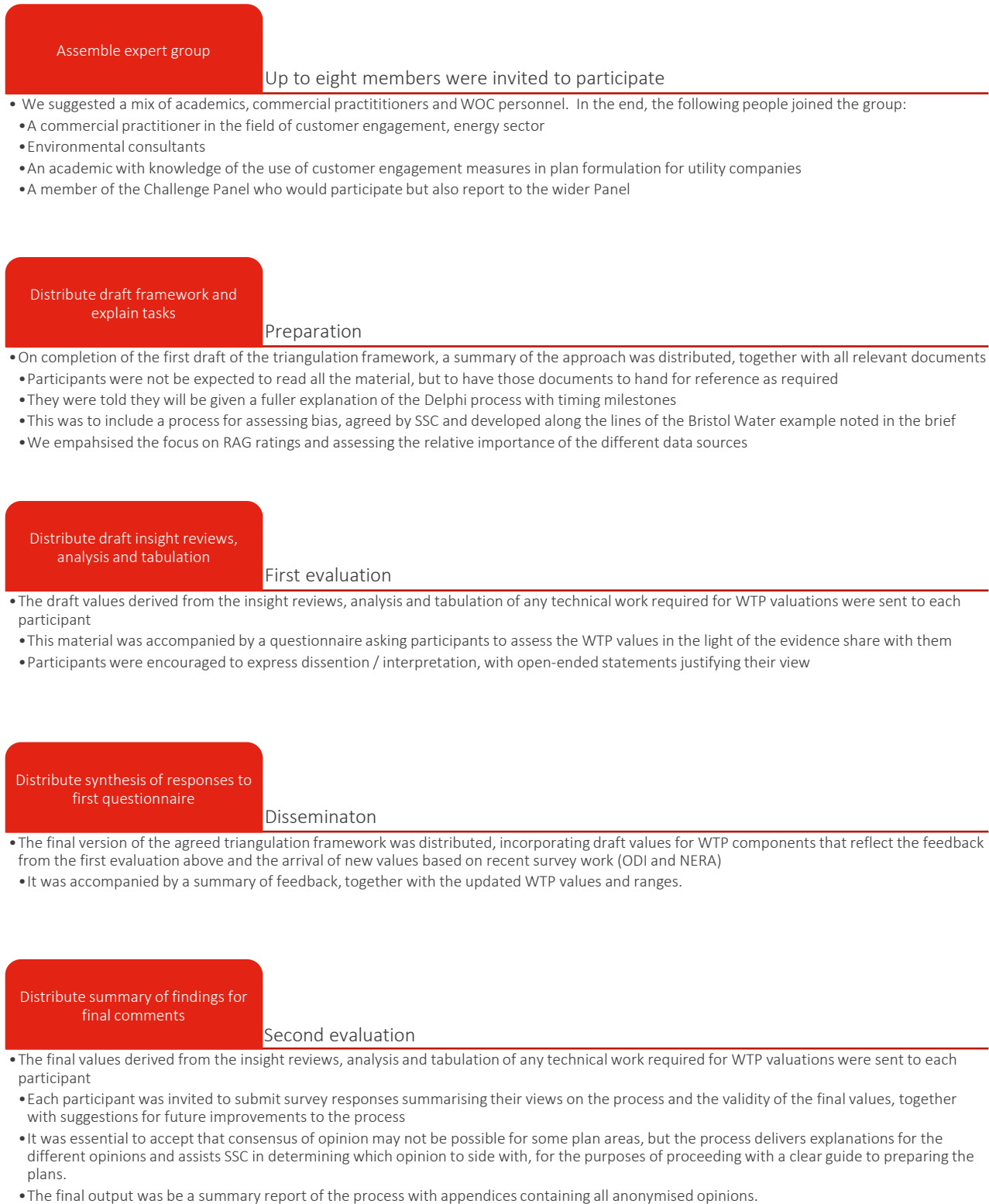
The panellists were given some time to digest the second information pack, before being emailed an invitation to complete the second online survey. The survey began by asking the panellists if seeing the responses from the rest of the panel had changed their opinion, or if there was anything that they hadn't previously considered. They were then shown a table from the second Information Pack, containing the ranking results from all 4 participants for the attributes from Phase 1. Here, they were given the opportunity to change their own ranking order from Phase 1 for HH and NHH customers, as well as being asked if their views have changed since the earlier questionnaire on potential regional differences. A selection of the free-text responses was given, to represent the breadth of opinion. The next question asked if seeing the industry comparison data had altered their views on the priority order of the attributes for HH customers.

The rest of the second questionnaire focused on each of the studies that they are being asked to evaluate the data for. The same questions were asked for both SSC's PR24 WTP research run by NERA and Qa, as well as the Outcome Delivery Incentives for PR24 research. There were asked questions about NERA first, and then for ODI. The questions directed respondents back to certain areas of the information pack, and probed for views on the rationale behind the studies, the way the research participants were asked to assess the service enhancements, and their views on the robustness of each method. Then, they were shown HH values from the study in question, and asked for general reactions to the data, and if anything surprised them from the demographic breakdowns of the data. A similar process was repeated for NHH valuations. After evaluating both sources in some detail, the panellists were asked if they thought SSC should have confidence in the using the NERA WTP values as an input of customer valuation for Cost Benefit Analysis in the Copperleaf Investment Tool, and why.

The final questions in the survey asked participants to consider the final tables from the Information Pack, which contained the rank order of each of the attributes from the 3 research studies (NERA, ODI and PR19). Looking at one attribute at a time, they were asked to pick which of the three ranking positions they thought best reflected household customer priorities for

investment, and then the same again for non-household customers. It is important to note here that the panellists were commenting on the relative rank ordering of the 12 attributes from each source report, and not the actual values from the data, as these widely vary. Following this, participants were asked why they gave such responses. Most of the experts chose the rank order that most reflected their own rank ordering from earlier in the Delphi process, and here, they were less focused on the source reports themselves.

Figure 4.2: Flow of the Delphi Method



## The Role of the Facilitator

A dedicated research team at Impact was assembled to develop the approach, facilitate the research process, summarise the responses and report the final recommended WTP values with explanatory notes to justify this recommendation. The team drew on their extensive knowledge and experience of deriving WTP values for assessing consumer valuations of Water and other Utility service investments. However, the nature of the Delphi approach meant that the actions of the facilitators would have an influence on the final outcomes. This was reflected in the way that the open-ended commentary from experts was summarised for use in the second iteration.

This potential for bias was addressed in the following ways:

- All quotations used in the summary of the response to the first stage questionnaire were selected only in so far as they explain the priority rankings that participants have given to the WTP values.
- The summary of the responses were shared with internal and external parties for scrutiny before it is sent out to the panel for the second stage.

## Reaching a Consensus

In some applications, the Delphi method continues through as many iterations are required until a consensus is reached. Our more narrowly defined approach, limited to two iterations, required that this aim was relaxed. A more applicable definition of the outcome was “for each WTP value established from this process, what is the level of consensus *or otherwise* around it?” By exposing each panel participant first to a summary of the research related to the WTP values, and then the responses of the rest of the panel, we aimed to establish a series of data points (WTP values) that might or might not converge closely around one value for each service attribute. It was entirely acceptable for some of these values to still have a wide range of uncertainty at the end of the process, because this will reflect the diversity of opinion. Such instances simply place more emphasis on the importance of sensitivity testing in the CBA process.

Our peer reviewer suggested that a "consensus" can be thought of as a point estimate, whereas we were expecting a range of values, such that the consensus explicitly reflects the uncertainty inherent in the WTP values. This is credible given that WTP estimates are typically subject to large standard deviations and that focussing on a point estimate could be very misleading. As part of the Delphi approach, we asked participants to express their degree of uncertainty about the WTP values.

The output from this process was a more considered set of arguments supporting or questioning each WTP value. In the final use of these values in the investment process, SSC could choose to alight on one particular WTP value that was not necessarily backed by a consensus from the panel; however, as a result of this process, they were in receipt of a set of arguments in support and in contradiction that help to more clearly articulating why they have opted to use that particular value.

## 4. Outcomes

The contributions of the Delphi process to the development of the final triangulated WTP values are reported in ‘**SSC09 PR24 Technical triangulation – Phase 2 Results.**’.

### Main learnings from the Delphi Method

The use of the Delphi method in this Triangulation study was a novel one. After conducting extensive research on the Delphi model and its best practices, we felt confident in our use of the method. Useful insights were gathered, providing SSC with independent validation and review of the different WTP values and the sensitivities around them. As we would expect for any method used for the first time, we encountered some challenges and hence have some suggested improvements for future use.

Firstly, the small number of participants in the panel, although diverse in their areas of expertise (sustainability, vulnerability, education, statistics), may have somewhat limited the breadth of perspectives. To enhance the validity and comprehensiveness of future studies, it would be interesting to increase the number of participants and potentially include multiple experts from the same field to compare their views. From the results, we saw that participants did not change their ranking order very much after seeing the other experts’ opinions. We think this is because the experts had their own perspectives coming from their own field of expertise and stuck to these. For future applications, it would be interesting to see how results from multiple experts in the same field compare.

Secondly, the Delphi process consumed a considerable amount of time, requiring participants to set aside multiple days for completion. While all participants were willing to complete the whole process, delays in the timeline caused some minor frustrations due to scheduling conflicts in the experts’ busy diaries. To address this, individual timeline extensions were provided to ensure that all panellists had time to properly articulate their thoughts at both research stages. Additionally, participants were appropriately compensated for their time.



The complexity of the subject matter posed a slight challenge in eliciting views from the experts. While valuable information was obtained, some areas of the subject matter were difficult to understand for all the panellists (e.g. technical areas of the methodologies and results). Whilst it was useful to have different perspectives shown in the research, recruiting experts with a deep understanding of the topic is probably important for future studies. Additionally, efforts should be made to present the data as simply as possible (which we did to the best of our ability), to facilitate comprehension and interpretation.

Regarding practical methodology, the physical distribution of the second briefing pack via the post received very positive feedback from the panellists, and aided the reading experience, as well as aiding following the questionnaire and information pack order. Ensuring complete alignment between the order of the information pack and the online survey is crucial to avoid confusion. The order between these slightly differed in the initial phase of this research, but after feedback from panellists, we ensured that the order aligned in phase 2. Implementing a progress bar in the online survey also proved useful and is recommended for future studies.

One potential limitation was the presence of confirmation bias, as participants appeared to favour the rank ordering of WTP and WTA values / which most aligned with their own rankings of customer priorities. They therefore may have considered the alignment of the results with their own expectations (based on their earlier review of all the other material) above any concerns they may have had over methodologies. Given the complexity of the subject matter, future studies on a similar topic may benefit from asking participants to evaluate a single method and its results, rather than three sets of methods, to mitigate this and encourage more in-depth understanding of the WTP/WTA values.

In conclusion, the Delphi method has demonstrated its value as a practical and reliable approach for obtaining expert assessments of WTP values for PR24 purposes. By addressing the challenges faced and implementing the suggested improvements, future applications of the Delphi method in similar research endeavours will yield even more accurate and actionable insights to inform business strategies.

## 5. APPENDICES

### Pre-Round One Draft Delphi Materials - [First Draft](#) of Initial Briefing and Delphi Questionnaire

We show below the initial draft and subsequent internal discussions that preceded the development of the final questionnaire used in the first round of the Delphi approach. It has been included here to demonstrate the evolution of the approach into a more practical survey instrument. It was shared with Delphi participants to obtain their initial comments.

PR24 Delphi Panel: [Draft Briefing Note](#)

#### *Background*

Ofwat has identified the importance of triangulating customers' **Willingness-to-Pay (WTP) valuations** that will be used by WOCs in Cost Benefit Analyses (CBA) for their Price Reviews (PR24) business plans. In line with CCW guidelines, it is a requirement to demonstrate that the valuations that are derived from SSC's customer engagement are thoroughly assessed and evaluated against all available evidence.

The WTP customer valuations will draw from primarily from new work commissioned by SSC for this autumn, but these need to be triangulated against other SSC customer priorities research and WRMP-related materials, relevant WTP valuations from previous years and other external sources (including current centralised research being conducted by Ofwat which will be used to develop Outcome Delivery Incentive Rates (ODIs) for water companies. Some of these sources do not explicitly measure WTP values, but they bring insights on the relative priorities that customers attach to water companies delivering alternative levels of service.

The challenge is how to agree on the relative robustness of the evidence and what this tells us about customers' priorities expressed as WTP values. SSC has an established triangulation method from PR19 in which each source is rated according to a simple 'Red-Amber-Green' (**RAG**) classification and this information is used to apply weights to the available WTP values.

This approach to triangulation developed by the consultants Accent/PJM for PR19 produced a *weighted average* of WTP values derived from the various data sources. Each data source used in this process had certain strengths and weaknesses so that the comparable measures or estimates derived from these sources were recognised as being subject to errors. Since it is difficult to determine the sizes of these errors, **reasoning and judgment** were used to evaluate the evidence across all the data sources and conduct sensitivity testing with respect to the key areas where judgement was applied.

#### *The Delphi Method*

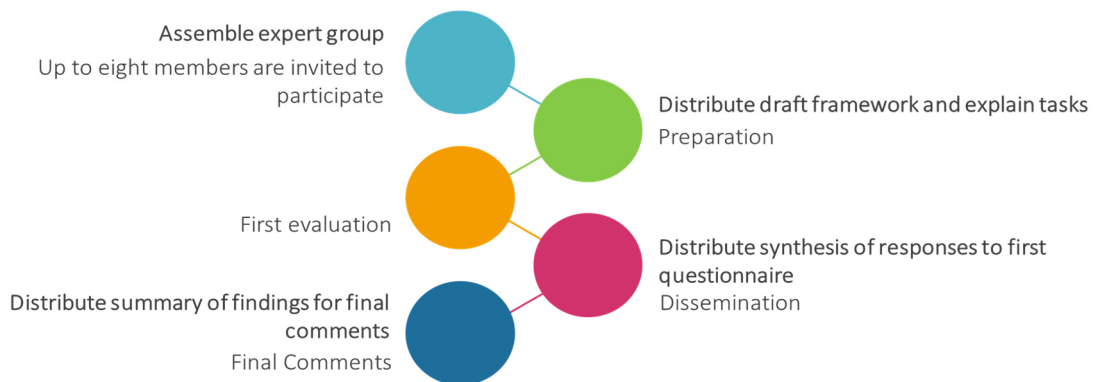
For PR24, SSC in partnership with Impact propose to use this same triangulation approach but recognise that one important limitation was the restriction of the 'reasoning and judgement' element largely to a single assessor. To address this, we are seeking to recruit a broader range of assessors to be involved in this assessment process. For this, we will be using the '**Delphi**' method, a flexible tool for drawing together the opinions of several independent assessors with the aim of moving towards a consensus. This is an internationally recognised process used in numerous fields of study, by which a panel of people with relevant experience (be it technical or commercial) are invited to take part in an iterative process run by a single organiser. The out-going Chairman of the SSC Customer Challenge Group (CCG), Simon Sperryn, has recognised the value of this approach based on his review and challenge of the triangulation work undertaken by SSC at PR19.

As SSC's preferred PR24 triangulation supplier, Impact Research will be running this process.

To encourage full and open expressions of opinion:

- All participants take part anonymously – only the organiser knows who is participating and all comments cannot be attributed to an individual
- All communication is electronic – via emails and primarily through structured online questionnaires

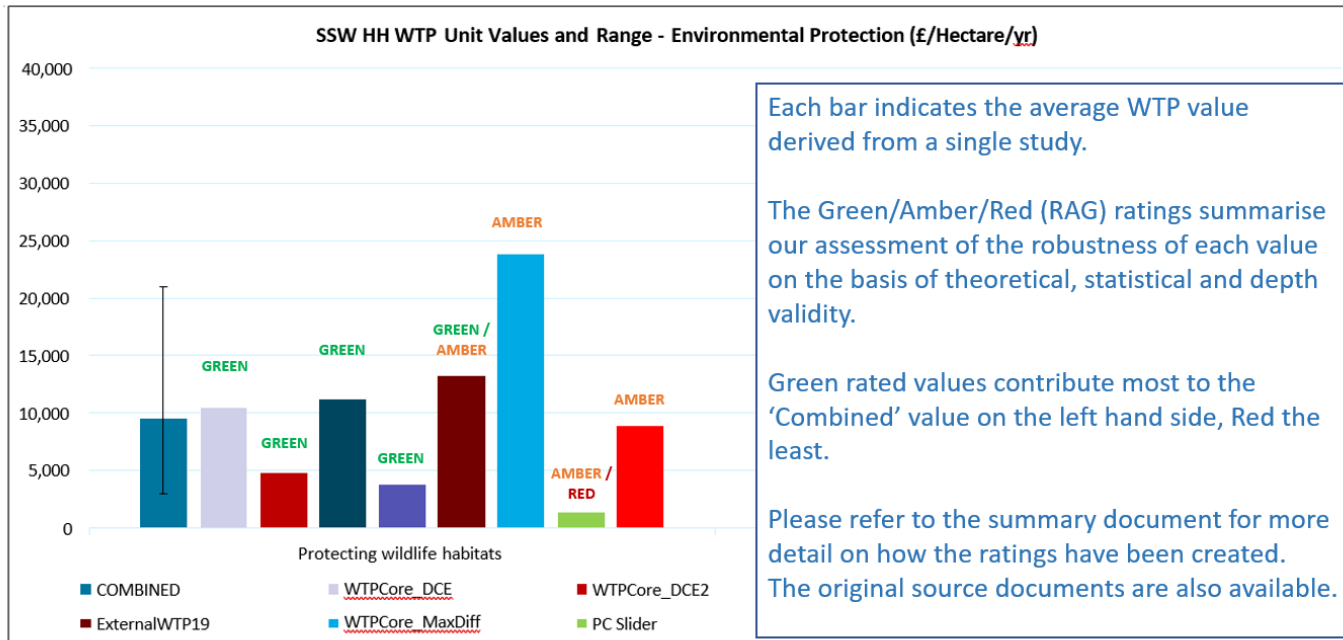
The planned structure and content are as follows:



The first-round questionnaire presents a series of summary slides that each participant is asked to evaluate, using agree/disagree scales, alternative RAG rating scales and supporting open-ended responses. Participants are asked both to rate their responses and to write free-text comments that, for example, explain their support for the rating or express disagreement with the statement's relevance.

In the example below (based on the PR19 triangulation), the participant is presented with the WTP values derived from several studies. The participant can explore further how each RAG rating has been derived by referring to a supporting summary document and, if they wish, the original source material. They are invited to critically examine the items that contribute to the final combined valuation – for example, the strong ratings for the dedicated WTP studies reflect largely the strong statistical methods and large sample sizes, but could they also represent an over-simplification of the issues being represented (in this case Environmental protection)? The more extreme values shown by the amber-rated customer priorities may indicate that the data is less reliable here, or could it hint at something that is being under- or over- expressed in the WTP studies. The participant is invited to pose such questions and express their views as widely as they wish, free in the knowledge that the information is given anonymously (visible only to the research organiser).

*Example: Comparative WTP values and their initial weightings*



The organiser will summarise the ratings and evaluate the text responses to identify key concerns and suggestions; at this stage the organiser may contact participants at that point for purposes of clarification. In this way, the responses to the first-round questionnaires are collated by the organiser and used to create the second-round questionnaire. The latter presents back to participants the same statements as before, together with both the individual respondent's rating and the median rating from the entire panel. This will indicate how close their ratings are to the overall group view. A selection of the anonymised free-text responses will also be shared, to represent the breadth of opinion. Respondents to the previous round thus get a personalised, unique questionnaire. After considering this summarised information, participants re-rate the summary slides, by either giving the same rating as before or an amended rating. Respondents may give further comments about the statements if they wish.

**Timing:** Impact anticipates sending more information to participants in mid-September, and then running the process through to the end of October. Each participant would be expected to participate on three occasions (first assessment, follow-up assessment, final comments), each separated by a two-week gap.

It is estimated that each participant will require a maximum of **three days** in total to complete the work.

*(A list of the WTP topic areas likely to be covered was also provided – see the summary in the ‘Map’ section in Chapter 3 of this report)*

### Draft First Draft Questionnaire

The following draft questionnaire is a first draft and will form the basis for further development before the Delphi process begins towards the end of 2022. It covers the first iteration of the Delphi process; it is planned the second iteration will follow a similar format, with feedback from the first iteration being incorporated into the sections that introduce the initial WTP values presented to participants.

A major challenge will be the number of topic areas that could be covered (c. 12-15) and the need to separate Household and Non-household customers. The first part of the questionnaire therefore invites participants to prioritise the topic areas in order of their perceived importance to customers (based on their reading of the relevant literature). There is potentially a very wide number of sources, so we propose providing them with a summary and a guide to the main sources to consider. The aim is to strike a balance between keeping the exercise manageable for participants while not directing them to topic areas that are a priority for SSC but not automatically for all customers.

There is also an argument for augmenting the final list of topic areas with those that have the widest variation in WTP, so that even if a respondent ranks a topic area down the order, we still ask them to cover it if there is a particularly wide range of uncertainty around the WTP values.

The questionnaire will be administered online and self-completed by each participant.

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### Introduction

Thank you for agreeing to participate in this assessment of customer ‘Willingness-to-Pay’ (WTP) values. These are key inputs in the evaluation of South Staffs and Cambridge Water (SSC) investment programme and a key element of their Price Review (PR24) for OfWat.

You are one of a group of expert assessors who have been recruited for this purpose. Your identity is unknown to all the other assessors and your responses will be treated in total confidence. The reason for this anonymity is to encourage your complete freedom of expression.

This questionnaire is the second part of a three-step process. The first part comprised an introduction to the process and the receipt of several documents related to the sources for WTP values<sup>4</sup>. This included the new work commissioned by SSC that has recently been completed and reported. There will be a final step in which we will feed back a summary of the results of this current step, so that you can see how your fellow assessors have evaluated the information. In the light of this feedback, you will then be asked to consider if you wish to adjust your original assessment.

### The Questionnaire<sup>5</sup>

#### All Topic areas

#### RANK (ties allowed)

Q1a Based on the summary material you have received, please rank the following topic areas in terms of what you believe are the most importance priorities for Household customers (drag and drop exercise).

---

<sup>4</sup> The anticipated report date for the new SSC WTP work is 18<sup>th</sup> November. A summary of the findings, accompanied by the results from previous WTP studies, will be sent to participants by the end of November. These will be accompanied by source documents that participants may wish to refer to for further information.

<sup>5</sup> The aim has been to keep the number of questions to a practical minimum, as Q1-Q3 will be repeated for 12-15 topics, split by HH and NHH. We suggest that participants spend no more than an hour per topic, so about two days for the whole exercise. They will have 2-3 weeks to make the assessments, with the ability to save and return to the questionnaire at any time.

Q1b Again, based on the summary material you have received, please rank the following topic areas in terms of what you believe are the most importance priorities for Non-Household customers

You will be asked to assess some of these topic areas for which WTP values will be used. These will be a combination of those topic areas that you have identified as most important to customers and some areas for which the range of WTP values are particular diverse. You will also be asked to make separate assessments of the values for household (HH) customers (domestic) and non-household (NHH) customers (businesses, etc). Each topic area is presented in the following format:

<example as shown in the previous diagram, but with dummy values. Lower, Central and Upper values will also be shown as a table below the chart. **It is proposed that the RAG ratings and the combined value are omitted, so that participants are not presented with a pre-determined classification or overall figure**>

*Assessment (repeated for 6 topic areas - Up to 3 identified as having a very wide range of WTP values and the rest ranked highest by the participant – separate lists for HH and NHH customers)*

Please examine the range of values for the topic of <TOPIC AREA> and complete the following assessment.

*For all sources*

**S**

Q2 Please classify the sources in terms of their plausibility as indicators of customers willingness-to-pay for investment in this area:

- Strong
- Fairly strong
- Weak
- Very weak
- Not applicable

*For all sources classified as Strong/Fairly strong*

*RANK (ties allowed)*

Q3 Please rank the following sources in terms of how they should be used by SSC to determine final WTP values to use in their investment planning?

*For each source*

**OE**

Q4 For each of the following sources, please briefly state the main reasons for classifying them as you did:

Source	Your classification <sup>6</sup>	Your reasons
xxx	Strong	
yyy	Fairly weak	

*Final Review (Separately for HH and NHH customers)*

The table below shows the central WTP values for each of the topic areas you considered, together with lower and upper values. These are based on your assessment of the sources, using a simple weighting of Strong=1, Fairly Strong = 0.75, Weak = 0.5, Fairly weak = 0.25 and not applicable = 0. The figures are not intended to be a definitive result; they are simply a way of allowing you to see a broad summary of your review in a single table:

Topic area	Central WTP value	Lower – Upper range	Number of sources rated strong/fairly strong
xxx	£X.XX per ???	£X.XX - £X.XX	2
yyy	£Y.YY per ???	£Y.YY - £Y.YY	4

*RANK (ties allowed)*

<sup>6</sup> Ranked in order of strength.

Q5 Based on this summary, please again rank the topic areas in order of what you believe to be the most important to customers, as expressed in their WTP values but also in relation to any information you have obtained from the source documents, or from any wider knowledge you may have from literature / commercial experience relating to these topic areas

*For the top five topic areas*

*OE*

Q6 For each of the following topics, please briefly state the main reasons for ranking them as you did:

Topic Area <sup>7</sup>	Your reasons
Xxx	
yyy	

*OE*

*Final Statement*

Q7 Thank you for completing your assessment. As indicated at the beginning of the questionnaire, your contributions will be summarised together with those of your fellow assessors and fed back to you for further comment.

If there are any further points you would like to make this juncture, please write them below.

---

<sup>7</sup> Ranked in order of importance to customers.

## Revised Approach to Delphi: Discussion

Presented to SSC at a meeting on 6<sup>th</sup> November, in the light of Peer Review feedback on the Draft Delphi questionnaire and our own concerns at the likely burden of the proposed tasks on Delphi participants.

### BACKGROUND AND OBJECTIVES

Our proposal aimed to address the adapt the triangulation (RAG) process that was used for PR19 to evaluate the robustness of the available WTP figures

- The main aim was to **make the process more open** by inviting a number of experts to participate in the evaluation
- It sought to do this through the use of the 'Delphi' method
- Most applications of Delphi aim for a **wide breadth of opinion** from many experts
- Our application is necessarily more focussed, **evaluating the WTP values** that SSC will use in their investment plans
- The key questions to answer are:
  - How consistent are the WTP values with:
    - **Customers' priorities** in general and
    - All available and relevant **WTP values from other sources**
  - Specifically:
    - What is the most **appropriate central value** to use
    - What **low and high values** should also be considered

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IMPACT

### CHALLENGES

It has become apparent during the design of the Delphi approach and through feedback from our peer reviewer that there are a number of concerns with the proposed method

- There are a lot of **complex issues** to evaluate
- It is not practical to ask panel participants to read all the relevant literature
- The process of producing RAG scores as per the PR19 approach is **too involved** for the time available to participants (and the cost of their involvement)
- On the other hand, preparing summaries of the information and suggesting RAG scores limits the objectivity of the exercise
- There is also some concern over which if any external values should be considered suitable for comparison (use v non-use values – essentially a version of revealed preference v stated preference)

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IMPACT

## SUGGESTED SOLUTION

We need to re-state that the aim of the exercise is relatively narrow and can be summarised simply as: **“How much confidence can SSC have in the WTP values?”**

- With this in mind, our approach has to be less of a ‘classic’ application of the Delphi method and more focussed in nature:
  - We cannot facilitate broad-ranging and open-ended evaluation, because of time and cost implications
  - The use of pre-prepared RAG ratings and summaries of the main evidence will bring focus, but also a degree of subjectivity
  - This does not mean that Delphi participants cannot be objective in their own assessments nor feel a need to agree with our findings (indeed, criticism / dissent is encouraged)
- We therefore propose to send out a **fully developed information pack**, summarising the range of WTP values deemed relevant to each of the 12 investment areas, together with our RAG ratings and brief summaries of information sources (participants can read these sources further, if they wish)
- The aim of the questionnaires is then simpler: to ask respondents **to what extent they agree or disagree with the assessments, and why**.
- An important aspect is to **draw from a wider source than only WTP values** – ie related measures of customer priorities, some drawn from qualitative work, to add a broader context.

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IMPACT

It was agreed that this approach would be more achievable for participants. Extensive time and effort was spent on preparing informative material that covered both quantitative and qualitative evidence, together with a more fluid questionnaire reported below.

The material provided to participants is provided in this embedded file:



Master Briefing  
Pack 241122.pdf

## Final Delphi Materials

The approach reported here is an evolution from the original idea of asking participants to individually rate source material with the RAG rating approach. Discussions between Impact and SCC, together with feedback the Peer Reviewer, determined that this would be too onerous for participants.

### PR24 Delphi Panel: Briefing Note

#### *The Requirement*

South Staffs Water and Cambridge Water (SSC) has commissioned market research to obtain Willingness-to-Pay (WTP) values that will be used in their Cost Benefit Analysis (CBA) of business plans for Price Review 2024 (PR24). The values are designed to reflect customer priorities for investment, expressed in monetary-equivalent terms, among Domestic and non-Domestic SSC customers in the South Staffs Water and Cambridge Water supply areas. The valuation results will be delivered in December 2022 and are critical inputs to their investment planning process. There will be a single set of ‘central’ monetary values, for 12 areas of service offered by SCC (see annex for a list of these areas being included in SSC’s Willingness to Pay study).

The key questions we are looking to answer through the Delphi panel are:

- “How much confidence can SSC have in these WTP values?”, and
- “Should appreciably higher or lower values be used, and why?”.

#### *Triangulation*

With this question in mind, there is a requirement from Ofwat that the values from this new research need to be ‘*triangulated*’ against all available insight evidence, both from other WTP studies and more widely. Triangulation in this context means to assess the extent to which the values agree or disagree with other sources. The aim is therefore to review evidence that

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supports or contradicts the results, and to identify the range of values (a high and low value) that should be tested around these central values. With this information, SSC can measure the sensitivity of their investment modelling to these ranges.

The evidence against which the values will be triangulated draws from a range of sources, including recent WTP research from the last couple of years and external sources (including current centralised research being conducted by Ofwat). There are also some other sources which do not explicitly measure WTP values but bring insights on the relative priorities that customers attach to alternative service level.

The challenge is how to agree on the relative robustness of these different sources. SSC have an established method from PR19 in which each source is rated according to a 'Red-Amber-Green' (RAG) and this information is used to apply weights to the available WTP evidence.

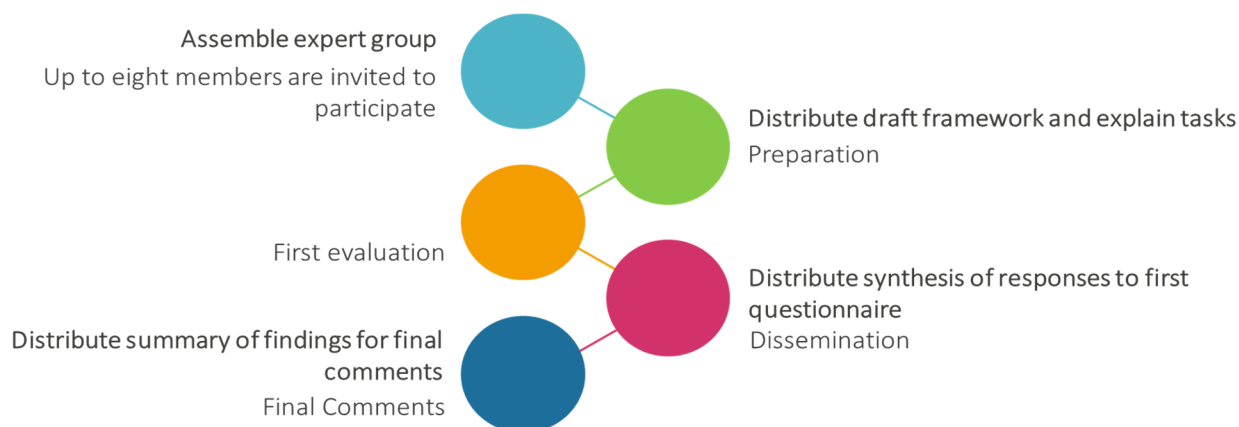
For PR24, we propose to use this same approach, but we wish to invite a panel of assessors to review this information and other relevant evidence for the purpose of recommending the high/low values that should be used by SSC to accompany the central values that will be provided by their latest WTP survey.

### *The Delphi Method*

To facilitate the involvement of this panel, we will be using the 'Delphi' method. This is a process by which a panel of people with relevant experience (be it technical or commercial) are invited to take part in an iterative process run by a single organiser. To encourage full and open expressions of opinion:

- All participants take part anonymously – only the organiser knows who is participating and all comments cannot be attributed to an individual
- All communication is electronic – via emails and primarily through structured online questionnaires.

The planned structure and content are as follows:



### *The first round*

We will send out a fully developed information pack that provides:

- A summary of the WTP values that have been drawn and derived from available sources and considered applicable to each of the 12 investment areas
- Our assessment of the robustness of these WTP values
- Succinct summaries of all other relevant information sources (participants can read these sources further, if they wish) and
- Information on the new research that is being conducted, with accompanying peer reviews.

All this will be accompanied by a questionnaire where panellists are asked to state their views on the existing WTP values, the wider body of evidence, the high – low values WTP that would be appropriate to use and their reasons for taking this view.

### *The second round*

The responses to the first-round questionnaires are collated by the organiser and used to create the second-round questionnaire. The latter presents the same information as before, together with a summary of the range of views from across the entire panel (all anonymised) and finally, the actual central WTP values that will have become available from SSC's latest market research survey.

## Analysis

After the first round, executives at Impact Research will summarise the results using thematic analysis, categorising responses under different topic headings and classifying them in terms of direction (positive, negative, higher values, lower values, etc). This information will be compiled in a summary report which will form new material for the second round.

The process is repeated after the second round, synthesising the feedback to the summary report and assessing the evaluations of the new WTP values included in that round.

Although a consensus is the ideal, the reality is that views will differ on certain topics and the main objective is to identify a range of high/low values around the central WTP estimates that adequately represent this variation in opinion.

## Timings

The proposed timetable for this work was as follows; actual dates are shown in the final column:

Planned w/c	Activity	Who	Actual w/c
17/10/2022	Confirm timetable with participants	Impact	
21/11/2022	Conduct first phase of Delphi – Impact sends out material	Impact	01/12/2022
28/11/2022	Complete questionnaire	Panel	14/12/2022
05/12/2022	Receive results from latest SSC WTP work	Panel	21/12/2022
12/12/2022	Compile all feedback from round 1	Impact	13/01/2022
09/01/2023	Peer review of RAG ratings	Impact	
16/01/2023	Revised questionnaire / graphics	Impact	23/01/2023
23/01/2023	Send out summaries to participants	Impact	06/02/2023
30/01/2023	Conduct final phase of Delphi	Impact	13/02/2023
13/02/2023	Compile and report final WTP values	Impact	20/02/2023
20/02/2023	Invite final comments from panel	Impact	27/02/2023

## Delphi briefing note (annex)

### Service areas being tested in the SSC 2022 WTP surveys

Name	Issue	Current Situation	Options	Units
<b>Customer Service</b>	To provide excellent levels of service when customers get in touch with queries – by phone, email, online, letter, or face-to-face. In 2021/22 (TEXT SUB: South Staffs Water / Cambridge Water) customer satisfaction was rated 3rd out of all 17 water & sewerage companies in England and Wales.	Last year, 1-in-3 customers contacting (TEXT SUB: South Staffs Water / Cambridge Water) had to wait longer than 10 minutes for their call to be answered.	Greater investment would mean (TEXT SUB: South Staffs Water / Cambridge Water) can improve response times and quality of customer service, through additional staff, training and use of the latest technology.	Proportion of customers who have to wait more than 10 minutes for their call to be answered
<b>Risk of a temporary "do not drink" notice</b>	Occasionally, water companies have to send customers a notice saying not to drink the tap water because of an issue with the water quality. Usually this would last about 2-3 days, and (TEXT SUB: South Staffs Water / Cambridge Water) would provide safe drinking water near your property at temporary water stations and would deliver bottled water directly to vulnerable households.	In a typical year, 2 properties are issued a 'do not drink' notice in the (TEXT SUB: South Staffs Water / Cambridge Water) area.	More investment in pipe cleaning and upgrading water treatment processes to use the latest technology would all help to reduce the chance of a 'do not drink' notice happening.	Number of properties per year that receive a "do not drink" notice
<b>Installing 'smart' water meters</b>	(TEXT SUB: South Staffs Water / Cambridge Water) needs to carefully manage demand for	(TEXT SUB FOR SSW: 24% / (TEXT SUB FOR CAM: 66%) of properties have a meter that	Investing in installing more smart water meters and converting existing meters into smart	Number of properties

Name	Issue	Current Situation	Options	Units
	water to ensure there is enough for the future. 'Smart' water meters automatically send regular readings. Having more information helps the water company and customers to understand where and when water is being used, or lost to leaks.	could operate in smart meter mode, although currently they do not operate as a smart meter as the technology to take the readings is not in place yet. (TEXT SUB FOR SSW: South Staffs Water currently takes manual readings once a year.) (TEXT SUB FOR CAM: Cambridge Water currently takes manual readings twice a year.)	meters. The smart meters would help flag issues to reduce water wasted from undetected leaks and would give customers regular updates on their water consumption to help them find ways to use less water.	with a 'smart' meter
<b>Hard water supply</b>	(TEXT SUB: South Staffs Water / Cambridge Water) has a hard water supply. Hard water is not harmful to human health, but it can lead to limescale damage on taps, showerheads and appliances (e.g. washing machines).	Hard water can be softened to reduce damage caused by limescale, but this can alter the taste of the water. (TEXT SUB: South Staffs Water / Cambridge Water) does not currently invest in water softening.	(TEXT SUB: South Staffs Water / Cambridge Water) could either 1) contribute to the cost of installing water softening devices in some customers' homes; or 2) soften the water supply through a large investment in building, running and maintaining a new treatment works.	Investment undertaken to soften the water supply
<b>Lead pipes</b>	Some properties in your area are served by a lead supply pipe. Most of these pipes are owned by the customer and not your water company. (TEXT SUB: South Staffs Water / Cambridge Water) treats the water supply to ensure lead levels in the water are safe, but there are some circumstances where it can become unsafe (e.g. if lead pipes are badly damaged). Over time, lead exposure can be damaging to health.	Currently, 2-in-8 properties in your area are served by a lead supply pipe. (TEXT SUB FOR SSW: South Staffs Water currently replaces 900 lead supply pipes a year, with no charge to the customer whose property it is.) (TEXT SUB FOR CAM: Cambridge Water currently replaces 100 lead supply pipes a year, with no charge to the customer whose property it is.)	(TEXT SUB: South Staffs Water / Cambridge Water) could employ additional teams to remove more lead pipes each year. This would reduce the chance of lead affecting customers' water supply and someone's health being damaged due to lead exposure.	Proportion of properties with a lead supply pipe by 2030
<b>Water lost to leakage from pipes</b>	Every day, treated water is lost to leakage from the (TEXT SUB: South Staffs Water / Cambridge Water) pipe network as pipes age or are damaged. The majority of the water lost to leaks is from the water company's pipes (70%) and the rest is from customer pipes. The company aims to fix the largest and most disruptive leaks first.	(TEXT SUB IF SSW: 20% of the treated water that enters the South Staffs Water network is lost to leakage every day – this is the same as the national average of 20%. That's the same as 26 Olympic sized swimming pools.) (TEXT SUB IF CAM: 15% of the treated water that enters the Cambridge Water network is lost to leakage every day – which is less than the national average of 20%. That's the same as 5 Olympic sized swimming pools.)	Increased investment would mean a larger team fixing pipes, using innovative technologies that detect leaks before they happen, for example by fitting sensors throughout the pipe network, and using pipe materials that are less prone to leaking. This would mean less water would be lost to leakage.	Proportion of treated water lost to leakage
<b>Issues with tap water colour, taste, or smell</b>	Every year, some (TEXT SUB: South Staffs Water / Cambridge Water) customers suddenly experience a temporary issue with the look, taste or smell of their tap water. The water is still safe to drink. The most common issues are the water turning a light brown colour or a chlorine smell, typically lasting up to 24 hours.	(TEXT SUB IF SSW: Around 23,000 properties report issues with drinking water per year in the South Staffs Water area, that's 1-in-26 properties.) (TEXT SUB IF CAM: Around 3,000 properties report issues with drinking water per year in the Cambridge Water area, that's 1-in-47 properties.)	More investment in modernising water treatment processes, expanding the pipe renewal and cleaning programme and installing modern technology would help reduce the number of properties that experience these issues.	Proportion of properties per year experiencing issues with tap water colour, taste, or smell

Name	Issue	Current Situation	Options	Units
<b>Chance of property flooding from a burst pipe</b>	Sometimes the main water supply pipe owned by the water company can burst and flood the ground floor of a customer's home or business. When this happens, (TEXT SUB: South Staffs Water / Cambridge Water) covers the cost of the repair through its insurance to get the property put back as it was.	(TEXT SUB IF SSW: Currently, 51 properties per year in the South Staffs Water) (TEXT SUB IF CAM: Currently, 12 properties per year in the Cambridge Water) area experience flooding due to a burst pipe.	More investment would enable (TEXT SUB: South Staffs Water / Cambridge Water) to employ more teams to replace pipes quicker and invest in new technology (e.g. sensors) to identify pipes that should be replaced before they burst. This would reduce the number of properties that experience flooding.	Number of properties affected by flooding from a burst pipe per year
<b>Low water pressure</b>	Every year some properties experience temporary periods of low water pressure, normally lasting less than 6 hours. These periods of low pressure are usually caused by problems with the pipe network.	2-in-26 properties served by (TEXT SUB: South Staffs Water / Cambridge Water) experience a short period of low water pressure every year.	Increased investment by (TEXT SUB: South Staffs Water / Cambridge Water) to replace and lay new pipes and update other equipment in the network quicker would reduce the risk of problems that cause short periods of low water pressure.	Proportion of properties that experience temporary low pressure per year
<b>Supporting nature and wildlife</b>	(TEXT SUB: South Staffs Water / Cambridge Water) has a legal duty to protect and enhance nature and wildlife and ensure there is no permanent damage to the areas where it operates. The company aims to ensure rivers, (TEXT SUB IF CAM: chalk) streams, reservoirs and underground water stores are healthy.	(TEXT SUB IF SSW: South Staffs Water currently protects and enhances 1,280 acres of land in its supply area. This is equivalent to approximately 720 football pitches.) (TEXT SUB IF CAM: South Staffs Water currently protects and enhances 60 acres of land in its supply area. This is equivalent to approximately 40 football pitches.)	(TEXT SUB: South Staffs Water / Cambridge Water) would increase investment in programmes focused on nature and wildlife. This includes partnering with more landowners and farmers to reduce pollution and protect and enhance more areas of land and water. For example, by creating wetlands or meadows for native wildlife.	Amount of land protected and enhanced to support nature and wildlife
<b>Unplanned short interruptions to water supply</b>	Every year some customers will experience a short interruption to their property's water supply, where it suddenly stops working without warning for 3-6 hours. During this type of interruption, (TEXT SUB: South Staffs Water / Cambridge Water) would deliver bottled water directly to the homes of vulnerable people.	Last year, 1-in-130 properties in the (TEXT SUB: South Staffs Water / Cambridge Water) area experienced a short interruption to their water supply.	More investment would enable (TEXT SUB: South Staffs Water / Cambridge Water) to employ more teams to replace older and damaged pipes quicker and increase the pump and water treatment works maintenance programme.	Proportion of properties experiencing a short supply interruption (3-6 hours) per year
<b>Risk of temporary use ban, including hosepipes</b>	To protect essential water supplies during extended periods of dry weather, (TEXT SUB: South Staffs Water / Cambridge Water) may send you a notice saying you must not use a hosepipe or sprinkler, or use water for other non-essential uses. The length of temporary use bans can vary, but are usually issued for five months, between May and September.	(TEXT SUB IF SSW: South Staffs Water currently plans for the potential need to bring in a temporary use ban once every 40 years. The last temporary use ban in this region was in 1976.) (TEXT SUB IF CAM: Cambridge Water currently plans for the potential need to bring in a temporary use ban once every 20 years. The last temporary use ban in this region was in 1991-92.)	(TEXT SUB: South Staffs Water / Cambridge Water) could invest more to make the water supply more resilient to a changing climate and population growth. For example, by further reducing leakage, extending an existing reservoir, (TEXT SUB IF CAM: investing in a new reservoir) or installing more underground pipes that better transfer water around the region to where demand is highest.	Frequency of temporary water use bans

## Delphi phase 1 final questionnaire

UNIQUE LINKS, NO REDIRECTS

ALLOW BACK BUTTON

### INFO SCREEN

#### Reminder of the Task (Background)

South Staffs Water and Cambridge Water (SSC) has commissioned market research to obtain Willingness-to-Pay values (WTP) for use in their Cost Benefit Analysis of business plans for Price Review 2024. The values are designed to reflect customer priorities for 12 important investment areas, expressed in monetary-equivalent terms, among SSC Domestic and non-Domestic customers across their two supply regions.

The valuation results will provide a single set of 'central' monetary values, for 12 areas of service offered by SCC, and are critical inputs into their investment planning process. However, there is the ability within the investment modelling tool (called Copperleaf) to run sensitivity testing using regional values or those from specific customer segments.

In line with Ofwat requirements, these WTP values have been '*triangulated*' against all available insight evidence. This evidence has been summarised in the information pack shared with you.

As a Delphi panel member, having reviewed the information pack, you are now invited to complete the first of two online feedback forms. Throughout the process, have in mind that the key questions SSC is directly looking to answer are:

- **“How much confidence can SSC have in these WTP values?”, and**
- **“Should appreciably higher or lower values be used, and why?”.**

Feedback point 1 (November 2022): The questions relate to WTP values that have been used in the past, together with the high – low value range. We would like your views on the WTP values that would seem most appropriate to use and your reasons for taking this view.

The second round of feedback will take place in January 2023, once the latest PR24 WTP valuations are available: Questions will cover similar topics, and the accompanying information pack will include a summary of the range of anonymised Delphi panel views from round 1 of the feedback.

#### Section 1: Overview of briefing information and whether there are any gaps

##### Objectives:

- To inform the time commitment required to complete the round 1 survey
- To check the panellists have reviewed all the materials
- To warm panellists up, making sure they answer subsequent sections with the information pack content top of mind
- To capture whether panellists consider whether there was any information missing that they would have expected to see covered in the information pack (for any of the 12 technical themes)

### INFO SCREEN

Thank you for agreeing to take part in round 1 of feedback for the Delphi Panel process.

To provide feedback to this survey, it is necessary for you to have reviewed the briefing pack for each of the 12 technical themes.

You don't have to complete the survey in one go. You may complete it over several times. Any time you re-enter the survey you will be taken to the last question you answered and will be able to continue from there.

You can go back to review your previous answers, but please **do not amend the answers** as this might cause information you have previously entered to become corrupted.

The survey includes some visual elements so we would recommend you complete it on the larger screen such as laptop or PC.

Please click 'continue' to start the survey

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## NEW SCREEN

Q1a Based on what you have read in the briefing pack, for each theme, please provide a summary of what you think are the most important considerations for customers when deciding how they might rank the themes in order of priority for investment. **Open-ended question.**

Q1b For each theme, was there anything missing from the briefing pack that you would have expected to have been included to help you answer the key questions SSC are looking for feedback on? **Open-ended question.**

**SCRIPTER: SHOW Q1a AND Q1b FOR EACH TECHNICAL THEME ON THE SAME SCREEN, ONE AT A TIME. SHOW BOTH QUESTION TEXTS AT THE TOP, THEN EACH TECHNICAL THEME, THEN 2 OE BOXES WHERE FIRST IS LABELLED AS "OVERVIEW" AND SECOND "WHAT WAS MISSING?". REPEAT THE PAGE FOR EACH TECHNICAL THEME**

**ADD EXCLUSIVE OPTION "Nothing" for Q1b**

### TECHNICAL THEMES

1. Risk of temporary 'do not drink' notice
2. Issues with tap water colour, taste, or smell
3. Hard water supply
4. Lead pipes
5. Unplanned interruptions to water supply
6. Chance of property flooding from a burst pipe
7. Low water pressure
8. Water lost to leakage from pipes
9. Supporting nature and wildlife
10. Risk of temporary usage bans, including hosepipes
11. Installing 'smart' water meters
12. Customer Service (from a household customer perspective)

1. Overview
2. What was missing?

Example:

Based on what you have read, for each theme, please provide a summary of what you think are the most important considerations for customers when deciding how they might rank the themes in order of priority for investment. Open-ended question.

For each theme, was there anything missing from the briefing pack that you would have expected to have been included to help you answer the key questions SSC are looking for feedback on?

### **Risk of temporary 'do not drink' notice**

Overview:

What was Missing?

Nothing

Section 2: Delphi participant ranking of 12 technical themes and related questions

Objective:

- Ranking of the 12 technical themes, split out for Household and Non-Household customers overall
- Ranking for the technical themes for key sub-groups (financially vulnerable and future customers)
- Reasons for any differences in ranking between sub-groups and households overall

Based on the review of the materials provided and your wider knowledge, we'd now like you to rank the SSC technical themes based on what you consider to be their order of priority, firstly for households and secondly for non-household customers. By 'non-household' we mean any customer who is not in a private household – e.g., commercial premises, schools, etc.

Q2ai Please rank the technical themes from 1 to 12 **for households**, where 1 is the biggest priority and 12 is the lowest priority. To do this, drag and drop each technical theme into the numbered spaces below.

**SCRIPTER: RESPONDENT WILL NEED TO DRAG AND DROP TECHNICAL THEMES INTO A RANKING ORDER 1-12. UNDERNEATH THIS EXERCISE (ON THE SAME SCREEN) SHOULD APPEAR Q2aii**

	Ranking
Risk of temporary 'do not drink' notice	
Issues with tap water colour, taste or smell	
Hard water supply	
Lead pipes	
Unplanned interruptions to water supply	
Chance of property flooding from a burst pipe	
Low water pressure	
Water lost to leakage from pipes	
Supporting nature and wildlife	
Risk of temporary usage bans, including hosepipes	
Installing 'smart' water meters	
Customer Service	

Q2aii Please explain why you chose this order for SSC Household (HH) customers overall **Open-ended question**

**NEW SCREEN**

Q2bi Please now rank the technical themes from 1 to 12 **for non-households**, where 1 is the biggest priority and 12 is the lowest priority. To do this, drag and drop each technical theme into the numbered spaces below.

**SCRIPTER: RESPONDENT WILL NEED TO DRAG AND DROP TECHNICAL THEMES INTO A RANKING ORDER 1-12. UNDERNEATH THIS EXERCISE (ON THE SAME SCREEN) SHOULD APPEAR Q2bii**

	Ranking
Risk of temporary 'do not drink' notice	
Issues with tap water colour, taste or smell	
Hard water supply	
Lead pipes	
Unplanned interruptions to water supply	
Chance of property flooding from a burst pipe	
Low water pressure	
Water lost to leakage from pipes	
Supporting nature and wildlife	
Risk of temporary usage bans, including hosepipes	
Installing 'smart' water meters	
Customer Service	

Q2bii Please explain why you chose this order for SSC non-household (NHH) customers overall **Open-ended question**

**NEW SCREEN**  
**SC ASK ALL**

Q2ci SSC has two operating regions – (a) South Staffs and (b) Cambridge. If you were ranking the technical themes for these regions independently, would you have chosen a different ranking order?

1. Yes – for household customers
2. Yes – for non-household customers
3. Yes – for both household and non-household customers
4. No

**NEW SCREEN**

**ASK Q2cii IF CODE 1 OR 3 at Q2ci**

Q2cii We will cover the two operating regions in more detail during the second round of feedback in January. At this stage however, please explain how would you have changed the technical themes ranking for **household customers (HH)** if considering the South Staffs and Cambridge operating regions independently? Please give separate answers for each operating region and explain your rationale. **Open-ended question, 2 boxes**

South Staffs

Cambridge

**NEW SCREEN**

**ASK Q2ciii IF CODE 2 OR 3 at Q2ci**

Q2ciii We will cover the two operating regions in more detail during the second round of feedback in January. At this stage however, please explain how would you have changed the technical themes ranking for **non-household customers (NHH)** if considering the South Staffs and Cambridge operating regions independently? Please give separate answers for each operating region and explain your rationale. **Open-ended question, 2 boxes**

South Staffs

Cambridge

**NEW SCREEN**

There are a couple of household (HH) sub-groups which SSC would like you to consider. These are **financially vulnerable** HH customers and **future** HH customers. By '**financially vulnerable**' we mean those customers who are struggling to pay their household bills (including water bills); by '**Future customers**' we mean those who are not currently responsible for directly paying water bills but are likely to be at some point in the future; they are typically under 30 years of age. We recognise that there are other vulnerable customers, many of them on the Public Service Register, but for now please only focus on these two groups: financially vulnerable and future customers.

**NEW SCREEN**

Q2Di\_2/Q2Ei\_2 We will cover the two sub-groups in more detail during the second round of feedback in January. At this stage however, based on the evidence that has been shared with you in the information pack, how would you have changed the technical themes ranking, if at all, if completing the exercise for **financially vulnerable customers** and for **future customers** independently? For ease of reference, we have listed the 12 technical themes below.

Please give separate answers for each customer sub-group and explain your rationale.

**Open-ended question, 2 boxes**

Financially vulnerable customers (Q2Di_2)

Future customers (Q2Ei_2)



Section 3: latest WTP data ranking shared /comparisons with PR 24 technical theme rankings

Objectives:

- To get panellists to contrast the prioritisation rankings they gave for PR19 technical themes against the actual PR19 prioritisation
- Panellists are also asked to consider the range of values for each of the PR19 technical themes
- This section is also preparing panellists for Phase 2 when the focus and comparisons will change to the PR24 technical themes

As you know, the WTP values for the 12 attributes being covered in SSC’s PR24 study will not be available for you to provide feedback on until the second round, in January. However, we do have values and ranges for technical themes tested in other WTP studies, conducted over the last few years. In preparation for round two, we would like you to spend some time now reviewing these earlier outputs, so you are more familiar with them.

**For now, we will be simply asking for top level feedback on the ease of interpreting the data presented, on what stands out and whether you think you would need access to additional information in order to critique the PR24 WTP results during the second round of feedback.**

Below is a graphic showing the order of customer priorities as expressed in terms of WTP values for HH customers. In Round 2 we will be showing you values for HH and NHH individually and for the two SSC regions for you to review once the WTP values are available.

These values are largely based on work that was carried out for PR19 but also incorporates some additional values obtained since. **The blue bars represent the size of the WTP value (and hence the relative importance) for each of the technical themes.**

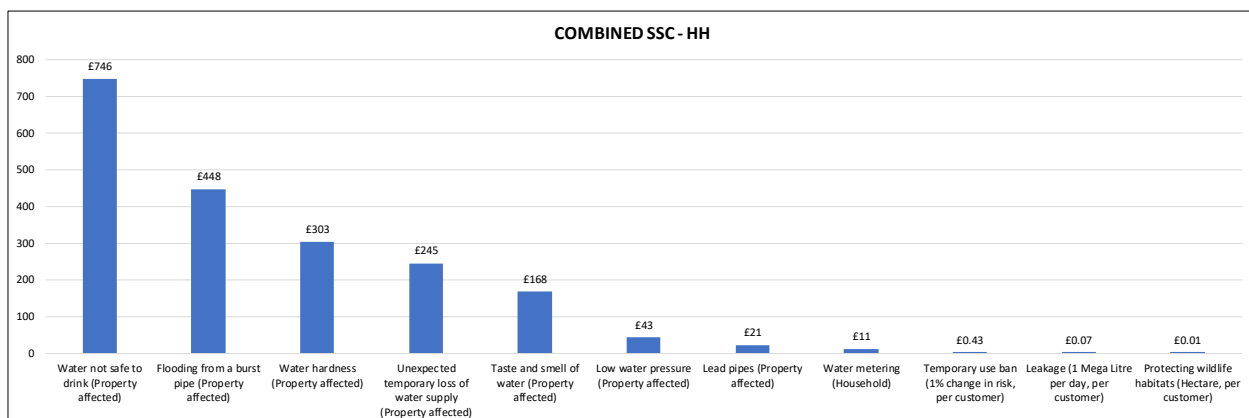
The unit values are based on survey results in which customers were asked to make trade-offs between potential service improvements (or reductions) and annual bill increases (or reductions). This trade-off implies a ‘willingness to pay’ (WTP) for each service improvement, even though customers never explicitly stated they would pay the amount shown in the graphic. **All figures relate to a value per property affected.**

Taking “Water hardness” as an example, the unit WTP value is £303 per property receiving hard water. This represents the average value derived for a customer in a property affected by a service improvement.

**NEW SCREEN**

**SCRIPTER: DISPLAY THE IMAGE ON TOP OF THE SCREEN FOR QUESTION Q3A1, MAXIMISE THE IMAGE ON THE SCREEN, ALLOW ZOOM**

*WTP Values for individual HH customers*



Q3a1 Are you comfortable interpreting the data the way it is displayed? Please explain why/why not. **Open-ended question.**

Q3a2 What stands out for you the most when looking at this chart? Please elaborate. **Open-ended question.**

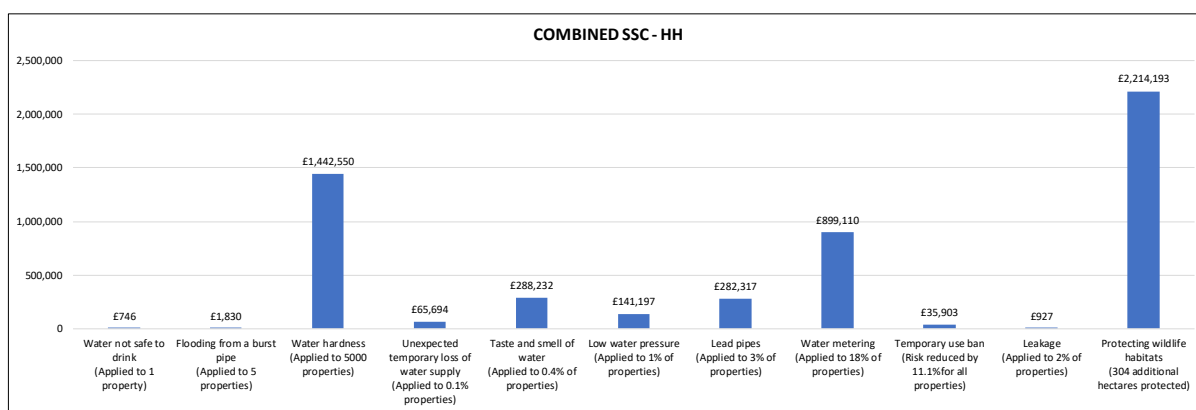
**NEW SCREEN: SCRIPTER: DISPLAY THE IMAGE ON TOP OF THE SCREEN ALONG WITH TEXT, WITH QUESTION Q3a3 DISPLAYED UNDERNEATH, MAXIMISE THE IMAGE ON THE SCREEN, ALLOW ZOOM**

Values for HH customers altogether

An alternative way of displaying the values is shown below. These are the values per property multiplied by the total number of properties. This recognises that **the impact of any change to each service area affects a different number of customers**. This is the one set of information SSC will use to evaluate alternative investment options.

The chart below takes the ‘per property / per customer’ values of the previous chart and applies them to:

1. the impact of SSC improving each area from the current level of service to a slightly improved level (e.g., reducing the number of properties affected each year by ‘water not safe to drink’ from 2 households to 1 household, or protecting some 300 hectares of wildlife habitat); and
2. the value across all the properties / customers that would benefit. In this way, a large ‘per property’ value, such as for water quality, has a smaller ‘total customers’ value, because so few are directly affected; likewise, a low ‘per property’ value, such as for protecting habitats, has a large ‘total customers’ value, because the benefit is received by all customers.



Q3a3 Are you comfortable interpreting the data the way it is displayed? Please explain why/why not. **Open-ended question.**

Q3a4 What stands out for you the most when looking at this chart? Please elaborate. **Open-ended question.**

**NEW SCREEN**

Q3a5 Of the two ways we have graphically represented the WTP values, which do you consider the easiest to interpret and hence give feedback about?

1. First approach (WTP values of individual customers)
2. Second approach (WTP values for customers altogether)
3. They are equally preferred
4. Not sure/ don't know

Please explain your reasoning. **Open-ended question.**

**NEW SCREEN**

Q3a6 What else, if anything, would you need to know in order to provide feedback on the PR24 willingness to pay values? **Open-ended question.**

**NEW SCREEN**

**SCRIPTER: IN TABLE FORMAT, DISPLAY RANKING ORDER GIVEN FOR HOUSEHOLD CUSTOMERS OVERALL (Q2Ai), THE PR19 SSC WTP VALUES (INDIVIDUAL CUSTOMERS) AND PR19 SSC WTP VALUES (CUSTOMERS TOGETHER)**

**UNDERNEATH SHOW Q3a7**

The table below shows the technical themes ranked in the order you specified for household customers overall, along with the WTP summary values for customers overall and for customers together, that we showed earlier.

Please note there is not an exact match between the PR24 technical themes you ranked earlier and the PR19 SSC WTP variables. For example, 'Installing smart water meters' and 'customer service' were not included in the PR19 analysis. Likewise, 'water metering' was tested in PR19 but is not one of the PR24 technical themes.

	Your PR24 HH technical themes ranking (pipe ranks from Q2ai IN DESCENDING ORDER FROM 1 <sup>ST</sup> TO LAST	PR19 SSC WTP values (Individual customers)	PR19 SSC WTP values (Customers altogether)
Risk of temporary 'do not drink' notice	INSERT RANK FROM Q2AI	1	11
Issues with tap water colour, taste, or smell	INSERT RANK FROM Q2AI	5	4
Hard water supply	INSERT RANK FROM Q2AI	3	2
Lead pipes	INSERT RANK FROM Q2AI	7	5
Unplanned interruptions to water supply	INSERT RANK FROM Q2AI	4	7
Chance of property flooding from a burst pipe	INSERT RANK FROM Q2AI	2	9
Low water pressure	INSERT RANK FROM Q2AI	6	6
Water lost to leakage from pipes	INSERT RANK FROM Q2AI	10	10
Supporting nature and wildlife	INSERT RANK FROM Q2AI	11	1
Risk of temporary usage bans, including hosepipes	INSERT RANK FROM Q2AI	9	8
Installing 'smart' water meters	INSERT RANK FROM Q2AI	N/A	N/A
Customer Service	INSERT RANK FROM Q2AI	N/A	N/A
Water Metering		8	3

Q3a7 Accepting that there are some differences in the attributes tested for PR19, did the rank order of those attributes surprise you when considered in relation to your ranking of the 12 PR24 themes? Please be as specific as possible.  
**Open-ended question.**

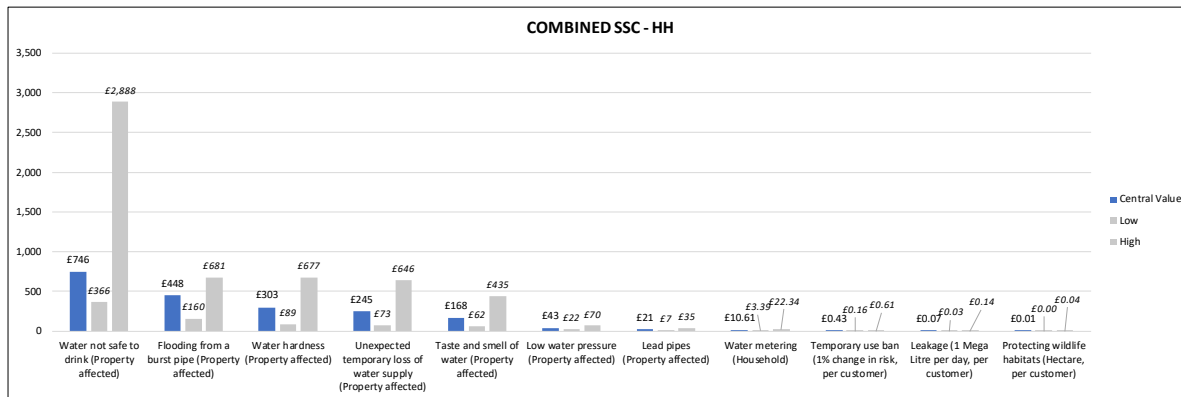
**NEW SCREEN**

**SCRIPTER: DISPLAY THE IMAGE ON TOP OF THE SCREEN ALONG WITH TEXT, WITH QUESTION Q3a8 DISPLAYED UNDERNEATH**

**MAXIMISE THE IMAGE ON THE SCREEN, ALLOW ZOOM**

We will now turn to the range of values around each central WTP value, for each technical theme. The upper and lower limits, represented by the grey bars in the chart below, have been derived from results taken from a range of studies and then converted into comparable WTP values. They represent the level of variability in the data for each technical theme. The chart below shows that for water hardness, for example, the range varies from £89 to £677 for HH customers, and this represents the variation around that average, given that the information has been drawn from a range of sources.

*The Range of values for individual customers (HH)*



**Q3a8** Are you comfortable interpreting the data the way it is displayed? Please explain why/why not. **Open-ended question.**

**Q3a9** Based on what you have seen in other work and the summary information provided in the information pack, did the *range* of values for any of the technical themes surprise you? If yes, please explain why. **Open-ended question.**

Thanks for all your feedback so far, we are now moving to the final section.

**Section 4: Review of PR24 WTP levels (based on 12 technical themes and different levels of service)**

**Objectives:**

- To get panellists to consider the levels to be tested for PR24 WTP (for each of the 12 technical themes) and whether these are appropriate
- The monetary value will not be shown in Phase 1, but will be added for the Phase 2 questionnaire
- To avoid potential bias by including the image with the PR24 levels and other details in the information pack, the information on levels will be accessible via a link to a webpage (they will not be able to see it until this point in the process)

In preparation for the second round of feedback in the new year, we will introduce you to the different performance levels that SSC is testing for each of the 12 technical themes in the PR24 WTP study. At this stage we are presenting the information simply so you can familiarise yourself with it, but we will also ask a few introductory questions about it.

When providing feedback, please also consider the variations for different sub-groups (HH customers vs NHH customers; South Staffs vs. Cambridge operating regions).

Please refer to the file **WTP Attribute Slides\_Phase 1 (24Nov22)** to access the performance levels and the rationale behind each set.

**Q4a** Based on what you have seen in other work and the summary information provided in the information pack, what are your general observations about the levels being tested by SSC? **Open-ended question**

Q4b Do any of the performance levels being tested stand out more than others? If so, why? **Open-ended question**

Q4c Did all the performance levels make sense? Which, if any, raised concerns? **Open-ended question**

Q4d What other information, if any, would you need to see in order to comment on the performance levels being tested?  
**Open-ended question**

Thank you for completing the first round of feedback. We will be in touch soon by email with a few questions asking how you found the experience. As a reminder, the second round of feedback will take place from w/c 9th January, once the latest PR24 willingness to pay valuations are available.

## Delphi phase 2 Information Pack



## Extra ODI slides (missing from original briefing pack)



## Delphi Phase 2 Final Questionnaire

### Reminder of the Task (Background)

Welcome back to the panel and thanks for your continuing participation in the Delphi panel process.

To refresh, South Staffs Water and Cambridge Water (SSC) has commissioned market research to obtain Willingness-to-Pay values (WTP) for use in their Cost Benefit Analysis of business plans for Price Review 2024. The values are designed to reflect customer priorities for 12 important investment areas, expressed in monetary-equivalent terms, among SSC Domestic (HH) and non-Domestic customers (NHH) across their two supply regions.

The valuation results will provide a single set of 'central' monetary values, for 12 areas of service offered by SCC, and are critical inputs into their investment planning process. However, there is the ability within the investment modelling tool (called Copperleaf) to run sensitivity testing using regional values or those from specific customer segments.

In line with Ofwat requirements, these WTP values have been '*triangulated*' against all available insight evidence. This evidence was summarised in the information pack shared with you, before you answered the first of the online feedback forms.

Please remember to have in mind that the key questions SSC is directly looking to answer are:

- **“How much confidence can SSC have in these WTP values?”**, and
- **“Should appreciably higher or lower values be used, and why?”**.

The second information pack you have been sent includes a summary of anonymised views from Delphi panel members (including yourself). These are all from the Phase 1 questionnaire and are provided so you can take this feedback into account when considering your feedback in Phase 2.

For this second round of feedback, the latest WTP valuations for PR24 are now available. The pack includes contextual information about the values generated both from the SSC PR24 WTP project run by NERA / Qa Research and the National ODI research run by Accent / PJM on behalf of Ofwat. The following questions will gather your views on the results for Phase 1, as well as finding out what the range of values tested in the Copperleaf process should be.

## NEW SCREEN

Thank you for your assistance to date and for agreeing to take part in Phase 2 of the Delphi panel.

June 2023

Produced by Impact Research Ltd in strict confidence

To provide feedback in Phase 2, it is necessary for you to have first reviewed the latest information pack containing results from Phase 1, and the new WTP values.

As before, you don't have to complete the feedback form in one go **but please use the same device to input your answers throughout**. Any time you re-enter the survey you will be taken to the last question you answered. Click on <next> at the bottom of the screen and you will be able to continue from there.

Please ensure you only follow the unique link shared with you each time you enter the survey.

You can go back to review your previous answers, but please **do not amend the answers** as this might cause information you have previously entered to become corrupted. We have also included some of your previous responses in the latest information pack for ease of reference.

The feedback form includes some visual elements so we would recommend you complete it on a larger screen, such as laptop or PC.

Please click 'continue' to start giving your feedback.

---

## Section 1

### NEW SCREEN

In the next few questions, we are going to ask again about the 12 areas of service offered by SSC and the summary of all available insight evidence that you reviewed during Phase 1.

You may recall we asked what you considered to be the most important considerations for customers when deciding how they might rank the 12 attributes in order of priority for investment.

Please refer back to slides 9-10 of the information pack. These summarise what the Delphi panel as a whole considered to be the most important considerations for customers.

From the summarised responses:

Q1a Is there anything on the slides that particularly stands out for any of the key themes that you had not previously considered? OPEN END

Q1b Is there anything on the slides that particularly stands out for any of the key themes that you disagree with? OPEN END

### NEW SCREEN

We would now like you to refer to slides 11-12 of the information pack. These slides summarise what the Delphi panel as a whole considered to be missing from the summary of all available insight evidence that they would have expected to have seen included to help answer the key questions SSC are looking for feedback on.

From the summarised responses:

Q2a Is there anything on the slides that particularly stands out as missing for any of the attributes that you had not previously considered? OPEN END

Q2b Is there anything on the slides that particularly stands out as missing for any of the attributes that you disagree with? OPEN END

## NEW SCREEN

Please now refer to slides 14-16 of your information pack, which shows the ranking of the SSC attributes for each Delphi panel member based on what they considered to be their order of priority for **household customers** and the reasoning behind their ranking choice. For ease of reference, we have also displayed the ranking of HH priorities below:

### IMAGE SHOWING [HH RANKINGS](#)

	Delphi panellist 1 ranking	Delphi panellist 2 ranking	Delphi panellist 3 ranking	Delphi panellist 4 ranking
Water lost to leakage from pipes	2	2	1	3
Issues with tap water colour, taste or smell	8	1	4	1
Lead pipes	10	9	2	2
Unplanned interruptions to water supply	4	3	8	4
Customer Service	5	4	6	7
Supporting nature and wildlife	7	5	5	11
Risk of temporary 'do not drink' notice	6	12	3	9
Installing 'smart' water meters	1	6	9	12
Chance of property flooding from a burst pipe	3	11	7	10
Hard water supply	12	7	10	6
Low water pressure	11	10	11	5
Risk of temporary usage bans, including hosepipes	9	8	12	8

Q3a Having read the feedback from the wider Delphi panel members and the rationale behind the rankings, would you change your own ranking of the technical themes for HH customers overall? SINGLE CODE

1. Yes
2. No

Again, for ease of reference, we have displayed the ranking of HH priorities below:

ASK Q3B, IF Q3A = YES, SHOW IMAGE FROM Q3a ON THIS PAGE

Q3b How would you change your overall HH customer ranking of priorities? And why? OPEN END



## NEW SCREEN

Now please refer to slide 17 of the information pack. Here you can see a summary of responses from other Delphi panel members regarding potential differences in what might be important for HH customers if the South Staffs and Cambridge operating regions were considered independently. For ease of reference, we have retained the HH customer ranking of the technical themes below.

[REPEAT IMAGE SHOWING HH RANKINGS \(overall\)](#)

	Delphi panellist 1 ranking	Delphi panellist 2 ranking	Delphi panellist 3 ranking	Delphi panellist 4 ranking
Water lost to leakage from pipes	2	2	1	3
Issues with tap water colour, taste or smell	8	1	4	1
Lead pipes	10	9	2	2
Unplanned interruptions to water supply	4	3	8	4
Customer Service	5	4	6	7
Supporting nature and wildlife	7	5	5	11
Risk of temporary 'do not drink' notice	6	12	3	9
Installing 'smart' water meters	1	6	9	12
Chance of property flooding from a burst pipe	3	11	7	10
Hard water supply	12	7	10	6
Low water pressure	11	10	11	5
Risk of temporary usage bans, including hosepipes	9	8	12	8

Q4a Based on the feedback from the wider Delphi panel on potential changes in priorities in each region (if assessing them independently), would you change your view on the technical themes for either operating region? MULTI CODE

1. Yes, for South Staffs
2. Yes, for Cambridge
3. No, neither

Again, for ease of reference, we have displayed the ranking of HH priorities below:

[ASK Q4B, IF Q4A = YES, FOR SOUTH STAFFS \(CODE 1\), SHOW IMAGE FROM Q4a ON THIS PAGE](#)

Q4b How would you change your view of technical themes for the South Staffs operating region? And why? OPEN END

Again, for ease of reference, we have displayed the ranking of HH priorities below:

[ASK Q4C, IF Q4A = YES, FOR CAMBRIDGE \(CODE 2\), SHOW IMAGE FROM Q4a ON THIS PAGE](#)

Q4c How would you change your view of technical themes for the Cambridge operating region? And why? OPEN END

## NEW SCREEN

In Phase 1 of the Delphi Panel, some panellists requested to see contextual information (specifically industry comparison slides) to see how South Staffs Water and Cambridge Water are performing in relation to other water companies.

Please refer to slides 18-24 of your information pack, which show this industry comparison data.

For ease of reference, we have retained the HH customer ranking of the technical themes below

### REPEAT IMAGE SHOWING HH RANKINGS

	Delphi panellist 1 ranking	Delphi panellist 2 ranking	Delphi panellist 3 ranking	Delphi panellist 4 ranking
Water lost to leakage from pipes	2	2	1	3
Issues with tap water colour, taste or smell	8	1	4	1
Lead pipes	10	9	2	2
Unplanned interruptions to water supply	4	3	8	4
Customer Service	5	4	6	7
Supporting nature and wildlife	7	5	5	11
Risk of temporary 'do not drink' notice	6	12	3	9
Installing 'smart' water meters	1	6	9	12
Chance of property flooding from a burst pipe	3	11	7	10
Hard water supply	12	7	10	6
Low water pressure	11	10	11	5
Risk of temporary usage bans, including hosepipes	9	8	12	8

## ASK ALL. O/E

Q4d Based on the industry comparison how, if at all, would you change your overall HH customer ranking of priorities? Please explain your reasons. OPEN END

## NEW SCREEN

We are now going to consider **non-households**. As a reminder, by 'non-household' we mean any customer who is not in a private household – e.g., commercial premises, schools, etc.

Please refer to slides 26-28 of your information pack, which shows the ranking of the SSC technical themes for each Delphi panel member based on what they consider to be their order of priority for NHH customers and the reasoning behind their ranking choice. For ease of reference, we have also replicated the ranking of NHH priorities below.

### IMAGE SHOWING NHH RANKINGS

	Delphi panellist 1 ranking	Delphi panellist 2 ranking	Delphi panellist 3 ranking	Delphi panellist 4 ranking
Unplanned interruptions to water supply	3	1	2	1
Risk of temporary usage bans, including hosepipes	7	2	5	8
Installing 'smart' water meters	1	9	12	2
Customer Service	2	7	9	3
Water lost to leakage from pipes	6	10	1	9
Low water pressure	8	6	3	5
Issues with tap water colour, taste or smell	11	3	4	4
Supporting nature and wildlife	4	5	8	11
Risk of temporary 'do not drink' notice	12	4	6	7
Chance of property flooding from a burst pipe	5	8	10	12
Hard water supply	9	12	11	6
Lead pipes	10	11	7	10

Q5a Having read the feedback from the wider Delphi panel members and the rationale behind the rankings, would you change your own ranking of the technical themes for NHH customers overall? SINGLE CODE

1. Yes
2. No

Again, for ease of reference, we have displayed the ranking of NHH priorities below:

ASK Q5B, IF Q5A = YES (CODE 1), SHOW IMAGE FROM Q5a ON THIS PAGE

Q5b How would you change your overall NHH customer ranking of priorities? And why? OPEN  
END

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## Section 2

### NEW SCREEN

We would now like to draw your attention to the SSC's PR24 Willingness to Pay research run by NERA and Qa Research.

For the following section you may wish to refer back to slides 31- 39 of the information pack which explain the rationale and objectives behind the NERA approach, examples of the NERA questions asked of research participants and the full list of levels used for each of the technical themes.

We are aware this contextual information is fairly brief, but please answer the following questions to the best of your current ability with the information that is available to you in the information pack – we are interested in your initial reactions.

### ASK ALL, SC

Q6a Do you understand the rationale and objectives behind the NERA WTP study?

1. Yes
2. No

### ASK ALL, O/E

Q6b Please elaborate

### NEW SCREEN

### ASK ALL, O/E

Q6c What is your general reaction to the way the NERA participants were asked to assess the service enhancements?

### ASK ALL, SC

Q6d From the information you have read in the information pack, do you think the NERA approach will provide a robust set of customer valuations for use as inputs into the Copperleaf investment modelling tool (i.e., to run sensitivity testing using regional values or those from specific customer segments)?

1. Yes (no concerns)
2. Yes (but some caveats)
3. No

### ASK ALL, O/E

Q6e Please elaborate

**NEW SCREEN**

Please now refer to slides 42-44 of the information pack which show the **Household WTP values** from the NERA study in a **table format**. For ease of reference, we have also displayed the ranking of HH WTP values below. Please note: Any attributes for which HH customers were unwilling to pay for an improvement (i.e., with a WTP value of £0) have been excluded from the table. The image below is also showing the WTP value for moving the level of service one level up from the current performance level.

ASK ALL, SC

IMAGE SHOWING [NERA HH WTP per unit change from current level of service](#)

Attribute		Unit	HH WTP (£ per unit per household)		
			SST	CAM	Total <sup>7</sup>
B	Risk of a temporary "do not drink" notice	reduction in number of properties that received "do not drink" notice	£0.74	£0.97	£0.79
D	Hard water supply	increase in the number of properties that benefit from investment (thousands)	-	£0.03	£0.01
F	Water lost to leakage from pipes	reduction in the percentage of water that is lost to leakage	£0.61	£1.40	£0.77
H	Chance of property flooding from a burst pipe	reduction in the flooding incidents per year	£0.16	£1.03	£0.34
J	Supporting nature and wildlife	increase in the number of acres protected and enhanced (tens)	£0.03	£0.28	£0.08

ASK ALL, O/E

Q7a What are your general reactions to the overall HH customer WTP values from the NERA study? (The data in the final column of the table). Does anything surprise you (why/why not)?

**NEW SCREEN**

ASK ALL

For ease of reference, we have displayed the NERA HH WTP values below:

IMAGE SHOWING [NERA HH WTP values for a first level improvement](#)

Attribute		Unit	HH WTP (£ per unit per household)		
			SST	CAM	Total <sup>7</sup>
B	Risk of a temporary "do not drink" notice	reduction in number of properties that received "do not drink" notice	£0.74	£0.97	£0.79
D	Hard water supply	increase in the number of properties that benefit from investment (thousands)	-	£0.03	£0.01
F	Water lost to leakage from pipes	reduction in the percentage of water that is lost to leakage	£0.61	£1.40	£0.77
H	Chance of property flooding from a burst pipe	reduction in the flooding incidents per year	£0.16	£1.03	£0.34
J	Supporting nature and wildlife	increase in the number of acres protected and enhanced (tens)	£0.03	£0.28	£0.08

ASK ALL M/C

Q7b What about the breakdown by the South Staffs and Cambridge regions? Does anything surprise you (why/why not)? As a reminder, the image above is also showing the WTP value for moving the level of service one level up from the current performance level. MULTICODE

1. Yes, for South Staffs
2. Yes, for Cambridge
3. No, neither

For ease of reference, we have displayed the NERA HH WTP values below:

ASK Q7c, IF Q7b = YES, FOR SOUTH STAFFS (CODE 1). O/E, SHOW IMAGE FROM Q7b

Q7c What surprises you about the NERA WTP values for the **South Staffs** region? Please elaborate

For ease of reference, we have displayed the NERA HH WTP values below:

ASK Q7d, IF Q7b = YES, FOR CAMBRIDGE (CODE 2). O/E, SHOW IMAGE FROM Q7b

Q7d What surprises you about the NERA WTP values for the **Cambridge** region? Please elaborate

**NEW SCREEN**

Please see the NERA HH WTP values for vulnerable customers and future bill payers below:

ASK ALL,

IMAGE SHOWING [NERA HH WTP values for a first level improvement for vulnerable customers, financially vulnerable customers and future customers \(and total\)](#)

Attribute	Unit	HH WTP (£ per unit per household)				
		All Vulnerable Customers	Financially Vulnerable Customers	Future Bill Payers	All Households	
B	Risk of a temporary "do not drink" notice	reduction in number of properties that received "do not drink" notice	£0.61	£0.59	£1.01	£0.79
D	Hard water supply	increase in the number of properties that benefit from investment (thousands)	£0.01	-	-	£0.01
F	Water lost to leakage from pipes	reduction in the percentage of water that is lost to leakage	£0.56	£0.16	£0.83	£0.77
H	Chance of property flooding from a burst pipe	reduction in the flooding incidents per year	£0.37	-	£0.88	£0.34
J	Supporting nature and wildlife	increase in the number of acres protected and enhanced (tens)	£0.08	£0.06	£0.10	£0.08

ASK ALL, MC

Q7e What about the breakdown for **financially vulnerable customers** and for **future customers**? Does anything surprise you (why/why not)? As a reminder, the image above is also showing the WTP value for moving the level of service one level up from the current performance level.

1. Yes, for financially vulnerable customers
2. Yes, for future customers
3. No, neither

For ease of reference, we have displayed the NERA HH WTP values for vulnerable customers and future bill payers below:

ASK Q7f, IF Q7e = YES, FOR FINANCIALLY VULNERABLE CUSTOMERS (CODE 1). O/E, SHOW IMAGE FROM Q7e

Q7f What surprises you about the NERA WTP values for **financially vulnerable customers**? Please elaborate

For ease of reference, we have displayed the NERA HH WTP values for vulnerable customers and future bill payers below:

ASK Q7g, IF Q7e = YES, FOR FUTURE CUSTOMERS (CODE 2). O/E, SHOW IMAGE FROM Q7e

Q7g What surprises you about the NERA WTP values for **future customers**? Please elaborate



## NEW SCREEN

Please now refer to slides 46 of the information pack which show the **Non-Household WTP values** from the NERA study in a **table format**. For ease of reference, we have displayed the ranking of NHH WTP values below. Please note: Any attributes for which NHH customers were unwilling to pay for an improvement (i.e., with a WTP value of £0) have been excluded from the table. As a reminder, the image above is also showing the WTP value for moving the level of service one level up from the current performance level.

IMAGE SHOWING [NERA NHH WTP values for a first level improvement](#)

Attribute		Unit	NHH WTP (£ per unit per property)
			Total
B	Risk of a temporary "do not drink" notice	reduction in number of properties that received "do not drink" notice	£61.39
F	Water lost to leakage from pipes	reduction in the percentage of water that is lost to leakage	£13.84
H	Chance of property flooding from a burst pipe	reduction in the flooding incidents per year	£12.22
J	Supporting nature and wildlife	increase in the number of acres protected and enhanced (tens)	£3.80

## ASK ALL, O/E

Q8a What are your general reactions to the NERA overall NHH customer WTP values? (The data in the final column of the table). Does anything surprise you (why/why not)?



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## Section 3

### NEW SCREEN

We would now like to draw your attention to the research customer valuations that will be used by Ofwat to derive Outcome Delivery Incentives for PR24 Common Performance Commitments.

For the following section you may wish to refer back to slides 47-54 of the information pack which explain the rationale and objectives behind the ODI approach and examples of the ODI questions asked of research participants.

We are aware this contextual information is fairly brief, but please answer the following questions to the best of your current ability with the information that is available to you in the information pack.

### ASK ALL, SC

Q9a Do you understand the rationale and objectives behind the ODI study?

1. Yes
2. No

### ASK ALL, O/E

Q9b Please elaborate

### NEW SCREEN

### ASK ALL, O/E

Q9c What is your general reaction to the way the ODI research participants were asked to assess the service enhancements?

### ASK ALL, SC

Q9d From the information you have read in the information pack, do you think the ODI approach will provide a robust set of customer valuations for use as inputs into the Copperleaf investment modelling tool (i.e., to run sensitivity testing using regional values or those from specific customer segments)?

1. Yes (no concerns)
2. Yes (but some caveats)
3. No

### ASK ALL, O/E

Q9e Please elaborate



**NEW SCREEN**

Q10a/b/c/d

Please now refer to slides 56-58 of the information pack which show the **Household ODI values** in a **table format**. For ease of reference, we have also displayed the ranking of HH ODI values below

ASK ALL, SC

INSERT MAGE SHOWING HH customer ODI values

Attribute	Unit	All SSC Households
Emergency drought restrictions (2 months)	Per property affected	£292
<b>Unexpected water supply interruption (24h)</b>	Per property affected	<b>£307</b>
<b>Do not drink notice (48h)</b>	Per property affected	<b>£211</b>
Boil water notice (48h)	Per property affected	£201
<b>Unexpected water supply interruption (6h)</b>	Per property affected	<b>£172</b>
<b>Water taste and smell (24h)</b>	Per property affected	<b>£118</b>
<b>Discoloured water (24h)</b>	Per property affected	<b>£134</b>
<b>Discoloured water (6h)</b>	Per property affected	<b>£99</b>
<b>Water taste and smell (6h)</b>	Per property affected	<b>£108</b>
Planned water supply interruption (6h)	Per property affected	£76
<b>Unexpected low water pressure (6h)</b>	Per property affected	<b>£70</b>
Low flows in rivers nearby (2 months)	Per property affected	£58
Low flows in rivers elsewhere (2 months)	Per property affected	£67
<b>Hosepipe ban (5 months)</b>	Per property affected	<b>£48</b>

ASK ALL, O/E

Q10a What are your general reactions to the overall HH customer ODI values? Does anything surprise you (why/why not)?

ASK ALL, MC

Q10b Please refer to slide 57 of the information pack (Due to a delay in sourcing this data, the numbers are not included in the initial information pack. This slide will be sent to you via a separate email). What about the ODI HH customer breakdown by the South Staffs and Cambridge regions? Does anything surprise you (why/why not)?

1. Yes, for South Staffs
2. Yes, for Cambridge
3. No, neither

ASK Q10c, IF Q10b = YES, FOR SOUTH STAFFS (CODE 1). O/E

Q10c What surprises you about the ODI values for the **South Staffs** region? Please elaborate

ASK Q10d, IF Q10b = YES, FOR CAMBRIDGE (CODE 2). O/E

Q10d What surprises you about the ODI values for the **Cambridge** region? Please elaborate

ASK ALL, MC

Q10e Please refer to slide 58 of the information pack (Due to a delay in sourcing this data, the numbers are not included in the initial information pack. This slide will be sent to you via a separate email). What about the ODI breakdown for **financially vulnerable customers** and for **future customers**? Does anything surprise you (why/why not)?

1. Yes, for financially vulnerable customers
2. Yes, for future customers
3. No, neither EXCLUSIVE

ASK Q10f, IF Q10e = YES, FOR FINANCIALLY VULNERABLE CUSTOMERS (CODE 1). O/E

Q10f What surprises you about the ODI values for **financially vulnerable customers**? Please elaborate

ASK Q10g, IF Q10e = YES, FOR FUTURE CUSTOMERS (CODE 2). O/E

Q10g What surprises you about the ODI values for **future customers**? Please elaborate

## NEW SCREEN

Q11a/b/c/d

Please now refer to slide 60 of the information pack which show the **Non-Household ODI values** in a **table format**. For ease of reference, we have also displayed the ranking of NHH ODI values below

ASK ALL, SC

INSERT IMAGE SHOWING NHH customer ODI values

Attribute	Unit	All SSC Households
Emergency drought restrictions (2 months)	Per property affected	£12,119
<b>Unexpected water supply interruption (24h)</b>	Per property affected	£16,001
<b>Do not drink notice (48h)</b>	Per property affected	£8,055
Boil water notice (48h)	Per property affected	£4,993
<b>Unexpected water supply interruption (6h)</b>	Per property affected	£5,880
<b>Water taste and smell (24h)</b>	Per property affected	£4,259
<b>Discoloured water (24h)</b>	Per property affected	£3,042
<b>Discoloured water (6h)</b>	Per property affected	£2,867
<b>Water taste and smell (6h)</b>	Per property affected	£3,248
Planned water supply interruption (6h)	Per property affected	£5,062
<b>Unexpected low water pressure (6h)</b>	Per property affected	£2,327
Low flows in rivers nearby (2 months)	Per property affected	£916
Low flows in rivers elsewhere (2 months)	Per property affected	£951
<b>Hosepipe ban (5 months)</b>	Per property affected	£743

ASK ALL, O/E

Q11a What are your general reactions to the overall NHH customer ODI values? Does anything surprise you (why/why not)?

## Section 4

### NEW SCREEN

In this section, we will be asking for your comments on SSC's two key questions to the Delphi panel:

- **How much confidence can SSC have in the NERA WTP values**
- **Whether appreciably higher or lower WTP values be used, and if so, why?**

Based on all the information shared with you as a Delphi Panel member:

- The 12 technical themes (slides 8-17, and 25-28)
- related insight evidence (from Phase 1)
- industry comparison data (slides 18-24)
- Contextual information and results from the PR24 NERA WTP research (slides 30-46)
- Contextual information and results from the PR24 Outcome Delivery Incentives (ODI) research (slides 47-58)
- Contextual information and results from SSC's PR19 work (slides 59-68)

ASK ALL. SC

Q12a How confident do you think SSC should be in using the NERA WTP values as an input of customer valuation for Cost Benefit Analysis in its Copperleaf investment tool?

1. Not at all confident
2. Hardly confident
3. Somewhat confident
4. Fairly confident
5. Very confident
6. Not sure

ASK ALL. O/E (show on same page as previous question)

**Q12b** Please elaborate on why you chose your previous answer.

**Q13a** For this next question, please consider everything you understand to be important to customers, and consider the rank order of the different attributes from the PR19, PR24 NERA and ODI PR24 studies.

For each attribute, which of the three ranking positions do you think best reflects **household** customer priorities for investment? For example, ‘water lost to leakage from pipes’, do you think it should be ranked 9<sup>th</sup> or 2<sup>nd</sup>?

(Question below shows same ranking as shown on slide 79)

Attributes marked with ‘\*’ denotes where ratio of WTP values has been calculated based on PR24 work

In cases where the ranking you wish to select is the same for more than one study, you only need to select one of the figures (it does not matter which one)

Attribute	PR19		PR24 NERA		ODI PR24		Not sure
Water lost to leakage from pipes	9	Leakage (Applied to 2% of properties)	4	Water lost to leakage from pipes	9	Water lost to leakage from pipes *	
Issues with tap water colour, taste or smell	5	Taste and smell of water (Applied to 0.4% of properties)	7	Issues with tap water colour, taste or smell	2	Water taste and smell (24h)	
Lead pipes	4	Lead pipes (Applied to 3% of properties)	11	Lead pipes	10	Lead pipes *	
Unplanned interruptions to water supply	8	Unexpected temporary loss of water supply (Applied to 0.1% properties)	8	Unplanned interruptions to water supply	4	Unexpected water supply interruption (24h)/ Discoloured water (24h)	
Customer Service			6	Customer Service	10	Customer Service *	
Supporting nature and wildlife	1	Protecting wildlife habitats (304 additional hectares protected)	1	Supporting nature and wildlife	6	Supporting nature and wildlife *	
Risk of temporary ‘do not drink’ notice	11	Water not safe to drink (Applied to 1 property)	3	Risk of temporary ‘do not drink’ notice	8	Do not drink notice (48h)	
Installing ‘smart’ water meters	3	Water metering (Applied to 18% of properties)	9	Installing ‘smart’ water meters	10	Installing ‘smart’ water meters *	
Chance of property flooding from a burst pipe	10	Flooding from a burst pipe	2	Chance of property flooding from a burst pipe	7	Chance of property flooding from a burst pipe *	

		(Applied to 5 properties)					
Hard water supply	2	Water hardness (Applied to 5000 properties)	5	Hard water supply	5	Hard water supply *	
Low water pressure	6	Low water pressure (Applied to 1% of properties)	10	Low water pressure	1	Unexpected low water pressure (6h)	
Risk of temporary usage bans, including hosepipes	7	Temporary use ban (Risk reduced by 11.1% for all properties)	12	Risk of temporary usage bans, including hosepipes	3	Hosepipe ban (5 months)	

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Q14b. Please elaborate on why you chose those answers

Q14a For this next question, please consider everything you understand to be important to customers, and consider the rank order of the different attributes from the PR19, PR24 NERA and ODI PR24 studies.

For each attribute, which of the three ranking positions do you think best reflects **non-household** customer priorities for investment? For example, 'unplanned interruptions to water supply', do you think it should be ranked 8<sup>th</sup>, or 6<sup>th</sup> or 3<sup>rd</sup>?

(Image shows same ranking as shown on slide 80)

Attributes marked with '\*' denotes where ratio of WTP values has been calculated based on PR24 work

Attribute	PR19		PR24 NERA		ODI PR24		Not sure
	Rank	Description	Rank	Description	Rank	Description	
Unplanned interruptions to water supply	8	Unexpected temporary loss of water supply (Applied to 0.1% properties)	6	Unplanned interruptions to water supply	3	Unexpected water supply interruption (24h)	
Risk of temporary usage bans, including hosepipes	3	Temporary use ban (Risk reduced by 11.1% for all properties)	11	Risk of temporary usage bans, including hosepipes	5	Hosepipe ban (5 months)	
Installing 'smart' water meters			9	Installing 'smart' water meters	9	Installing 'smart' water meters *	
Water lost to leakage from pipes	9	Leakage (Applied to 2% of properties)	4	Water lost to leakage from pipes	8	Water lost to leakage from pipes *	
Low water pressure	6	Low water pressure (Applied to 1% of properties)	7	Low water pressure	1	Unexpected low water pressure (6h)	
Issues with tap water colour, taste or smell	5	Taste and smell of water (Applied to 0.4% of properties)	8	Issues with tap water colour, taste or smell	2	Water taste and smell (24h) / Discoloured water (24h)	
Supporting nature and wildlife	1	Protecting wildlife habitats (304 additional hectares protected)	2	Supporting nature and wildlife	4	Supporting nature and wildlife *	
Risk of temporary 'do not drink' notice	10	Water not safe to drink (Applied to 1 property)	1	Risk of temporary 'do not drink' notice	6	Do not drink notice (48h)	
Chance of property flooding from a burst pipe	7	Flooding from a burst pipe (Applied to 5 properties)	3	Chance of property flooding from a burst pipe	7	Chance of property flooding from a burst pipe *	
Hard water supply	2	Water hardness (Applied to 5000 properties)	5	Hard water supply	9	Hard water supply *	

Lead pipes	4	Lead pipes (Applied to 3% of properties)	10	Lead pipes	9	Lead pipes *	
Q14b. Please elaborate on why you chose those answers							