NWG
living water

PR24 CUSTOMER RESEARCH – ENHANCEMENTS AND OTHER SERVICE AREAS SUMMARIES

Contents

INTRODUCTION

This document sets out our synthesis of all qualitative and quantitative customer evidence relating to enhancements and other service areas. The summaries follow a standard format, which is described below. A separate document, A7-01 PR24 Customer Research – Common PCs Insight Summaries (NES42), sets out further insights.

It is notable that the volume of evidence presented in this document is lower than the volume of evidence set out in our common PCs Insight Summaries. This is because our main research focus for PR24 has been on common PCs, as these represent the areas of service which matter most to customers. This document presents our insight covering all areas other can common PCs, some of which have received less overall focus in our research programme.

The top left-hand corner of each sheet sets some RAG guidance on interpreting the guidance

Volume of evidence	Medium (14 sources)	Divergence of view	High
Quality of evidence	High	Regional differences	Not appliable

Volume of evidence
An assessment of the strength of the evidence base. This judgement is based on counting the number of sources which have contributed to each synthesis sheet and given the highest rating to PCs with the most sources and the lowest score to PCs with the least.

Quality of evidence
This is our assessment of the overall quality of the evidence base, considering best practice principles for research.

Divergence of view
The divergence of views across segments (e.g., household, non-household, stakeholder, vulnerable and future customers)

Regional differences
The differences of views across our NW and ESW regions.

In all instances a green box represents 'high/good', orange 'medium/mixed', and red 'poor/weak/low'.

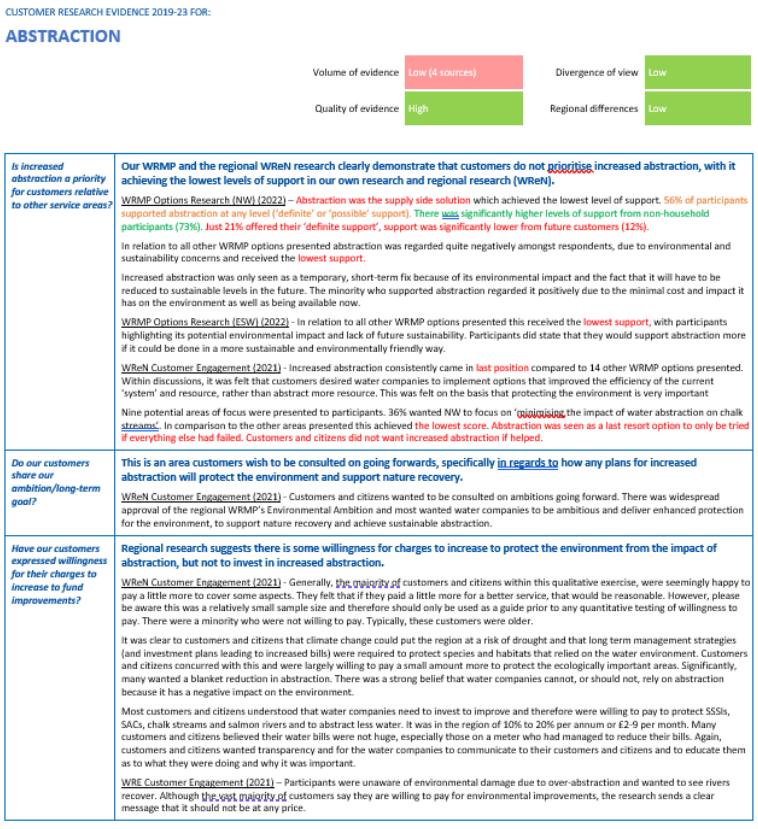
The right-hand side of the page sets out the questions we have asked ourselves in each area, to help us support our business planning.

These are:

Is increasing the number of mains repairs a priority for customers relative to other common performance commitments?

Do our customers share our ambition/long-term goal?

Have our customers expressed willingness for their charges to increase to fund improvements?



CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

ABSTRACTION

Volume of evidence	Low (4 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Is increased abstraction a priority for customers relative to other service areas?	**Our WRMP and the regional WReN research clearly demonstrate that customers do not prioritise increased abstraction, with it achieving the lowest levels of support in our own research and regional research (WReN).** WRMP Options Research (NW) (2022) – Abstraction was the supply side solution which achieved the lowest level of support. 56% of participants supported abstraction at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (73%). Just 21% offered their 'definite support', support was significantly lower from future customers (12%). In relation to all other WRMP options presented abstraction was regarded quite negatively amongst respondents, due to environmental and sustainability concerns and received the lowest support. Increased abstraction was only seen as a temporary, short-term fix because of its environmental impact and the fact that it will have to be reduced to sustainable levels in the future. The minority who supported abstraction regarded it positively due to the minimal cost and impact it has on the environment as well as being available now. WRMP Options Research (ESW) (2022) - In relation to all other WRMP options presented this received the lowest support, with participants highlighting its potential environmental impact and lack of future sustainability. Participants did state that they would support abstraction more if it could be done in a more sustainable and environmentally friendly way. WReN Customer Engagement (2021) - Increased abstraction consistently came in last position compared to 14 other WRMP options presented. Within discussions, it was felt that customers desired water companies to implement options that improved the efficiency of the current 'system' and resource, rather than abstract more resource. This was felt on the basis that protecting the environment is very important Nine potential areas of focus were presented to participants. 36% wanted NW to focus on 'minimising the impact of water abstraction on chalk streams'. In comparison to the other areas presented this achieved the lowest score. Abstraction was seen as a last resort option to only be tried if everything else had failed. Customers and citizens did not want increased abstraction if helped.
Do our customers share our ambition/long-term goal?	**This is an area customers wish to be consulted on going forwards, specifically in regards to how any plans for increased abstraction will protect the environment and support nature recovery.** WReN Customer Engagement (2021) - Customers and citizens wanted to be consulted on ambitions going forward. There was widespread approval of the regional WRMP's Environmental Ambition and most wanted water companies to be ambitious and deliver enhanced protection for the environment, to support nature recovery and achieve sustainable abstraction.
Have our customers expressed willingness for their charges to increase to fund improvements?	**Regional research suggests there is some willingness for charges to increase to protect the environment from the impact of abstraction, but not to invest in increased abstraction.** WReN Customer Engagement (2021) - Generally, the majority of customers and citizens within this qualitative exercise, were seemingly happy to pay a little more to cover some aspects. They felt that if they paid a little more for a better service, that would be reasonable. However, please be aware this was a relatively small sample size and therefore should only be used as a guide prior to any quantitative testing of willingness to pay. There were a minority who were not willing to pay. Typically, these customers were older. It was clear to customers and citizens that climate change could put the region at a risk of drought and that long term management strategies (and investment plans leading to increased bills) were required to protect species and habitats that relied on the water environment. Customers and citizens concurred with this and were largely willing to pay a small amount more to protect the ecologically important areas. Significantly, many wanted a blanket reduction in abstraction. There was a strong belief that water companies cannot, or should not, rely on abstraction because it has a negative impact on the environment. Most customers and citizens understood that water companies need to invest to improve and therefore were willing to pay to protect SSSIs, SACs, chalk streams and salmon rivers and to abstract less water. It was in the region of 10% to 20% per annum or £2-9 per month. Many customers and citizens believed their water bills were not huge, especially those on a meter who had managed to reduce their bills. Again, customers and citizens wanted transparency and for the water companies to communicate to their customers and citizens and to educate them as to what they were doing and why it was important. WRE Customer Engagement (2021) – Participants were unaware of environmental damage due to over-abstraction and wanted to see rivers recover. Although the vast majority of customers say they are willing to pay for environmental improvements, the research sends a clear message that it should not be at any price.

The left-hand side of the page sets out our response to the question in **blue** and a high level summary of evidence we have drawn upon to form our response.

We have colour coded the evidence, where possible, to indicate its sentiment:

Wording in green tends to be evidence of customer support.

Wording in orange tends to be either mixed or inconclusive evidence or mid-level support.

Wording in red tends to be evidence that customers aren't supportive.

SECTION 3: ENHANCEMENTS AND OTHER SERVICE AREAS

WATER RESOURCE MANAGEMENT PLAN SUPPLY SIDE OPTIONS

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

ABSTRACTION

Volume of evidence	Medium (4 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Is increased abstraction a priority for customers relative to other service areas?	**Our WRMP and the regional WReN research clearly demonstrate that customers do not prioritise increased abstraction, with it achieving the lowest levels of support in our own research and regional research (WReN).** WRMP Options Research (NW) (2022) – Abstraction was the supply side solution which achieved the lowest level of support. 56% of participants supported abstraction at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (73%). Just 21% offered their 'definite support', support was significantly lower from future customers (12%). In relation to all other WRMP options presented abstraction was regarded quite negatively amongst respondents, due to environmental and sustainability concerns and received the lowest support. Increased abstraction was only seen as a temporary, short-term fix because of its environmental impact and the fact that it will have to be reduced to sustainable levels in the future. The minority who supported abstraction regarded it positively due to the minimal cost and impact it has on the environment as well as being available now. WRMP Options Research (ESW) (2022) - In relation to all other WRMP options presented this received the lowest support, with participants highlighting its potential environmental impact and lack of future sustainability. Participants did state that they would support abstraction more if it could be done in a more sustainable and environmentally friendly way. WReN Customer Engagement (2021) - Increased abstraction consistently came in last position compared to 14 other WRMP options presented. Within discussions, it was felt that customers desired water companies to implement options that improved the efficiency of the current 'system' and resource, rather than abstract more resource. This was felt on the basis that protecting the environment is very important Nine potential areas of focus were presented to participants. 36% wanted NW to focus on 'minimising the impact of water abstraction on chalk streams'. In comparison to the other areas presented this achieved the lowest score. Abstraction was seen as a last resort option to only be tried if everything else had failed. Customers and citizens did not want increased abstraction if helped.
Do our customers share our ambition/long-term goal?	**This is an area customers wish to be consulted on going forwards, specifically in regard to how any plans for increased abstraction will protect the environment and support nature recovery.** WReN Customer Engagement (2021) - Customers and citizens wanted to be consulted on ambitions going forward. There was widespread approval of the regional WRMP's Environmental Ambition and most wanted water companies to be ambitious and deliver enhanced protection for the environment, to support nature recovery and achieve sustainable abstraction.
Have our customers expressed willingness for their charges to increase to fund improvements?	**Regional research suggests there is some willingness for charges to increase to protect the environment from the impact of abstraction, but not to invest in abstraction as a way of increasing water resources.** WReN Customer Engagement (2021) - Generally, the majority of customers and citizens within this qualitative exercise, were seemingly happy to pay a little more to cover some aspects. They felt that if they paid a little more for a better service, that would be reasonable. However, please be aware this was a relatively small sample size and therefore should only be used as a guide prior to any quantitative testing of willingness to pay. There were a minority who were not willing to pay. Typically, these customers were older. It was clear to customers and citizens that climate change could put the region at a risk of drought and that long term management strategies (and investment plans leading to increased bills) were required to protect species and habitats that relied on the water environment. Customers and citizens concurred with this and were largely willing to pay a small amount more to protect the ecologically important areas. Significantly, many wanted a blanket reduction in abstraction. There was a strong belief that water companies cannot, or should not, rely on abstraction because it has a negative impact on the environment. Most customers and citizens understood that water companies need to invest to improve and therefore were willing to pay to protect SSSIs, SACs, chalk streams and salmon rivers and to abstract less water. It was in the region of 10% to 20% per annum or £2-9 per month. Many customers and citizens believed their water bills were not huge, especially those on a meter who had managed to reduce their bills. Again, customers and citizens wanted transparency and for the water companies to communicate to their customers and citizens and to educate them as to what they were doing and why it was important. WRE Customer Engagement (2021) – Participants were unaware of environmental damage due to over-abstraction and wanted to see rivers recover. Although the vast majority of customers say they are willing to pay for environmental improvements, the research sends a clear message that it should not be at any price.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

NEW BOREHOLE

Volume of evidence	Low (1 source)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Is drilling a new borehole a priority for customers relative to other service areas?	**Our WRMP (NW) research showed support for a new borehole in Berwick.** WRMP Options Research (NW) (2022) - A new borehole was the joint most supported supply side solution (along with a new pipeline). A new borehole had high support at all stages of the research. 69% of participants supported new borehole at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (81%). 33% offered their 'definite support'. In focus groups, the borehole was supported as it's seen as having low cost and a lower environmental impact compared to other options. Participants living in Berwick were much more likely to support the borehole option in comparison with the overall sample. However, those who expressed their opposition to this measure were concerned about other effects it could cause. In the focus groups respondents also raised concerns about drilling too many boreholes.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

PIPELINE

Volume of evidence	Low (3 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	Low

Is building new pipelines to transport water a priority for customers relative to other service areas?	**Our WRMP research suggests that customers support a new pipeline over other potential WRMP options. This high-level of support does not extend to piping water outside of it's region (see Water import within the UK)** WRMP Options Research (NW) (2022) – A new pipeline was the joint most supported supply side solution (along with a new borehole). New pipelines had high support at all stages of the research. 69% of participants supported new pipeline at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (82%). 33% offered their 'definite support'. Most respondents supported the idea of building a new pipeline due to its ability to transfer water to areas of drought. It enables flexibility and ensures areas of water stress are looked after. Participants also saw a new pipeline as a tried and tested solution which could create jobs in the region and profit if water was to be sold. Participants living in Berwick were much more likely to support the pipeline option in comparison with the overall sample. A minority expressed some concerns about the possibilities of leaks arising from the pipeline and the disruption that would cause. WRMP Options Research (ESW) (2022) – New pipelines had high support at all stages of the research. 70% of participants supported new pipeline at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (80%). 29% offered their 'definite support'. We saw significantly higher levels of definite support from non-household participants (44%). Pipeline comes third for Essex respondents on their priority list but Suffolk respondents choose aquifer storage & recharge and water recycling plants ahead of it. Focus group respondents also saw it as a cost-effective solution with a short timescale for delivery. WRE Customer Engagement (2022) – Participants were asked which three supply and demand options they would most like to see included in the WRE plan. 'Transferring water around and beyond the region' was chosen by 16% of participants, ranking 9th out of the 10 options presented and fifth in terms of supply options (6 presented).
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

WATER IMPORT (WITHIN THE UK)

Volume of evidence	Low (4 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	Medium

Is drilling water import a priority for customers relative to other service areas?	**Participants support water trading, but with caveats in place, that it doesn't result in a threat to their own supply and that other WRMP options are exhausted first.** WRMP Options Research (ESW) (2022) – 64% of participants supported water import (within the UK) at any level ('definite' or 'possible' support). There were higher levels of support from customers in vulnerable circumstances (70%). Just 27% offered their 'definite support'. We saw significantly higher levels of definite support from non-household participants (43%). Water import was seen as a way to share resources which could use river systems to transport water in between areas. Participants in Suffolk were significantly less likely to support water import within the UK compared to those in Essex. WReN Customer Engagement (2021) – Participants were shown a short educational film to explain water trading. Customers and citizens were generally in support of water trading as long as there was no threat to their own water supply. When ranked against other WRMP options water transfers came 11/14, for many, water trading was seen as 'last resort' and that other WRMP Options should be in place such as reservoir embankment raising, and reservoir desilting as well as increased metering and supply pipe renewal before water trading takes place. There were a number of conditions required to be met prior to support for water trading. The key condition to be met was that water trading would not have a detrimental effect on the donor companies' water supplies. It was argued that water should be taken from all three WReN water companies rather than just the one. Otherwise, it could have a detrimental impact on the environment and the water levels in the reservoirs. Northumbrian Water customers and citizens were more open than the other water regions because they felt they had a surplus because of Kielder Reservoir. Some argued that if Northumbrian traded water, the revenue could contribute towards pipe repairs. Equally, building resource solutions in the north could be a positive since it would create jobs and increase revenues to the companies building the infrastructure. It was felt the investment was desperately needed in the north. Building more infrastructure in the north for the benefit of people in the south did not sit happily with many WReN customers and citizens. It begged the question of what the benefit to them in the north was? They don't need more water. It was felt that the building works could have a negative impact on the environment, such as large pumping stations built in the countryside. WRE Customer Engagement (2022) – Water transfer had the least appeal to participants. Participants were asked which three supply and demand options they would most like to see included in WRE plan. 'Transferring water around and beyond the region' was chosen by 16% of participants, ranking 9th out of the 10 options presented and fifth in terms of supply options (6 presented).
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**Participants expressed concern at the perceived cost of water trading, and were clear that costs must be borne by the receiving company.** WReN Customer Engagement (2021) – Generally, the majority of customers and citizens within this qualitative exercise, were seemingly happy to pay a little more to cover some aspects. They felt that if they paid a little more for a better service, that would be reasonable. However, please be aware this was a relatively small sample size and therefore should only be used as a guide prior to any quantitative testing of willingness to pay. There were a minority who were not willing to pay. Typically, these customers were older. Participants expressed concern at the cost of water trading. It was perceived that transporting water would be expensive. Participants were clear that the cost of pipes, transporting the water and pumping stations must not be passed on to the donor water company but must be paid by the company requiring water. It was thought only to be viable if the cost of transporting the water was low. Some expected the water companies to foot the bill rather than customers and citizens as they were businesses that made a profit. Many customers and citizens felt that issues such as leaks should be addressed before water companies traded water. Leakage was such a contentious issue and there was concern that if WReN water companies ignored leaks in the short term, it would lead to more water being lost and then they would be in deficit. However, there was support for water trading in a scenario where the water company invested £Xm to reduce leakage, which in turn created surplus water as it was not being leaked. On the whole, it was felt that trading of untreated water would be more preferable because then the donor company has fewer costs. However, if there was more profit to be made by trading treated water then it would make sense to trade treated water. Some felt that the water should be treated for health reasons although many felt they were unqualified to answer that question.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

WATER RECYCLING PLANTS

Volume of evidence	Medium (5 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	NA

Are water recycling plants a priority for customers relative to other service areas?	**Participants are open to water recycling and it receives relatively high levels of support. Reassurances would be required about the quality of recycled water and the impact of water recycling on the environment.** WRMP Options Research (ESW) (2022) – 74% of participants supported water recycling at any level ('definite' or 'possible' support). 39% offered their 'definite support'. Water recycling plants appealed to focus group respondents thanks to the 'recycling' element and the high amount of water generated. It was, however, noted that the timeline to introduce a water recycling plant is long and an interim solution would be needed to 'fill the gap'. Future customers were more inclined to support water recycling plants, with water recycling plants being this group's most supported option. (48% definitely support). Participants in Suffolk also had a preference towards water recycling, choosing it over a new pipeline, unlike participants in Essex. Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants were introduced to two approaches ESW could take to securing water supplies and told that ESW proposes to conduct detailed design work for both options to inform a decision, in 2026, on which is the most appropriate investment. Reservoir (winter storage): Could take up to 2035 to be operational; has a higher up-front cost; and a lower running cost long-term Effluent Plant (reuse scheme): Could be operational by 2032; has a lower up-front cost; and a higher running cost long-term Participants felt that a decision should be made sooner than 2026, to prevent wasting resources of time and money on designing plans. Overall, participants preferred the reservoir solution due to being more sustainable and having lower costs long-term. WRE Promoting Water Efficiency Among Non-Households (2022) - A high volume of participants were open to hearing about encouraging high-volume business users to adopt water recycling. The main perceived benefits was cost savings. Some expressed concerns about potentially high costs and distruption and also the quality of recycled water and if it would be suitable for use by food/hygiene businesses WRE Customer Engagement (2022) – Participants were asked which three supply and demand options they would most like to see included in WRE plan. Recycling water was chosen by 27% of participants, ranking 7th out of the 10 options presented and third in terms of supply options (6 presented). Non-household participants stated an interested in recycling their water and want water companies to prioritise this. Participants felt that water recycling was a sensible option, although it felt like something which we should be doing already, rather than an innovative new initiative. There is also some confusion between this option and the use of grey water for non-drinking purpose. As a result, responses to this option were muted, with respondents displaying neither a strong like or dislike to the concept. Participants also wanted some reassurance that water would be checked after treatment to ensure it is fit for release into the natural environment and some expressed concerns around the impact on the environment of building of recycling plants.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**Our qualitative Affordability and Acceptability research found that participants in ESW were willing for their charges to increase by at least £22.56 per year to recycle wastewater and build new storage reservoirs.** Affordability and Acceptability Research (qualitative) (2023) – ESW participants discussed investment in 'securing water supplies', which was described as 'Investment in new water supplies including schemes to recycle wastewater and build new storage reservoirs.' We explained the benefits and asked if they wanted us to do this for an additional annual average cost of £22.56 for the medium phasing option, or an unspecified higher amount for the high investment option. This was felt to be an important priority as there was an acknowledgement that Essex & Suffolk Water is in a water stressed area. A notable number of respondents felt that a higher phasing option was necessary. In contrast, a notable number felt the medium phasing option was most appropriate, arguing that this would enable the necessary work to be conducted. They also noted that they did not feel able to opt for the higher investment as it did not have a defined bill impact associated with it. It is important to note that the lack of information provided about the bill impact of the higher bill investment, combined with the knowledge that the low investment option would likely breach the law led several people panel respondents to feel that the medium option was the only feasible choice.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

NITRATE REMOVAL

Volume of evidence	Low (1 source)	Divergence of view	Medium
Quality of evidence	High	Regional differences	Insufficient evidence

Is nitrate removal a priority for customers relative to other service areas?	**Participants found this option difficult to understand and it received lower levels of support than other options presented.** WRMP Options Research (ESW) (2022) – Nitrate removal found low customer support throughout. It is important to note that this solution was difficult to understand for respondents, despite our attempts to explain it in the focus groups and survey. 61% of participants supported nitrate removal at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (75%). Just 26% offered their 'definite support'. We saw significantly higher levels of definite support from non-household participants (42%). The main concern around this solution is around the chemicals used in the process which make it risky and potentially damaging.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

AQUIFER STORAGE AND RECHARGE

Volume of evidence	Low (2 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Is aquifer storage and recharge a priority for customers relative to other service areas?	**Aquifer storage and recharge has some support but is felt to be more of a 'back-up solution' than a leading approach.** WRMP Options Research (ESW) (2022) - 62% of participants supported aquifer storage and recharge at any level ('definite' or 'possible' support). There was significantly higher levels of support from non-household participants (82%). Although generally supported by the majority aquifer storage and recharge was felt to be more of a 'back-up solution' than a leading approach. Aquifer storage & recharge had lower levels of definite support compared to other options with 26% offering 'definite support'. We saw significantly higher levels of definite support from non-household participants (44%). WRE Customer Engagement (2022) – Participants were asked which three supply and demand options they would most like to see included in WRE plan. 'Storing water underground' was chosen by 17% of participants, ranking 8th out of the 10 options presented and fourth in terms of supply options (6 presented).
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

WINTER STORAGE RESERVOIR

Volume of evidence	Medium (4 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Are winter storage reservoirs a priority for customers relative to other service areas?	**Winter storage reservoirs have high support because of their minimal impact on the environment and the long-term benefits they bring to communities** WRMP Options Research (ESW) (2022) - Winter storage reservoirs had high support at all stages of the research. 78% of participants supported a winter storage reservoir at any level ('definite' or 'possible' support). There were significantly higher levels of support from non-household participants (87%) and significantly lower levels of support from future customers (69%). 42% offered their 'definite support'. We saw significantly higher levels of definite support from non-household participants (59%) and significantly lower levels of support from future customers (25%). Respondents in Suffolk were also significantly less likely to support winter storage reservoirs compared to those in Essex. Winter storage reservoirs were supported because of their minimal impact on the environment and their long-term benefit to the community, which was thought to outweigh the longer time-scale and social costs incurred in the short term. WRE Customer Engagement (2022) – Participants were asked which three supply and demand options they would most like to see included in WRE plan. 'More reservoirs to store water' was chosen by 37% of participants, ranking 3rd out of the 10 options presented and 1st in terms of supply options (6 presented). Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants were introduced to two approaches ESW could take to securing water supplies and told that ESW proposes to conduct detailed design work for both options to inform a decision, in 2026, on which is the most appropriate investment. Reservoir (winter storage) Effluent Plant (reuse scheme) Participants felt that a decision should be made sooner than 2026, to prevent wasting resources of time and money on designing plans. Overall, participants preferred the reservoir solution due to being more sustainable and having lower costs long-term.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**Our qualitative Affordability and Acceptability research found that participants in ESW were willing for their charges to increase by at least £22.56 per year to recycle wastewater and build new storage reservoirs.** Affordability and Acceptability Research (qualitative) (2023) – ESW participants discussed investment in 'securing water supplies', which was described as 'Investment in new water supplies including schemes to recycle wastewater and build new storage reservoirs.' We explained the benefits and asked if they wanted us to do this for an additional annual average cost of £22.56 for the medium phasing option, or an unspecified higher amount for the high investment option. This was felt to be an important priority as there was an acknowledgement that Essex & Suffolk Water is in a water stressed area. A notable number of respondents felt that a higher phasing option was necessary. In contrast, a notable number felt the medium phasing option was most appropriate, arguing that this would enable the necessary work to be conducted. They also noted that they did not feel able to opt for the higher investment as it did not have a defined bill impact associated with it. It is important to note that the lack of information provided about the bill impact of the higher bill investment, combined with the knowledge that the low investment option would likely breach the law led several people panel respondents to feel that the medium option was the only feasible choice.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

DESALINATION PLANT

Volume of evidence	Medium (4 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Is desalination a priority for customers relative to other service areas?	**Desalination received lower levels of support than other WRMP options, despite the potentially high volumes of water it could generate. Participants expressed concern at the high costs of desalination, coupled with the harmful impact of brine discharge on aquatic life.** WRMP Options Research (ESW) (2022) – We observed lower levels of support for desalination compared to other supply and demand WRMP options, despite the potentially high volumes of water it could generate. 58% of participants supported desalination at any level ('definite' or 'possible' support). There were significantly higher levels of support from non-household participants (84%). Just 27% offered their 'definite support'. We saw significantly higher levels of definite support from non-household participants (43%). Participants expressed concern at the high costs of desalination, coupled with the harmful impact of brine discharge on aquatic life. The report does note that support may increase if an environmentally friendly alternative to brine discharge can be found. WReN Customer Engagement (2021) – Participants were asked to rank 14 WRMP options. 'Desalination' ranked 12th of the 14 options presented. WRE Customer Engagement (2022) - Participants were asked which three supply and demand options they would most like to see included in WRE plan. 'Taking water from the sea (desalination)' was chosen by 31% of participants, ranking 6th out of the 10 options presented and second in terms of supply options (6 presented).
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

WATER RESOURCE MANAGEMENT PLAN - DEMAND SIDE OPTIONS

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

SMART METERING

Volume of evidence	Medium (9 sources)	Divergence of view	High
Quality of evidence	High	Regional differences	NA

Is smart metering a priority for customers relative to other service areas?	**The evidence on prioritisation of smart metering, in relation to other service areas is mixed. When metering is presented as part of an overall water efficiency package (e.g., as in our pre-acceptability (2023) research) it is considered a high priority. However, when we test it in isolation (e.g., as in our WRMP options research) support drops.** **Evidence around NHHs is also mixed. Our 2022 retailer and non-household research suggests NHHs recognise the benefits of smart metering, whereas Ofwat and CCW's insight surveys suggest it is a low priority.** Acceptability and Affordability Testing (Qualitative) (2023) - Pre-Acceptability Part A (2023) - NW and ESW participants were asked which areas for investment matter the most to them. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 1st of the 14 areas presented for NW participants and 2nd of the 11 areas presented for ESW participants. Participants were also asked which areas for investment required the most investment. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 2nd of the 14 areas presented for NW participants and ranked 2nd of the 11 areas presented for ESW participants. Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Compulsory metering was discussed with ESW participants. It was explained that the ESW region is classified as a seriously water stressed and that ESW needs to reduce the amount of water used by customers to ensure a reliable water supply, reduce environmental impact, keep bills low, and be in line with Ofwat's expectations to reduce usage to 110 litres per person per day by 2050. The 2021 yearly figure showed 166 litres per person per day. Participants were told that 64% of Essex properties and 69% of Suffolk properties have a water meter. Participants were asked is they would be happy to have water metering made compulsory, and if so, whether smart meters should be rolled out. Participants provided a split response regarding smart metering, as the benefits of monitoring was understood, but some participants stated they would struggle with technology, and felt some customers may have accessibility issues. Retailer and Non-Household Research (2022) - Most NHHs recognise the benefits of smart meters, in particular billing accuracy, water efficiency (and waste reduction) and leak detection. WRMP Options Research (ESW) (2022) – Smart metering had the lowest level of support for all demand-side WRMP options. 61% of participants supported smart metering at any level ('definite' or 'possible' support). 34% offered their 'definite support'. WRMP Options Research (NW) (2022) – Smart metering had the lowest level of support compared to the other metering-related WRMP options presented (opt-in). 58% of participants supported opt-in metering at any level ('definite' or 'possible' support). 31% offered their 'definite support'. WReN Customer Engagement (2021) – Participants were asked to rank 14 WRMP options. 'Consumption Data' ranked 8th of the 14 options presented. Waterwise Public attitudes towards smart metering (2021) - This research has demonstrated an encouraging level of public receptivity towards smart water metering when people are aware of its benefits. The most common barrier to uptake is concerns about an accompanied rise in water bills. The very large majority of respondents who would be interested in getting a smart water meter if they could be guaranteed a reduction in their bills. Ofwat and CCW Non-Household Customer Insight Survey (2020) - Participants were asked overall, and taking everything into account, what is important to you as a water customer? 'Quality or accuracy of meter reading / enhanced metering services' came in last position with 4% of 991 participants choosing it.
Do our customers share our ambition/long-term goal?	**No evidence.**

Have our customers expressed willingness for their charges to increase to fund a smart meter rollout?

We have some evidence that NHHs are concerned at the perceived installation costs of smart meters. We do not have any evidence that household customers would be willing for their charges to increase to fund a smart meter rollout.

Acceptability and Affordability Testing (Qualitative) (2023) - It was consistently felt amongst respondents that metering and reducing leakage (which were tested as a package) were an important area of investment. Many respondents opted for the medium phasing option, which was described as:

	NW Medium investment in 2025-30	ESW Medium investment in 2025-30
Description	Do what is needed to stay on track for the 2050 target	Must do
Cost in 2025-30	£15.83 on bills by 2030 (this is what is in our plan)	£19.44 on bills by 2030 (this is what is in our plan)
Impact on service delivery	This includes giving people a choice about having smart meter, and providing advice and support on water efficiency (for example, NW offers free repairs for leaking toilets)/ NW has chosen this option because it does not think there is a good reason to ask customers to pay to go further.	This includes compulsory smart meters, providing advice and support on water efficiency (for example, ESW offers free repairs for leaking toilets) and reducing leakage. This also includes innovation to reduce water demand from businesses and agriculture.

Whilst this was an important area of investment, there were others that were more important. Further, several felt that the need for water efficiency was less important in the NW region than in other parts of the country, as this is not a water stressed area and thus did not opt for the higher phasing option on this basis. There was also a sense that the middle phasing option was satisfactory because it would ensure that NW / ESW was compliant with Government targets. When thinking about which phasing option they preferred, bill affordability was important to these discussions across both regions, with respondents aware that phasing would influence the final bill prices.

Retailer and Non-Household Research (2022) - Some, in particular unmetered micro organisations, worry smart metering will have a negative impact on their bills.

CCW Smart Thinking – Metering for Business Customers (2023) - Businesses are accepting of installation fees, provided benefits are well-communicated. Cost of installation is cause for consideration, although many businesses observed reduced water bills and strongly value increased bill accuracy and time-savings that outweigh their initial opposition to paying if reconciled as an 'investment for the future'.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

OPT-IN METERING

Volume of evidence	Medium (4 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Is opt-in metering a priority for customers relative to other service areas?	**Household customers are supportive of opt-in metering (household customers that request to have a water meter installed)** Pre-Acceptability Part A (2023) - NW and ESW participants were asked which areas for investment matter the most to them. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 1st of the 14 areas presented for NW participants and 2nd of the 11 areas presented for ESW participants. Participants were also asked which areas for investment required the most investment. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 2nd of the 14 areas presented for NW participants and ranked 2nd of the 11 areas presented for ESW participants. WRMP Options Research (ESW) (2022) - Opt-in metering had the highest level of support of the three metering-related WRMP options presented (compulsory and smart). Although all three ranked behind the other options presented (company and customer leak reduction and water saving devices/behaviours) 67% of participants supported opt-in metering at any level ('definite' or 'possible' support). 37% offered their 'definite support'. WRMP Options Research (NW) (2022) - Opt-in metering had the highest level of support compared to the other metering-related WRMP options presented (smart). 71% of participants supported opt-in metering at any level ('definite' or 'possible' support). 47% offered their 'definite support'. WReN Customer Engagement (2021) – Participants were asked to rank 14 WRMP options. 'Meter Optants' ranked 5th of the 14 options presented.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	Acceptability and Affordability Testing (Qualitative) (2023) - It was consistently felt amongst respondents that metering and reducing leakage (which were tested as a package) were an important area of investment. Many respondents opted for the medium phasing option, which in NW included opt-in smart metering. This was described as: **NW Medium investment in 2025-30** Description: Do what is needed to stay on track for the 2050 target Cost in 2025-30: £15.83 on bills by 2030 (this is what is in our plan) Impact on service delivery: This includes giving people a choice about having smart meter, and providing advice and support on water efficiency (for example, NW offers free repairs for leaking toilets)/ NW has chosen this option because it does not think there is a good reason to ask customers to pay to go further. Whilst this was an important area of investment, there were others that were more important. Further, several felt that the need for water efficiency was less important in the NW region than in other parts of the country, as this is not a water stressed area and thus did not opt for the higher phasing option on this basis. There was also a sense that the middle phasing option was satisfactory because it would ensure that NW was compliant with Government targets. When thinking about which phasing option they preferred, bill affordability was important, with respondents aware that phasing would influence the final bill prices.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

COMPULSORY METERING

Volume of evidence	Medium (5 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	NA

Is compulsory metering a priority for customers relative to other service areas?

The evidence on prioritisation of compulsory metering, in relation to other service areas is mixed. When metering is presented as part of an overall water efficiency package (e.g., as in our pre-acceptability (2023) research) it is considered a high priority, however when we test it in isolation (e.g., as in our WRMP company and regional research) support is lower.

Pre-Acceptability Part A (2023) - NW and ESW participants were asked which areas for investment matter the most to them. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 1st of the 14 areas presented for NW participants and 2nd of the 11 areas presented for ESW participants. Participants were also asked which areas for investment required the most investment. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 2nd of the 14 areas presented for NW participants and ranked 2nd of the 11 areas presented for ESW participants.

WRMP Options Research (ESW) (2022) – All three metering-related WRMP options ranked behind other options presented (company and customer leak reduction and water saving devices/behaviours) 58% of participants supported compulsory metering at any level ('definite' or 'possible' support). 36% offered their 'definite support'.

Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Compulsory metering was discussed with ESW participants only. It was explained that the ESW region is classified as a seriously water stressed and that ESW needs to reduce the amount of water used by customers to ensure a reliable water supply, reduce environmental impact, keep bills low, and be in line with Ofwat's expectations to reduce usage to 110 litres per person per day by 2050. The 2021 yearly figure showed 166 litres per person per day. Participants were told that 64% of Essex properties and 69% of Suffolk properties have a water meter.

Participants were asked is they would be happy to have water metering made compulsory. Participants recognised the benefits of monitoring their water usage and considered compulsory metering fair, however some felt that individuals should have freedom of choice. It was suggested educating customers on the benefits of reducing water, and communicating in a transparent, positive way, may help customers become more accepting of this change.

WRE Customer Engagement (2022) - Participants were asked which three supply and demand options they would most like to see included in WRE plan. 'Universal metering' was chosen by 33% of participants, ranking 5th out of the 10 options presented and last in terms of demand options (4 presented).

WReN Customer Engagement (2021) – Participants were asked to rank 14 WRMP options. 'Metering on Change of Occupancy' ranked 6th of the 14 options presented.

Do our customers share our ambition/long-term goal?

No evidence.

Have our customers expressed willingness for their charges to increase to fund improvements?

Acceptability and Affordability Testing (Qualitative) (2023) - It was consistently felt amongst ESW respondents that compulsory metering and reducing leakage (which were tested as a package) were an important area of investment. Many respondents opted for the medium phasing option, which was described as:

	ESW Medium investment in 2025-30
Description	Must do
Cost in 2025-30	£19.44 on bills by 2030 (this is what is in our plan)
Impact on service delivery	This includes compulsory smart meters, providing advice and support on water efficiency (for example, ESW offers free repairs for leaking toilets) and reducing leakage. This also includes innovation to reduce water demand from businesses and agriculture.

Whilst this was an important area of investment, there were others that were more important. There was also a sense that the middle phasing option was satisfactory because it would ensure that ESW was compliant with Government targets. When thinking about which phasing option they preferred, bill affordability was important to these discussions across both regions, with respondents aware that phasing would influence the final bill prices.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

APPEAL FOR RESTRAINT

Volume of evidence	No evidence	Divergence of view	NA
Quality of evidence	NA	Regional differences	NA

Are appeal for restraints a priority for customers relative to other service areas?	**No evidence.**
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

TEMPORARY USE BANS

Volume of evidence	No evidence	Divergence of view	NA
Quality of evidence	NA	Regional differences	NA

Are temporary use bans a priority for customers relative to other service areas?	**No evidence.**
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

LEAK REDUCTION (COMPANY-SIDE)

Volume of evidence	High (19 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	Medium

Is company side leakage reduction a priority for customers relative to other service areas?

Leakage reduction tends to come out as a high priority when customers are asked what is important to them.

Acceptability and Affordability Testing (Qualitative) (2023) – Six performance commitments (PCs) were discussed, and respondents asked to vote on how important it is that NW / ESW strives to be industry leading in each area on a scale of 1-5. 'Reducing leakage' achieved a mean score of 4.5 from NW and ESW participants. The third highest scores of all PCs in NW and highest in ESW (joint with 'Taste, odour and appearance of tap water').

Six performance commitments (PCs) were discussed, and respondents asked to vote on how important it is that NW / ESW strives to be industry leading in each area on a scale of 1-5. 'Taste, odour and appearance of tap water' achieved a mean score of 4.5 from ESW participants (joint first with 'Taste, odour and appearance of tap water) and 4.6 from NW participants (second highest score).

Pre-Acceptability Part A (2023) - NW and ESW participants were asked which areas for investment matter the most to them. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 1st of the 14 areas presented for NW participants and 2nd of the 11 areas presented for ESW participants. Participants were also asked which areas for investment required the most investment. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 2nd of the 14 areas presented for NW participants and ranked 2nd of the 11 areas presented for ESW participants.

Retailer and Non-Household Research (2022) - Participants were asked to look at a list of factors and to allocate 100 "investment coins" across them, to indicate their relative importance. 'Reducing leakage from the network' received the second highest share of coins.

Domestic Tracking (2022-23) - Participants are asked which of 10 areas should be our business plan priorities. 'Repair leaks (more quickly)' ranked between 3/10 to 7/10 across the period. NW scores tend to be lower compared to ESW scores.

NW WRMP Options Research (2022) - Participants were presented with five actions Northumbrian Water could take to help customers and businesses reduce the amount of water they use. The highest rated option was 'company side leak reduction', supported by 84% of participants.

ESW WRMP Options Research (2022) - Company-side leak reduction had high support at all stages of the research. Participants were presented with five actions Northumbrian Water could take to help customers and businesses reduce the amount of water they use. The highest rated option was 'company side leak reduction', supported by 86% of participants. This was lower for future customers (77%) and customers in vulnerable circumstances (80%).

Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants were asked whether they thought Essex & Suffolk Water should comply with the statutory obligation of a 50% reduction in leakage Although reducing leakage was important to participants views were divided between participants who viewed it important to stay at 50% to promote high standards and maintain consistency between companies, and participants who thought the target should be reduced due to Essex & Suffolk Water outperforming other water companies.

WReN Customer Engagement (2021) - Leakage came out very strongly within customer priorities. 78% of participants agreed 'reducing leaks from the water network' should be an area of focus for water companies. When asked to rank 14 WRMP options 'Leakage' came in 1st place.

Water Resources East Customer Engagement (club project) (2021) - Participants were asked which of 10 supply and demand options they would most like to see in WRE's WRMP. Leakage detection and reduction was the highest-ranking option, with 62% of participants including it in their top three most liked solutions. Participants were also asked to choose their top four best objectives of the best value plan. 'The most from what we have (reducing leakage, encouraging customers to use less)' was supported by 68% of participants, the second highest rated objective.

Ofwat Cost-of-living: Wave 3 (2023) - Bill payers were asked what the two most important factors would be if they could pick which water and sewerage company they used. Approximately two in ten (18%) selected 'Fix water pipe leaks in public areas (in roads, not in the home)', placing it 5th of the 7 factors presented.

Ofwat and CCW Preferences Research (2022) - As part of a pre-task exercise participants were asked what activities they thought a water company should be doing. 'fixing leaks' ranked 5th out of the 12 areas tested. One of the service areas tested within the main research was 'reducing leaks.' Overall this ranked as 'some importance/impact'.

Customer spotlight: People's views and experiences of water (2022) – Participants were asked to think about their water company and to rate ten measures on a scale from 1 to 10 according to how important they are for their water company to focus on over the next 10-20 years. All areas achieved a majority scores of 8-10. 'Fix Leaks' ranked 4th of the 10 measures tested.

Ofwat and CCW Non-Household Customer Insight Survey (2020) - Participants were asked overall, and taking everything into account, what is important to you as a water customer? 'Leakage control' came in seventh position (out of 12) with 4% of 691 participants choosing it.

WaterVoice Views of current customers on water resources (2021) – Participants asked what they would expect their water company to do if they lived in an area where water resources were limited under pressure, and there was a risk in the future of more hosepipe bans and restrictions on water use. Over half of customers expect water companies to fix leaks more quickly.

CCW and Ofwat Non-household Customer Insight Survey (2022) - Non-Household customers were asked overall, and taking everything into account, what the most important issue to them, as a water customer, was. 'Leakage control' was a very low priority, with just 4% of participants selecting this option.

Do our customers share our ambition/long-term goal?

We have some evidence that customers want us to be more ambitious in this area.

Acceptability and Affordability Testing (Qualitative) (2023) - Respondents were asked to vote to indicate how they felt about NW / ESW's level of ambition for reducing leakage. The following information was shared:

	Current service level (2021/22 performance)	Current performance compared to other companies	Proposed improved service level	Proposed performance compared to other companies
NW	104.9 litres per property per day	Mid-table	84.5 litres per property per day	Mid-table
ESW	71.8 litres per property per day	Top 25% of companies	61.6 litres per property per day	Top 25% of companies

The majority of respondents thought our ambition was 'just right' (61% NW, 62% ESW), however a high minority (39% NW, ESW 33%) felt that were not being ambitious enough.

Participants were asked to think about the goals in our Long-Term Delivery Strategy and to discuss their importance. For several NW respondents, a focus on leakage was thought to have a greater impact upon the system as a whole, for example by aiding in the achievement of other targets such as water resources and environmental impact. However, for a minority of NW respondents' leakage was less of an issue, especially with the presence of particular local infrastructure (e.g., Kielder), and perceptions of geographical variability of water-related shortages.

Defining the Future (2021) - Respondents were asked whether they agreed with fourteen goals ambitious goals under the six themes of our PR19 business plan. One of the goals (tested with NW and ESW participants) was 'Have the lowest levels of leakage in the country in their water-stressed ESW operating area' 94% of participants agreed with this goal (91% household / 100% stakeholder and business).

People Panels #3 – Aims and Measures (2022) - Participants were asked to allocate 25 stars over 15 measures, placing more on the measures they felt were most important to consider in NW/ESW's long-term plan. Reduce the wastage of water through a reduction in leakage received the fifth highest number of stars.

People Panels #4B Long term strategy metrics and ambition (2022) - Participants were asked to vote on how ambitious they want NW/ESW to be regards to the goal: 'reduce the wastage of water through a reduction in leakage. Most panelists wanted to see Northumbrian Water's target in line with the current commitment, though views amongst panelists were fairly balanced as almost half of panel members wanted to see a more ambitious target. The majority of Essex and Suffolk panelists wanted to see a more ambitious target. Panellists went onto complete a star poll exercise, where they were asked to allocate 25 stars across fifteen measures, placing more stars on measures where they wanted to see the greatest ambition. 'Reduce the 'wastage' of water through reducing leakage' ranked 3rd out of 11 measures presented.

Water Resources East Customer Engagement (club project) (2021) - Current leakage levels are seen to be too high, but customers agree that a 50% reduction is acceptable. Many respondents spontaneously suggested that 10% leakage would be a pragmatic figure; a significant reduction while appreciating that 0% leakage is not realistic. However, the timeframe (2050) is too far out: 2030 would be better.

Have our customers expressed willingness for their charges to increase to fund improvements?

We do not have strong evidence that customers are willing for their bills to increase to fund reductions in leakage.

Acceptability and Affordability Testing (Qualitative) (2023) - It was consistently felt amongst respondents that metering and reducing leakage (which were tested as a package) were an important area of investment. Many respondents opted for the medium phasing option, which was described as:

	NW Medium investment in 2025-30	ESW Medium investment in 2025-30
Description	Do what is needed to stay on track for the 2050 target	Must do
Cost in 2025-30	£15.83 on bills by 2030 (this is what is in our plan)	£19.44 on bills by 2030 (this is what is in our plan)
Impact on service delivery	This includes giving people a choice about having smart meter, and providing advice and support on water efficiency (for example, NW offers free repairs for leaking toilets)/ NW has chosen this option because it does not think there is a good reason to ask customers to pay to go further.	This includes compulsory smart meters, providing advice and support on water efficiency (for example, ESW offers free repairs for leaking toilets) and reducing leakage. This also includes innovation to reduce water demand from businesses and agriculture.

Whilst this was an important area of investment, there were others that were more important. Further, several felt that the need for water efficiency was less important in the NW region than in other parts of the country, as this is not a water stressed area and thus did not opt for the higher phasing option on this basis. There was also a sense that the middle phasing option was satisfactory because it would ensure that NW / ESW was compliant with Government targets. When thinking about which phasing option they preferred, bill affordability was important to these discussions across both regions, with respondents aware that phasing would influence the final bill prices.

Copperleaf Valuations (2022) - Participants were asked how much they would be willing to pay to reduce leakage from the water network, specifically reducing leakage from 130 to 100 megalitres per day. They were told that this would take NW from industry average to the top 25% performing companies in the industry. The majority (70%) of participants placed zero coins on this measure – indicating that they were not willing to pay anything towards improved performance.

Water Resources East Customer Engagement (club project) (2021) - Many felt that all leaks should be fixed, whatever the cost. However, most would be happy for leaks to be addressed only when it would be cost beneficial. Participants were asked that, assuming their top 4 objectives were implemented, how acceptable would they find it if water bills were increased to deliver these, and how much extra per year would be an acceptable amount to pay. There was widespread willingness to accept bill increases in order to deliver desired objectives: 76% find the prospect acceptable and most felt and increases of up to £1 per week would be acceptable.

WReN Customer Engagement (2021) - Generally, the majority of customers and citizens within this qualitative exercise, were seemingly happy to pay a little more to cover some aspects. They felt that if they paid a little more for a better service, that would be reasonable. However, please be aware this was a relatively small sample size and therefore should only be used as a guide prior to any quantitative testing of willingness to pay. There were a minority who were not willing to pay. Typically, these customers were older.

Generally, most customers and citizens suggested an increase of around 10-20 % per annum although some were prepared to pay up to £9 more per month. Caveat: this was not just for the repair of leaks this was for all the other elements of their Best Value Plan.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

LEAK REDUCTION (CUSTOMER-SIDE)

Volume of evidence	Low (2 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Is leak reduction (customer-side) metering a priority for customers relative to other service areas?	**Customer-side leak reduction has high support when discussed in isolation but falls lower down the priority list when assessed in comparison with other solutions. Participants felt they would need more support from NW/ESW to fully support this solution. This is due to the possible cost implications arising from detecting and fixing leaks, which some may not be able to afford.** NW WRMP Options Research (2022) - Customer-side leak reduction has high support when discussed in isolation but falls lower down the priority list when assessed in comparison with other solutions. Respondents appreciate the idea of using this solution alongside metering to help detect possible leaks within their households. However, homeowners feel they need more support from Northumbrian Water if they can fully support this solution. This is due to the possible cost implications arising from detecting leaks and then fixing them, which some people may not be able to afford. Participants were presented with five actions Northumbrian Water could take to help customers and businesses reduce the amount of water hey use. 74% of participants supported customer-side leak reduction at any level ('definite' or 'possible' support), placing this 4th out of the 5 options presented. 43% offered their 'definite support', support. ESW WRMP Options Research (2022) - Solutions such as water saving devices/behaviours and customer-side leak reduction had strong support in isolation but in context moved down the priority list. Respondents appreciate the idea of using this solution alongside metering to help detect possible leaks within their households. However, in line with what expressed in the focus groups, homeowners feel they need more support from Essex & Suffolk water if they can fully support this solution. This is due to the possible cost implications arising from detecting leaks and then fixing them. Some people may not be able to afford this. Participants were presented with five actions Northumbrian Water could take to help customers and businesses reduce the amount of water hey use. 76% of participants supported customer-side leak reduction at any level ('definite' or 'possible' support), placing this 3rd out of the 6 options presented. 41% offered their 'definite support', support.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

WATER SAVING DEVICES (BEHAVIOURS)

Volume of evidence	High (10 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Is water saving (devices and behaviours) a priority for customers relative to other service areas?	**Our customer research suggests that PCC is a mid-low priority relative to other measures.** Pre-Acceptability Part A (2023) - NW and ESW participants were asked which areas for investment matter the most to them. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 1st of the 14 areas presented for NW participants and 2nd of the 11 areas presented for ESW participants. Participants were also asked which areas for investment required the most investment. 'Metering, encouraging water efficiency and tackling leakage to ensure we have enough water in the future' ranked 2nd of the 14 areas presented for NW participants and ranked 2nd of the 11 areas presented for ESW participants. NW and ESW WRMP Options Research (2022) - This research included a MaxDiff exercise. Respondents were shown random sets of supply & demand side options and were asked to choose most and least preferred. In NW 'Water saving devices/ behaviours' achieved the second highest score (15%) of the eight measures tested, over the equal share of preference threshold (12.5%). In ESW 'Water saving devices/ behaviours' ranked 7th of 14 measures tested with a score of 8%, just over the 7% equal share of preference threshold. We then asked participants to look at a list of factors within Water, and again to allocate 100 "investment coins" across them, to indicate their relative importance. 'Water efficiency' received the 4th highest share of coins out of 8 areas tested. Water Resources North Customer Engagement (2021) – Participants were asked to take part in two exercises which ranked PCC against 12 other WRMP metrics in terms of importance. PCC ranked 3rd in the workshop exercise and 4th in the points allocation exercise. Participants were asked to rank 14 WRMP options. 'Water Efficiency (providing water saving products)' ranked 2nd of the 14 options presented. WRE Customer Engagement (2022) – Participants were asked which three supply and demand options they would most like to see included in WRE plan. 'Higher water efficiency using incentives and awareness campaigns' was chosen by 35% of participants, ranking 4th out of the 10 options presented and 3rd in terms of demand options (4 presented). Participants were also asked to choose their top 4 best objectives of the best value plan. 'The most from what we have (reducing leakage, encouraging customers to use less)' was supported by 68% of participants, the second highest rated objective.
Do our customers share our ambition/long-term goal?	**The majority of customers do not share our ambition in this area, compared to our other ambitions PCC receives lower levels of support.** People Panels #3 – Aims and Measures (2022) **-** Participants were asked to allocate 25 stars over 15 measures, placing more on the measures they felt were most important to consider in NW/ESW's long-term plan. 'Reduce the amount of water used by our customers to improve water resources across our regions' received the ninth highest number of stars - a mid-to-low ranking position. People Panels #4 (2022) - Participants were asked how ambitious they would like NW/ESW to be in several areas including 'Reduce the amount of water used by our customers to improve water resources across our regions'. The majority (26, 51%) wanted to see a target in line with current commitments (Customers use 110 litres per person per day by 2050). Over a third (19, 37%) wanted to see a more ambitious target (Customers use 105 litres per person per day by 2050) and 12% (6) wanted the reduced target (Customers use 118 litres per person per day by 2050). Of the 11 measures presented 'Reduce water usage in regions' ranked 8/14 in terms of numbers voting for the most ambitious target. Panellists went onto repeat the star poll exercise, they had first completed in People Panel #3. 'Reduce water usage in regions' ranked fairly low compared to other areas, 8/11. Defining the Future (2021) - Respondents were provided with an explanation of NWG's 14 'ambitious goals', including 'Have a per capita consumption (PCC) for water use of 118 litres per person per day by 2040' and asked whether they agreed with them. We used a benchmark of 70% to determine a level of overall acceptance, as this has been used previously in acceptability research. Agreement with our goal did not meet this threshold for all groups with the exception on NW households. The NW household score of 73%, although over the threshold, was the lowest of all scores for the 14 goals presented. Water Resources North Customer Engagement (2021) – In their Best Value Plan designs most customers brought PCC targets forward to make them more accountable, tangible and ultimately attainable. Targets mentioned were a reduction of PCC of 20% within 3-5 years or 25% reduction by 2050.

Have our customers expressed willingness for their charges to increase to fund improvements?

The regional WRMP club projects we participated in suggest customers are wiling for their bills to increase to fund reductions in PCC. However, our own research does not support this suggesting that customers are concerned about finances and unwilling to fund water efficiency initiatives in homes or businesses.

Acceptability and Affordability Testing (Qualitative) (2023) - It was consistently felt amongst respondents that metering and reducing leakage (which were tested as a package) were an important area of investment. Many respondents opted for the medium phasing option, which was described as:

	NW Medium investment in 2025-30	ESW Medium investment in 2025-30
Description	Do what is needed to stay on track for the 2050 target	Must do
Cost in 2025-30	£15.83 on bills by 2030 (this is what is in our plan)	£19.44 on bills by 2030 (this is what is in our plan)
Impact on service delivery	This includes giving people a choice about having smart meter, and providing advice and support on water efficiency (for example, NW offers free repairs for leaking toilets)/ NW has chosen this option because it does not think there is a good reason to ask customers to pay to go further.	This includes compulsory smart meters, providing advice and support on water efficiency (for example, ESW offers free repairs for leaking toilets) and reducing leakage. This also includes innovation to reduce water demand from businesses and agriculture.

Whilst this was an important area of investment, there were others that were more important. Further, several felt that the need for water efficiency was less important in the NW region than in other parts of the country, as this is not a water stressed area and thus did not opt for the higher phasing option on this basis. There was also a sense that the middle phasing option was satisfactory because it would ensure that NW / ESW was compliant with Government targets. When thinking about which phasing option they preferred, bill affordability was important to these discussions across both regions, with respondents aware that phasing would influence the final bill prices.

Copperleaf Valuations – NW and ESW participants were asked how much they would be willing to pay to support household customers to reduce consumption from 157.8 to 130 litres per person per day on the basis that if this was achieved NW/ESW would continue to be below industry average because all other companies would be expected to improve too. 77% of participants placed zero coins on the measure.

Water Resources North Customer Engagement (2021) - The majority of participants were willing to pay a little more for a number of WRMP options, including for an education campaign to encourage customers to reduce their water use. There was a continuum of response from £3 a month to £10 a month on top of the entire water bill, or £50 a year, or 10-15% per annum. Note: Many customers incorrectly tallied their % increases with monetary values. Equally, given the research was water resource focused, there may have been a propensity to over value, therefore further testing will be required in line with wider business plan objectives later in the process.

Water Resources East Customer Engagement (club project) (2021) - There was widespread willingness to accept bill to deliver desired objectives: 76% find the prospect acceptable (12% scoring them ‘very acceptable’). In a free text question, most think increases of up to £1 per week would be acceptable: £1 - £25 (28%) or £26 - £54 (29%) pa. Older customers were more willing to pay to deliver objectives. Economically vulnerable customers were the least willing to pay: 35% consider bill increases unacceptable vs 14% of economically stable customers. Note: This level of acceptability reflects a highly informed and engaged sample (and not reflective of uninformed response).

DRAINAGE AND WASTEWATER MANAGEMENT PLAN

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

DWMP – ENGINEERING AND NATURE-BASED SOLUTIONS

Volume of evidence	Low (2 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Are engineering and nature-based solutions to the DWMP a priority for customers relative to other service areas?	**No evidence.**
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**Despite higher costs research participants demonstrate a preference for nature-based approaches to drainage and wastewater management to ensure future generations will not have the burden of solving a bigger problem.** The following options were put to customers in our DWMP research (table below) Draft DWMP Options Research (2022) - Despite having concerns about the increased costs associated with nature-based solutions (as opposed to lower-cost, engineering based solutions) some participants felt they would prefer a nature-based approach to ensure future generations would not have the burden of solving a bigger problem. These participants essentially wanted to take a more altruistic approach. Options 3 and 4 (nature-based solutions) were preferred by participants. Option 4 received the highest share of preference by stakeholder and customers. Option 3 was the preferred choice of the employees who took part. Draft DWMP Consultation Responses (2022) - Across all groups Option 1 was the least preferred option (joint with Option 2 for employees). Option 4 received the highest share of preference for stakeholder and customers, but not by huge margins. Option 3 was the preferred choice of the employees who took part. In comments left to explain their choice, customers and stakeholders expressed concerns around affordability and a view that customers should not bear the full cost, with suggestions that some of the burden should be placed on stakeholders.

	Storm Overflow Reduction Plan met in the cheapest possible way – concrete tanks	Storm Overflow Reduction Plan met using natural solutions	Working with others to reduce the risk of flooding from all sources	Reduced risk of internal flooding for at risk properties	Delivered by	Total increase to average bills by 2030	Total increase to average bills by 2045
Option 1	✓			0%	2045	£9	£49
Option 2	✓		✓	27%	2045	£12	£64
Option 3		✓	✓	75%	2045	£18	£123
Option 4		✓	✓	90%	2040	£34	£138

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

ENVIRONMENT

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

ENVIRONMENTAL IMPROVEMENTS AND INVESTMENTS

Volume of evidence	Medium (5 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Are environmental improvements and investments a priority for customers relative to other service areas?	**We have evidence from two external sources that 'environmental improvements' ranks lower in terms of priority than other service areas.** Ofwat Cost-of-living: Wave 3 (2023) - Bill payers were asked what the two most important factors would be if they could pick which water and sewerage company they used. Approximately one in ten (13%) selected 'Act in the interests of the environment', placing it 6th of the 7 factors presented. Ofwat and CCW Preferences Research (2022) - As part of a pre-task exercise participants were asked what activities they thought a water company should be doing. 'General environment' ranked 10th out of the 12 areas tested.
Do our customers share our ambition/long-term goal?	**Participants in our Affordability and Acceptability Research felt the environmental goals in our long-term delivery strategy were the most important.** Acceptability and Affordability Testing (Qualitative) (2023) – Thinking about the goals outlined within the Long-Term Delivery Strategy, across both regions focusing on the environment was thought to be of most importance.
Have our customers expressed willingness for their charges to increase to fund improvements?	**Our pre-acceptability Part B research put specific costs for environmental improvements to customers, which were not acceptable. There is evidence from one external source (CCW Public Views of the Water Environment) that customers may be willing to pay, however specific costs were not presented in this research and it was conducted prior to the cost-of-living crisis.** Pre-Acceptability Part B (2023) – Nine potential investment areas were discussed with participants (9 in NW and 6 in ESW). One of these was 'environmental improvements' which was described as 'Non statutory environmental investment such as improvements to water environments 'bluespaces' the public can access.' The costs shared were an average annual increase of £2.78 in NW and 16p in ESW. Overall, views were mixed, with a slight majority of respondents across both regions preferring to not invest at all (NW respondents 42%; ESW respondents 39%). The preference to not invest at all was stronger amongst respondents in Northumbrian Water regions. Overall, this was the investment area that respondents were least likely to include in their plan. Respondents voted on a final poll as to whether they would prefer to invest now, push back investment to 2030 onwards, or to not invest at all against a number of service areas. 24% of NW and 36% of ESW preferred to 'invest now' in 'environmental improvements'. Non-statutory environmental improvements, across both regions, was prioritised the least when considering areas to include in the plan. CCW Public Views of the Water Environment (2021) - Many participants were comfortable in principle with the public paying for improvements to the water environment. They saw benefits in terms of the environment, society and future generations. They also acknowledged that it is acceptable and fair because the public would benefit and have also contributed to the problems. However, a substantial minority disagreed, arguing that polluters should pay, beneficiaries should pay, or water companies should pay from profits etc. There was some debate on the best way to pay for environmental improvements and the suggestion that a combination of approaches (e.g., tax, water bills, charitable donations) would work best – mainly because each approach had different strengths and weaknesses. Overall, there was widespread support for paying for environmental improvements through water bills. However, there were several caveats, limits and assurances that would make them feel more comfortable about this approach relating to the amount charged (ensuring affordability and keeping increases reasonable) and how the money is spent (money being ring-fenced, activity being monitored and there being evidence of a positive outcome). Generally, participants accepted paying more for environmental improvements (however, it should be noted, that whilst hypothetical bill increase amounts were deliberately not given, some participants assumed that any increases would be fairly small). They also believed that such increases need to be fair. In particular, the need for the polluter to pay was mentioned repeatedly. Views differed about whether water bill-payers should pay for improvements related to all environmental issues or only some of them. Almost all future customers (who are not yet paying bills themselves) were in favour of paying for action on all environmental issues.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

NUTRIENT NEUTRALITY

Volume of evidence	Low (2 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Is nutrient neutrality a priority for customers relative to other service areas?	**No evidence.**
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**Focus group participants were not supportive of an engineering-based approach to removing nitrogen from wastewater due to the high cost for a relatively low percentage impact. Participants indicated that they would support a less expensive, nature-based approach.** Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants were made aware of two coastal areas in the North East, Lindisfarne and Teesmouth, which are identified as unfavourable due to the levels of nitrogen in the rivers and sea surrounding these areas. They were informed that The Department for Environment, Food and Rural Affairs (Defra) has requested the introduction of engineering-based solutions to remove nitrogen from sewage during the wastewater treatment process. Engineering solutions and associated costs were presented as: **Lindisfarne** / **Teesmouth** / **Teesmouth** **Engineering costs**: £51 million / £292 million / £390 million **Removal at**: Five wastewater treatment works / Bran Sands Effluent and four other wastewater treatment works / 37 inland wastewater treatment works **NW accountability for nitrogen**: 2% / 38% / 38% Participants were also informed that an alternative option would be to employ nature-based solutions, shared between catchment partners, this would have less impact on customers' bills than engineered solutions proposed by Defra. Participants considered the removal of nitrogen to be important, but the low percentage impact and high costs of engineering solutions were concerning, prompting participants to suggest seeking alternative solutions alongside challenging Defra. Overall, there was a preference of using catchment, nature-based solutions. Pre-Acceptability Part B (2023) - Respondents voted on a final poll as to whether they would prefer to invest now, push back investment to 2030 onwards, or to not invest at all against a number of service areas. 60% of NW preferred to 'invest now' in 'removal of nutrients (nitrogen) using nature-based approaches at a cost of £1.68 on the average household bill. There was substantial support across the groups for the natural solutions to remove nutrients from wastewater (e.g. storing seagrass and oyster beds, seaweed and shellfish farming, wetland creation), rather than the engineering solution (a new sewage treatment works that is capable of nitrogen extraction from sewage). Respondents noted the economic benefits of this cheaper option and preferred the risk of a later bill increase rather than an immediate larger increase.

BESPOKE MEASURES

LINE OF SIGHT – CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

BESPOKE MEASURES

In July 2022 Ofwat published it's draft methodology for PR24 which sets out its thinking on bespoke performance commitments for PR24. Ofwat's draft methodology states that any bespoke measure proposed must be supported by compelling evidence that it is in the interests of customers and the environment, and have a reward and penalty attached.

Over 2,500 household customers took part in an online survey to tell us their views. To enable us to interpret the results fairly and transparently we felt it was appropriate to set an acceptability threshold which each measure would have to reach to be included in our PR24 plan. The latest industry research we have on setting thresholds of acceptability is CCW's 2013 PR14 research, which recommends a threshold of 70-75%.

Results were as follows:

	Keep bespoke measure and put a financial reward and penalty against it	Don't have this bespoke measure	Don't know	Prefer not to say
Proposed Bespoke Measures				
Customers' perception of trust	50%	34%	15%	2%
Response time to written complaints	52%	36%	11%	2%
Percentage of households in water poverty	46%	39%	14%	1%
Gap sites	52%	31%	16%	2%
Voids	53%	34%	13%	1%
Risk of severe restrictions in a drought	42%	35%	21%	2%
BlueSpaces (Water Environment Improvements)	66%	22%	12%	1%
Event Risk Index (ERI)	54%	31%	13%	2%
British Standards Institute Aware for Inclusive Services	51%	24%	13%	2%
Independent value for money survey	46%	41%	11%	2%
Satisfaction of customers who receive additional non-financial support	50%	27%	21%	3%
Awareness of additional non-financial support	47%	31%	19%	3%
Satisfaction of customers who receive additional financial support	58%	26%	13%	3%
Awareness of additional financial support	58%	26%	13%	3%
Risk of flooding in a severe storm	54%	24%	21%	2%

The recommendation from this customer engagement is that **no bespoke performance measures** are included in our 2025-30 business plan.

AFFORDABILITY

LINE OF SIGHT – CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

BILL PROFILES AND PHASING

Volume of evidence	High (12 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Which bill profile is preferred by customers?	**Our bill payers prefer a smooth bill profile for its predictability and to support budgeting.** People Panels - #5 Affordability and cost-of-living (2022) - There was consensus across the groups that respondents preferred for their bill profile to remain consistent, to enable certainty around upcoming costs and support them with their financial planning. Pre-Acceptability Part B (2023) - When enhanced investments to expediate service improvements were presented participants preferred to stagger some costs over years, as concerns were shared regarding the cost-of-living, and it was agreed that spreading the costs would be best Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants were reminded that, from 2025, water and wastewater bills will have to increase to fund various investments that are required. Therefore, the ways in which participants would prefer to see their bill increase was then explored. Four options for bill increases were explored. The overarching finding was that steady increases are preferred by most participants as the cost-of-living crisis and rising of other bills meant they would be able to cater for the bill increases better. WRMP Options Research (NW) (2022) - Participants were shown two different bill structures Northumbrian Water could choose from, smoothed and unsmoothed, and were asked to indicate which one they preferred and why. Smoothed bill profiles were the most popular across all segments (67%). 44% of responses in support of the smoothed line like that it enables them to budget. 11% also stated it gives them more predictability. Of the minority who preferred an unsmoothed profile (9%) 56% believed an unsmoothed bill would more closely match their water usage. WRMP Options Research (ESW) (2022) - Participants were shown two different bill structures Essex & Suffolk Water could choose from, smoothed and unsmoothed, and were asked to indicate which one they preferred and why. Smoothed bill profiles were the most popular across all segments (65%) and especially popular amongst non-households (74%). 50% of responses in support of the smoothed line like that it enables them to budget. 16% also stated it gives them more predictability. Of the minority who preferred an unsmoothed profile (11%) 42% believed this would be linked to their water usage. Ofwat Cost-of-living: Wave 3 (2023) - Bill payers were asked what the two most important factors would be if they could pick which water and sewerage company they used. Approximately one in ten (8%) selected 'Act in the interests of the environment', placing it 7th of the 7 factors presented.
How would customers like the shared cost of investments to be phased over time (intergenerational fairness)?	**Research participants do not support delaying investment and putting more of the burden on future customers. They prefer to begin paying sooner, so long as costs are fair and increase smoothly.** Affordability and Acceptability Research (Qualitative) (2023) - Generally, when discussing the enhancements and phasing, the majority of respondents opted for an increase in bills starting sooner, spreading increases across different generations of bill-payers (73% NW, 70% ESW). The lack of appetite to push investment down the line related to the importance of not to saving problems up for the future. There was an appetite for a greater level of ambition (paying more sooner) for: - Performance in leakage and pollution - Higher phasing options for storm overflows and asset health. CCW Public Views of the Water Environment (2021) - Many participants were comfortable in principle with the public paying for improvements to the water environment. They saw benefits in terms of the environment, society and future generations. They also acknowledged that it is acceptable and fair because the public would benefit and have also contributed to the problems. Draft DWMP Research (2022) - Despite having concerns about the increased costs associated with nature-based solutions (as opposed to lower-cost, engineering-based solutions) some participants felt they would prefer a nature-based approach to ensure future generations would not have the burden of solving a bigger problem. These participants essentially wanted to take a more altruistic approach. WReN Customer Engagement (2021) – Participants were asked what felt fair i.e. were they prepared to pay more now or push costs out to future generations. There was also a strong sense that customers and citizens did not want future generations to pay more whilst they kept their bills low. They wanted intergenerational fairness. A small amount of money over a long period of time was better than a larger amount over a shorter amount of time. Also, many felt that costs only increase over time so it would be more cost efficient to make improvements now than in the future. The argument behind intergenerational fairness was that future generations were having to combat the damage of climate change that this generation and previous generations had caused. There was also a desire for the water company to carry out improvements where necessary in a proper and timely way.
Have our customers expressed willingness for their charges to increase to fund improvements?	Affordability and Acceptability Research (Qualitative) (2023) - There was a concern about affordability of the proposed bill increase, therefore unlikely that customers would support a higher bill increase than presented. Draft DWMP Research (2022) - The rising cost-of-living and environmental priorities were key factors contributing to decisions, despite this participants demonstrated a preference for the more expensive, nature-based, options presented as these were felt to be better for communities and the environment. NWG Water Environment Improvements (2021) - All survey respondents were asked a series of questions regarding indicative willingness to pay for improvements to water environments. It is important to note that the questions were asked in isolation of any other improvements which may have an impact on customers' bill and therefore this should be taken into account when interpreting the following results. • 84% of NW bill payers said that they would be willing to pay an extra 90p to allow NW to make improvements to 200km of water environments, while 74% were willing to pay £1.80 more. • 80% of ESW customers stated that they would be willing to pay an extra 44p on their water bill to allow ESW to make improvements to 200km of water environments, and 72% were willing to pay 88p more for even greater ambition to improve 400km Pre-Acceptability Part B (2023) - Overall, respondents showed a willingness to invest in areas related to what they saw as NWG's core business, which would impact them or the supply of water. Across most areas of investment discussed by respondents, the total cost impact on the bill was highlighted in relation to the cost-of-living and the subsequent need to prioritise areas. Therefore, areas which were considered as a bonus or 'nice to have' were felt to be lower priority and best to push back to protect affordability as much as possible.

LINE OF SIGHT – CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

AFFORDABIITY AND THE COST-OF-LIVING CRISIS

Volume of evidence	High (11 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	NA

Is affordability a priority to customers relative to other service areas?	**Our research suggests that affordability is a priority to customers, but that they do see their water bill as a major contributor to the cost-of-living, unlike other factors such as energy price rises, rising inflation rate, war in Ukraine, Covid-19 ongoing impact, and energy suppliers going bust.** Acceptability and Affordability Testing (Qualitative) (2023) - At the beginning of the workshops, respondents were asked to take part in a series of polls, designed to provide a contextual understanding of the discussions that followed. The second poll was 'on a scale of one to five, how concerned do you feel about: The cost-of-living crisis in the UK'. Concern was higher here than it was for other areas polled, with an overall score of 4.3 for both NW and ESW respondents. Concern was highest amongst ESW future respondents (4.6). In the third poll participants were asked to rate their concern felt for their own personal finances or, for non-household respondents, the financial stability of their organisation. Concern was lower here, with an overall score of 3.3 for NW respondents and 3.4 for ESW respondents. Participants joined breakout groups to discuss which areas of the plan were most important to them. Respondents across many groups focussed on affordability, this was expressed in several ways. Bill impact was top of mind for many respondents, with both household and non-household respondents raising their concerns in this area. People Panels - #5 Affordability and cost-of-living (2022) - Panellists were asked to brainstorm factors they thought were contributing to the cost-of-living crisis and were then asked to rank all the factors in order of which they were most concerned about. The five options which remained the same across all panels were: energy price rises, rising inflation rate, war in Ukraine, Covid-19 ongoing impact, and energy suppliers going bust. People Panels #3 Aims and Measures - Participants worked through several ranking exercises, one of which was to rank seven customer measure. 'Ensure water services are supplied to all customers at a reasonable cost' ranked as the most important theme. At the end of the session, panellists took part in two star ranking exercises, where they were asked to allocate 25 stars across 15 measures, allocating the most stars to the measures they felt to be the most important. In the first exercise participants could give a maximum of three stars to each measure and choose to place more stars on the measures they considered most important. 'Ensure water services are supplied to all customers at a reasonable cost' ranked 3rd out of 15 measures tested. In the second star poll vote, panellists were asked to place their 25 'stars' across the five measures they considered to be most important; they could add up to 14 stars to each measure. 'Ensure water services are supplied to all customers at a reasonable cost' ranked 1st out of 15 measures tested. Ofwat Cost-of-living: Wave 3 (2023) - Bill payers were asked what the two most important factors would be if they could pick which water and sewerage company they used. Approximately three in ten (31%) selected 'providing good value for money to customers', placing this attribute 3rd out of the 7 factors presented. CCW Public Views of the Water Environment (2021) - Participants were asked to rank seven priorities that water companies have to balance. 'Providing schemes to lower water bills to help people on low incomes' and 'keeping bills as low as possible' ranked in 5th and 6th places respectively. When explaining this relatively low ranking some participants felt that this was something for the Government to consider rather than water companies. A number of participants, while cognisant that most people would prefer that water bills remain low, wanted to emphasise that this cannot be at the expense of delivering the core service and / or investing for the future and managing environmental impact.
Do customers share our ambitions relating to value for money and eliminating water poverty?	**Research participants agree with our ambitious goal to eradicate water poverty.** Defining the Future - There was a high level of overall agreement with the ambitious goal 'Eradicate water poverty in their operating areas by 2030' with 80% of NW and 79% of ESW respondents voting to support it. Pre-Acceptability Part B (2023) - When enhanced investments to expediate service improvements were presented participants preferred to stagger some costs over years, as concerns were shared regarding the cost-of-living, and it was agreed that spreading the costs would be best People Panels #4B (2022) - Participants were asked how ambitious they would like NW/ESW to be in several areas including 'Eradicate water poverty for supply at more reasonable cost. The majority (29, 57%) wanted to see a more ambitious target (achieve 0 instances of water poverty by 2028, then consistent zero water poverty to 2050, whilst also reducing number who are close to water poverty). Over four in ten (22, 43%) wanted to see a target in line with current commitments (achieve 0 instances of water poverty by 2030, then consistent zero water poverty to 2050, whilst also reducing number who are close to water poverty). Panellists went onto repeat the star poll exercise, they had first completed in People Panel #3. 'Eradicate water poverty for supply at more reasonable cost' ranked highly compared to other areas, 2/11.
Have our customers expressed willingness for their charges to increase to improve affordability for all?	**Our most recent social tariffs research found customer support for an increase to the social tariffs cross-subsidy.** Acceptability and Affordability Testing (Qualitative) (2023) – As part of the first deliberative workshops (of 2) household participants were asked how easy or difficult they found it to pay their current water (and wastewater) bill. NW respondents were more likely to find it easy to pay their bill than ESW respondents, with 44% in the NW region finding it very easy or fairly easy to pay their bill, compared with 28% in the ESW region. Vulnerable customers who took part in face-to-face interviews were asked as part of their pre-task how easy or difficult it is to afford to pay their water (and wastewater bill). Responses were mixed across both regions. Half of the respondents from the NW region found it easy to pay their bill, with none from the region finding it very difficult, compared with two from the ESW region. Non-household customers were also asked how easy or difficult it is for their company / organisation to pay their current water (and wastewater) bill. ESW respondents tended to find their bills easier to pay, with 63% stating it was either very or fairly easy to pay their bill, compared with 31% of NW respondents. NW respondents were more likely to find their bill neither easy nor difficult to afford. Although respondents were concerned about increases in their bills and the affordability of increases, the relatively low cost of the water bill compared with other utilities was noted. The research identified a tension between wider societal and environmental needs (a citizen's viewpoint) and an ability or willingness to pay increased bills (a customer's viewpoint).

	Discussions concerning the affordability of both the 'must do' and proposed business plans were held in the context of an acknowledgement by respondents that water and wastewater bills are lower than other utilities. However, there were concerns about a general increase in bills. Despite this concern, there was a general sense that investment was required and thus bill increases are inevitable. They also articulated a feeling of getting value for money, noting that the scale of bill increase was in proportion to the scale of work needing to be undertaken. There was a sense that, as both plans involved large increases on the current bill, there must be accountability and transparency from NW and ESW in terms of progress against targets. Finally, within all sessions there was a consistent sense of frustration that bill payers were being asked to fund investments through bill increases. Pre-Acceptability Part A (2023) - Three plans were shared with participants. A 'must-do' (statutory plan) and two preferred plan which included enhancements. Across both regions, it was noted that the bill increase within the must-do plan was high and the cost difference between it and the preferred plans was small. Generally, the third (preferred) plan was the most acceptable due to having the best value for money. Participants felt that it would be more acceptable if they were told exactly where the increases would go, as well as how much shareholders would invest, and how much profit they would receive, to ensure everyone was contributing. Draft DWMP Research (2022) - The rising cost-of-living and environmental priorities were key factors contributing to decisions, despite this participants demonstrated a preference for the more expensive, nature-based, options presented as these were felt to be better for communities and the environment. Social Tariffs Research (2023) - The majority of participants were willing to increase their contribution towards the social tariff - 62% supported an 86p per month increase in Northumbrian Water. 61% supported a 58p per month increase in Essex & Suffolk Water.

ENHANCEMENTS

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

LEAD

Volume of evidence	Low (3 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Is lead reduction a priority for customers relative to other service areas?	**The removal of lead pipes is an important issue for customers, due to the potential health risks.** Pre-Acceptability Part A (2023) - NW and ESW participants were asked which areas for investment matter the most to them. 'Investment to reduce lead pipes in the network because of the health risk' ranked 2nd of the 14 areas presented for NW participants and 1st of the 11 areas presented for ESW participants. The removal of lead pipes was considered the most important area when presented as a mean overall for participants of Essex & Suffolk Water (25 of 159 votes, 16%), and the second most important area when presented as a mean overall for Northumbrian Water participants (21 of 168 votes, 13%). Participants were also asked which areas for investment required the most investment. 'Investment to reduce lead pipes in the network because of the health risk' ranked 1st of the 14 areas presented for NW participants and 1st of the 11 areas presented for ESW participants. Whilst surprised that lead pipes haven't been removed already, some participants across the regions felt that lead pipe removal should be treated as a priority due to the dangers associated with it. Pre-Acceptability Part B (2023) - Lead pipes were seen as an important issue across both regions due to potential health risks, and the majority included it in their ideal plan. There were some minority views that replacement of lead pipes should be the responsibility of the homeowner rather than NWG. Ofwat and CCW Preferences Research (2022) - One of the service areas tested within the main research was 'The presence of lead in pipes.' Overall this ranked as 'some importance/impact'. The potential health consequences of lead pipes were concerning, especially because they affected children and pregnant women. But largely, the replacement of lead pipes within the network was wholly invisible to people, meaning people would not notice any difference or behave any differently on a day-to-day basis on account of water company action. So, whilst upgrading pipes is within a water company's mandate, because it does not impact supply, it is, in reality, not a top priority.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**Our pre-acceptability Part B research found that the majority of participants preferred to 'invest now' in lead pipe replacement.** Pre-Acceptability Part B (2023) - Nine potential investment areas were discussed with participants (9 in NW and 6 in ESW). One of these was 'Lead pipes'. The costs shared were an average annual increase of 78p in NW and £1.22 in ESW. Respondents voted on a final poll as to whether they would prefer to invest now, push back investment to 2030 onwards, or to not invest at all against a number of service areas. 64% of NW and 77% of ESW participants preferred to 'invest now' in lead pipe replacement.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

WATER QUALITY INVESTMENTS

Volume of evidence	High (15 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Are water quality investments a priority for customers relative to other service areas?	**Drinking water quality is consistently rated amongst our customers' highest priorities.** Pre-Acceptability Part A (2023) - Participants were asked which areas for investment matter the most to them and required the most investment. 'Investment to make sure that Northumbrian Water can supply the highest quality of water to their customer' had mid-level rankings for both questions in ESW and a higher ranking (3/14) for mattering the most and a mid-level ranking for investment for NW participants. Retailer and Non-Household Research (2022) - We asked NHH participants to allocate 100 "investment coins" across four high-level areas, to indicate their relative importance. The description of Water' received the highest allocation of coins. We then asked NW participants to look at different measures, within the theme of 'Water', and to allocate 100 "investment coins" across them, to indicate their relative importance. 'Improving the taste, smell and appearance of drinking water' received the highest share of coins of the eight measures tested. Ofwat Cost-of-living: Wave 3 (2023) - Bill payers were asked what the two most important factors would be if they could pick which water and sewerage company they used. Approximately six in ten (58%) selected good quality drinking water', placing this attribute 1st out of the 7 factors presented. Domestic tracking (2022-23) - In all four rounds of 2022 research and Q1 2023 'Maintain high standards on clean, clear and good tasting water' achieved the highest average score of all areas tested. Brand Values (2019) - Participants were read nine broad business plan themes and asked which should be priority and which were less meaningful to focus on. 'Customers always have access to clean water' was the highest rated priority area. Brand Values (2020-22) - Customers were asked to rank four areas in terms of the priority that they would place on each one. In all three rounds 'top quality water' had the highest percentages of participants rating it as their top priority. Ofwat and CCW Preferences Research (2022) - As part of a pre-task exercise participants were asked what activities they thought a water company should be doing. 'Appearance, taste' ranked 1st out of the 12 areas tested. In the main research was 'Taste, smell, appearance' ranked as 'high importance/impact'. CCW and Ofwat Customer spotlight: People's views and experiences of water (2022) - Participants were asked to think about their water company and to rate the ten measures on a scale from 1 to 10 according to how important they are for their water company to focus on over the next 10-20 years. All areas achieved a majority scores of 8-10. 'Provide clean, safe drinking water' ranked 1st of the 10 measures tested. CCW Public Views of the Water Environment (2021) – Participants were asked to prioritise a list of six responsibilities that water companies have to balance (alongside the environmental priorities that had been discussed). 'Providing clean and reliable drinking water to peoples' taps' ranked in 1st place.
Do our customers share our ambition/long-term goal?	**When it comes to ambition customers agree that providing clean, clear drinking water that tastes good is important, but we don't have strong evidence that further improvement is supported.** Defining the Future (2021) - Respondents were provided with an explanation of NWG's 'ambitious goals' and asked whether or not they agreed with them. Our goal 'Promote confidence in their drinking water so that nine out of ten of their customers choose tap water over bottled water' had high levels of agreement across all customer types in both operating areas. Highest levels of agreement were shown for ESW customers overall (91%) with the remaining customer groups all showing levels of agreement above 80%. People Panels #3 – Aims and Measures (2022) - Participants were asked to allocate 25 stars over 15 measures, placing more on the measures they felt were most important to consider in NW/ESW's long-term plan. Promote confidence in our drinking water by delivering high quality water received the second highest number of stars. CCW Water Voice Window 4 (2020) - Participants were asked to what extent they agreed or disagreed with the statement *'Water companies should do more to improve the taste of the tap water their customers receive.'* 49% 'strongly agreed' or 'agreed', 38% neither agreed nor disagreed' and 9% disagreed.
Have our customers expressed willingness for their charges to increase to fund improvements?	**We do not have any strong evidence that customers are willing for their bill to increase to support an improvement to drinking water quality.** Copperleaf Valuations - Participants were asked how much they would be willing to pay to improve water quality and in turn to reduce the number of customer contacts from 4,300 to 3,800. They were told that this would put NW/ESW performance in the top 25% of the industry. The majority (75%) of participants *placed zero coins on this measure – indicating that they were not willing to pay anything towards improved performance.* Pre-Acceptability Part A - All participants in this research were generally concerned about finances, and bill increases. Pre-Acceptability Part B (2023) - Nine potential investment areas were discussed with participants (9 in NW and 6 in ESW). One of these was 'water quality - to address risks to drinking water quality'. The costs shared were an average annual increase of £1.88 in NW and £2.92 in ESW. Across both regions, most respondents stated a preference to invest now in this area (76% NW respondents; 70% ESW respondents). CCW Water Voice Window 5 (2020) - A hypothetical scenario was put to participants in which water companies could improve the quality of tap water, if all customers were charged a little more on their bill. Reactions were mixed in response to the hypothetical idea of increasing customer bills by a small amount to fund improvements to customers' drinking water quality. Participants felt this may be acceptable only if demonstrable improvements were achieved, and bill reductions offered to customers if not.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

THE NORTHUMBRIA INTEGRATED DRAINAGE PARTNERSHIP (NIDP)

Volume of evidence	Low (1 source)	Divergence of view	Insufficient evidence
Quality of evidence	High	Regional differences	Insufficient evidence

Is the NIDP a priority for customers relative to other service areas?	**No evidence.**
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**As part of our qualitative affordability and acceptability research participants discussed investment in regional flooding participants seemed to support our plan of working with the NIDP to reduce risk of all types of flooding across the region. This will be tested further as part of the main, quantitative affordability and acceptability research.** Affordability and Acceptability Research (qualitative) (2023) – Participants discussed investment in regional flooding, which was described as 'working with North East Local Authorities, and the Environment Agency to reduce risk of all types of flooding across the region'. We explained the benefits of partnership working and asked if they wanted us to do this for an additional annual average cost of £2.28. Respondents felt that this investment area was of high importance. For many, they were strongly in favour of the investment's benefits of the partnership work within the NW Integrated Drainage Partnership. They also noted both the low bill impact associated with this investment and the relatively high impact of not addressing flooding.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

BLUESPACES

Volume of evidence	Medium (4 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Medium

Are BlueSpaces a priority for customers relative to other service areas?	**Our people panel members considered public value to be important.** People Panels #8 Asset health, public value, statutory obligations and bill profiles (2022) - Panellists generally considered public value to be important.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**The evidence we have suggests that customers are reluctant to fund improvements to BlueSpaces ahead of other core, service areas. Customers may support a small increase in their bill due to the value added for health, wellbeing, and environmental reasons. However this should be communicated in a transparent manner, with explanations of exactly what investments will be made.** Pre-Acceptability Part B (2023) – Nine potential investment areas were discussed with participants (9 in NW and 6 in ESW). One of these was 'environmental improvements' which was described as 'Non statutory environmental investment such as improvements to water environments 'bluespaces' the public can access.' The costs shared were an average annual increase of £2.78 in NW and 16p in ESW. Overall, views were mixed, with a slight majority of respondents across both regions preferring to not invest at all (NW respondents 42%; ESW respondents 39%). The preference to not invest at all was stronger amongst respondents in Northumbrian Water regions. Overall, this was the investment area that respondents were least likely to include in their plan. Respondents voted on a final poll as to whether they would prefer to invest now, push back investment to 2030 onwards, or to not invest at all against a number of service areas. 24% of NW and 36% of ESW preferred to 'invest now' in 'environmental improvements'. Non-statutory environmental improvements, across both regions, was prioritised the least when considering areas to include in the plan. Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants discussed whether they would support Northumbrian Water / Essex & Suffolk Water increasing customers' bills to invest in public value. The overarching finding was that public value was important to participants and would be worth a small increase in their bill due to the value added for health, wellbeing, and environmental reasons. However, the increase in bills should be communicated in a transparent manner, with explanations of exactly what investments will be made. People Panels #8 Asset health, public value, statutory obligations and bill profiles (2022) - Whilst environmental and societal benefits were recognised, some panellists felt that investments could be prioritised elsewhere, particularly due to the current cost-of-living crisis. Potential downsides of public value investments were the responsibility of stewardship of such public places, as well as safety and liability issues, such as gaining access to reservoirs. In reference to the cost-of-living crisis, panellists felt they would need more information to do a cost-benefit analysis at this moment in time.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

SECURITY

Volume of evidence	Low (1 source)	Divergence of view	Insufficient evidence
Quality of evidence	High	Regional differences	Insufficient evidence

Is security a priority for customers relative to other service areas?	**Customer prioritisation levels for 'security' were tested as part of one project, where we found this isn't a priority to customers, relative to other service areas.** Pre-Acceptability Part A (2023) - Participants were presented with 'must do' and 'optional' areas for investment. The 'must do' areas for investment are required in order to meet statutory obligations or new regulations. The 'optional' enhancements were areas which the company considered to be important but were not required to do by statutory law. 'Introducing new security measures at critical sites to ensure services aren't interrupted' were presented as a 'must do' area of the plan in NW and ESW. NW and ESW participants were asked which areas for investment matter the most to them. 'Introducing new security measures at critical sites to ensure services aren't interrupted' ranked last of the 14 areas presented for NW participants and second last of the 11 areas presented for ESW participants. Participants were also asked which areas for investment required the most investment 'Introducing new security measures at critical sites to ensure services aren't interrupted' ranked last of the areas in NW and ESW.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

RAW WATER DETERIORATION

Volume of evidence	No evidence	Divergence of view	NA
Quality of evidence	NA	Regional differences	NA

Is preventing raw water deterioration a priority for customers relative to other service areas?	**No evidence.**
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

GROWTH AT WASTEWATER TREATMENT WORKS

Volume of evidence	Low (1 source)	Divergence of view	Insufficient evidence
Quality of evidence	High	Regional differences	Insufficient evidence

Is growth at wastewater treatment works a priority for customers relative to other service areas?	**Customer prioritisation levels for 'Growing wastewater treatment works to respond to population growth' were tested as part of one project, where we found this isn't a high priority to customers, relative to other service areas.** Pre-Acceptability Part A (2023) - Participants were presented with 'must do' and 'optional' areas for investment. The 'must do' areas for investment are required in order to meet statutory obligations or new regulations. The 'optional' enhancements were areas which the company considered to be important but were not required to do by law. 'Growing wastewater treatment works to respond to population growth' was presented as a 'must do' area of the NW plan. NW participants were asked which areas for investment matter the most to them. 'Growing wastewater treatment works to respond to population growth' ranked 7th of the 14 areas presented. Participants were also asked which areas for investment required the most investment 'Growing wastewater treatment works to respond to population growth' ranked 10th of the 14 areas presented.
Do our customers share our ambition/long-term goal?	**No evidence.**
Have our customers expressed willingness for their charges to increase to fund improvements?	**No evidence.**

RESILIENCE, ASSET HEALTH AND CLIMATE ADAPTATION

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

RESILIENCE

Volume of evidence	Medium (6 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Low

Is increased resilience a priority for customers relative to other service areas?	**When ranked against other service areas attributes linked to 'resilience' tend to come out as a high - medium level priority.** People Panels #3 Aims and Measures - Panellists were also asked to rank our seven Themes from most to least important. 'Ensure reliable and resilient services' ranked as the second most important themed. 'Consider the sustainability and resilience of the business', which is also relevant to mains repair, ranked lower - 5th out of the 7 Themes tested. WReN Customer Engagement (2021) – Participants were asked to rank 14 WRMP options. 'Public Water Supply (PWS) Drought Resilience' ranked 2nd of the 14 options presented. 'Non-Drought Resilience' ranked 8th. Fewer non-household customers (compared to household) placed importance and focus on PWS Drought Resilience at this stage Brand values (2020-2022) - Participants were asked to rank four priority areas. Every year the four areas have maintained the same order with 'Top quality water' being voted as the area that matters and prepared for the future in last place. CCW and Ofwat Customer spotlight: People's views and experiences of water (2022) - Participants were asked to think about their water company and to rate the ten measures on a scale from 1 to 10 according to how important they are for their water company to focus on over the next 10-20 years. All areas achieved a majority scores of 8-10. 'Make sure there are no water shortages' and 'Ensuring services can meet the needs of future generations' ranked 4th and 5th of the 10 measures tested respectively. Ofwat and CCW Preferences Research (2022) - One of the service areas tested within the main research was 'Resilience' which was described as 'Making sure that water and sewerage services keep working through floods, drought and power failures, and planning for what needs to be done to keep services reliable into the future.' Overall, this ranked as 'some importance/impact'. In general, people are rarely affected by resilience issues, whilst problems are very inconvenient, they are perceived to be infrequent. Resilience in itself is not easily comprehended. Participants did demonstrate awareness that 'things are going wrong' and felt that water companies likely maintain and upgrade the network continually. When participants begin to imagine the impact of water/ sewage outages on critical (emergency) services e.g. hospitals/ care homes they become more engaged, feeling that a lack of planning or network incidents could also have significant health consequences and could impact more vulnerable customers.
Do our customers share our ambition/long-term goal?	**Our 2021 Defining the Future research found high levels of agreement with all our ambitions, most of which have some link to resilience.** Defining the Future (2021) - Household and non-household customers and stakeholders (41-71) were asked to rate their agreement with our 14 ambitious goals, many of which link to providing a resilient service. We achieved high-levels of agreement for all our ambitions (73%+ in agreement).
Have our customers expressed willingness for their charges to increase to fund improvements?	**The majority of participants in our qualitative affordability and acceptability research suggested they would be willing for their charges to increase so that NW/ESW could invest in resilience against unexpected events.** Affordability and Acceptability Research (qualitative) (2023) - NW and ESW Participants discussed investment in asset health, which was described as 'Replacing and refurbishing equipment like pipes and treatment works so it continues to provide a reliable service to customers.' We explained the benefits of different phasing options, one of which was doing more to tackle risks to water quality, and asked which was preferred. A notable number of respondents were satisfied that the medium phasing option (shown below) would enable NW/ESW to meet statutory obligations. It was felt that anything above this was not necessary and would put a further burden on customers by increasing bills further.

	NW Medium investment in 2025-30	ESW Medium investment in 2025-30
Description	Do what is needed in order to maintain service levels until 2030	Do what is needed in order to maintain service levels until 2030
Cost in 2025-30	£6.24 on bills by 2030 (in must do and proposed plans)	£5.48 on bills by 2030 (in must do and proposed plans)
Impact on service delivery	Fewer pollution incidents and supply interruptions – with fewer failures and more resilience to unexpected events. NW can afford to tackle more risks to water quality.	Fewer supply interruptions – with fewer failures and more resilience to unexpected events. ESW can afford to tackle more risks to water quality.

CUSTOMER RESEARCH EVIDENCE 2019-23 FOR:

ASSET HEALTH

Volume of evidence	Medium (9 sources)	Divergence of view	Low
Quality of evidence	High	Regional differences	Medium

Are improvements to asset health a priority for customers relative to other service areas?	**When research participants rank the Themes, Areas and Outcomes which asset health falls into we tend to see high priority scores. However, when participants participate in ranking exercises at measure or statement level (e.g. 'Maintaining and replacing equipment to make sure it is in good working order and to avoid service failures' and 'Better reliability by replacing infrastructure and doing more maintenance') we tend to see mid- to lower- priority levels.** Pre-Acceptability Part A (2023) - Participants were asked which areas for investment matter the most to them. 'Maintaining and replacing equipment to make sure it is in good working order and to avoid service failures (asset health)' ranked 5th/14 areas in NW and 3rd/11 areas in ESW. Participants were then asked which areas for investment required the most investment. 'Maintaining and replacing equipment to make sure it is in good working order and to avoid service failures (asset health)' ranked 7th/14 areas in NW and 5th/11 areas in ESW. Pre-Acceptability Part B (2023) - Investments to replace concrete tanks at service reservoirs, water treatment works and wastewater treatment works were viewed as a high priority for respondents across all regions as they relate to the main function of the company - to provide a safe water supply. Participants were asked to design their ideal plan for 2025-30 (i.e., the improvements they most wanted to invest in now) and 'Improvements to asset health' were included in the majority of plans. Retailer and Non-Household Research (2022) - Participants were asked to allocate 100 "investment coins" across three high-level areas (water, wastewater and asset health), to indicate their relative importance. The description of 'asset health' included 'reducing the number of water mains that burst'. Asset health received the lowest number of coins in ESW, and the second lowest number of coins in NW. People Panels #3 Aims and Measures - Panellists were asked to rank our five business Areas from most to least important. 'Customer', under which reliability and resilience falls, was the highest-ranking area. Panellists were also asked to rank our seven Themes from most to least important. 'Ensure reliable and resilient services' ranked as the second most important themed. 'Consider the sustainability and resilience of the business', which is also relevant to asset health, ranked lower - 5th out of the 7 Themes tested. Domestic tracking research - Since Q1 2022 we have asked participants in our quarterly household tracking research which of 10 areas should be our business plan priorities. In four out of five quarters (Q1 2022 – Q1 2023) ''Better reliability by replacing infrastructure and doing more maintenance' ranked 8th out of 10 priority areas tested.
Do our customers share our ambition/long-term goal?	**Our 2021 Defining the Future research found high levels of agreement with all our ambitions, most of which have some link to asset health.** Defining the Future (2021) - Household and non-household customers and stakeholders (41-71) were asked to rate their agreement with our ambitious goals. Most of which have some link to asset health. We achieved high-levels of agreement for all our ambitions (73%+ in agreement) with a lower score for PCC (63%).

Have our customers expressed willingness for their charges to increase to fund improvements?

When we have introduced the concept of a bill increase to reduce the risk of future service failure participants are supportive to a point, but do express concerns about the size of the increase given the current cost-of-living crisis. We have some evidence which suggests ESW customers may be more open to an increase for improved asset health than NW customers.

Affordability and Acceptability Research (qualitative) (2023) - NW and ESW Participants discussed investment in asset health, which was described as 'Replacing and refurbishing equipment like pipes and treatment works so it continues to provide a reliable service to customers.' We explained the benefits of different phasing options and asked which was preferred. A notable number of respondents were satisfied that the medium phasing option (shown below) would enable NW/ESW to meet statutory obligations. It was felt that anything above this was not necessary and would put a further burden on customers by increasing bills further.

	NW Medium investment in 2025-30	ESW Medium investment in 2025-30
Description	Do what is needed in order to maintain service levels until 2030	Do what is needed in order to maintain service levels until 2030
Cost in 2025-30	£6.24 on bills by 2030 (in must do and proposed plans)	£5.48 on bills by 2030 (in must do and proposed plans)
Impact on service delivery	Fewer pollution incidents and supply interruptions – with fewer failures and more resilience to unexpected events. NW can afford to tackle more risks to water quality.	Fewer supply interruptions – with fewer failures and more resilience to unexpected events. ESW can afford to tackle more risks to water quality.

Copperleaf Valuations - The majority of participants placed zero coins on measures relating to asset health.

Pre-Acceptability Part A (2023) - All participants in this research were generally concerned about finances, and bill increases.

Pre-Acceptability Part B (2023) - Nine potential investment areas were discussed with participants (9 in NW and 6 in ESW). One of these was asset health. The costs shared were an average annual increase of £1.88 in NW and £2.92 in ESW.

Asset health, across both regions, was considered to be an important area that should be invested in now. Transparency as to how costs would be minimised for customers was emphasised and, due to the cost and cost-of living crisis, a minority felt this could be pushed back to reduce customer bill impacts. Whilst investments to replace concrete tanks at service reservoirs, water treatment works and wastewater treatment works were a high priority for respondents roughly half had concerns about the increase in costs.

Respondents voted on a final poll as to whether they would prefer to invest now, push back investment to 2030 onwards, or to not invest at all against a number of service areas, three of which were presented as asset health investments:

	NW - % likely to invest now	ESW - % likely to invest now
Service reservoirs	70% (average cost of 56p)	91% (average cost of 88p)
Water treatment works	67% (average cost of 27p)	93% (average cost of 44p)
Wastewater treatment works	52% (average cost of £2.66)	-

Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - Participants preferred a risk driven approach to managing asset health. This approach was described to participants as an increase in costs from 2025, with the money used to maintain and repair assets, therefore reducing risk of service failure in future. The majority of participants were willing to accept a cost increase now in the hope that this would prevent costs and problems escalating in future years. Participants expressed that increases should not be too high, referencing the cost-of-living crisis.

People Panel #8 Asset health, public value, statutory obligations and bill profiles – Two approaches to managing asset health, cost-driven and risk-driven, were shared with panelists before we asked which they would prefer us to take. The risk driven approach was described as an increase on bills to stablise the risk of service failure, dealing with the problem now to protect future generations. The cost-driven approach was described as keeping bills lower from 2025-30, which would increase the risk of service failure, essentially 'kicking the problem down the road.' A risk driven approach was preferred by 67% of respondents. Both the NWG employee and Young people panels unanimously preferred the 'risk driven' option 2. Most Essex panelists (7 of 10) and most Suffolk panelists (8 of 11) also preferred the 'risk driven' option 2. The majority (9 of 13) of the Northumbrian group preferred the 'cost driven' option 1, showing regional differences.

CLIMATE ADAPTATION

Volume of evidence	High (10 sources)	Divergence of view	Medium
Quality of evidence	High	Regional differences	Medium

Is climate adaptation a priority for customers relative to other service areas?	**Prioritisation of adaptation to climate change relative to other service areas is mixed. Our research suggests that ESW and younger customers are most likely to express concern and prioritise this area.** Acceptability and Affordability Testing (Qualitative) (2023) - At the beginning of the workshops, respondents were asked to take part in a series of polls, designed to provide a contextual understanding of the discussions that followed. The first question was 'on a scale of one to five, how concerned do you feel about the impact of climate change in the UK'. Overall, this received a mean score of 3.8 for NW and 4.0 for ESW. Concern was lowest amongst NW non-household respondents (3.5) and highest amongst ESW household and non-household respondents (4.1). Pre-Acceptability Part A (2023) - Participants ranked investment areas by which 'mattered most to them'. 'Investing in the network to ensure it is resilient to climate change' ranked 11th out of 14 investment areas tested in NW and 7th out of 11 investment areas tested in ESW. Participants then voted on which areas they considered would require the most investment. 'Investing in the network to ensure it is resilient to climate change' ranked 8th/14 in NW and 3th/11 in ESW. For participants in the Essex & Suffolk Water region, the optional enhancement to invest in the network to 'ensure it is resilient to climate change' was thought to be an area which would require the most investment, this was less of a concern and thought to require less investment, by Northumbrian Water participants, with the exception of young NW people who were more supportive. People Panels #3 Aims and Measures - Participants work through several ranking exercises, including our Themes and Areas. 'Customer', under which reliability and resilience falls, was the highest-ranking Area. 'Ensure reliable and resilient services' ranked as the second most important theme, behind caring for the long-term essential needs of the environment. Domestic tracking (Quarters 1-4 2022) - ''Reduce emissions and adapt to climate change" achieved an average score of 69% ranking 6th out of 10 priority areas tested. In all 2022 rounds 'Reduce emissions and adapt to climate change' achieves a higher percentage score from ESW participants compared to NW participants, with importance increasing quarter-on-quarter in ESW. Brand values (2020-2022) - Participants were asked to rank four priority areas. Every year the four areas have maintained the same order with 'Top quality water' being voted as the area that matters and prepared for the future in last place. CCW and Ofwat Customer spotlight: People's views and experiences of water (2022) - Participants were asked to think about their water company and to rate the ten measures on a scale from 1 to 10 according to how important they are for their water company to focus on over the next 10-20 years. All areas achieved a majority scores of 8-10. 'Make sure there are no water shortages' and 'Ensuring services can meet the needs of future generations' ranked 4th and 5th of the 10 measures tested respectively.
Do our customers share our ambition/long-term goal?	**The majority of participants in our WRMP research wanted us to protect or improve the environment from the future effects of climate change.** People Panels #1 Introduction - Panelists discussed opportunities for NWG in the next 5, 20 and 50 years. Discussions centred around the urgency for addressing climate change. WRMP Options Research - Participants were asked if they supported our plan to look into how much water is needed in the environment in the long-term so that we could plan to protect or improve the environment from the future effects of climate change. 81% of Northumbrian Water and 80% of Essex & Suffolk Water participants supported this plan.

Have our customers expressed willingness for their charges to increase to fund improvements?

Participants express some concern about the cost of investments, with NW participants less willing to support the bill increases presented to them than ESW participants.

Affordability and Acceptability Research (qualitative) (2023) – Participants discussed investment in 'resilience – climate change adaptation, which was described as 'protecting water and wastewater treatment works from severe weather brought about by climate change to avoid services being interrupted'. We explained the benefits and asked if they wanted us to do this for an additional annual average cost of £5.63 (NW) / £4.59 (ESW). There was a lack of consensus amongst respondents within both regions regarding the perceived importance of this investment. A notable number felt confident that protecting assets against the impacts of climate change was necessary and important. In line with this, several ESW respondents felt that the importance of this investment lay in the benefit to future generations. For a minority from both regions, the investment seemed less important than others as a consequence of uncertainty and skepticism regarding the impact of climate change.

Pre-Acceptability Part A - Participants discussed how investment areas would be funded. Across both regions, there was a general agreement that the customers should not be solely responsible for paying for the investments in the form of increased bills. Participants living in Essex and Suffolk regions suggested that ESW should invest in efficiencies. All participants in this research were generally concerned about finances, and bill increases.

Pre-Acceptability Part B - Participants were asked to discuss and vote on the extent to which they would like to invest from 2025-30 or to push back investment until 2030 onwards to increase resilience against power interruptions or flooding. The majority of all participants supported investing from 2025, however Essex and Suffolk's support level was far greater than from those in the Northumbrian Water region.

	Area	Cost on average customer's bill	Yes – invest now (2025-30)
Climate change resilience - flooding	NW	£1.08	48%
	ESW	£0.44	91%
Climate change resilience - power interruptions	NW	£1.73	45%
	ESW	£0.47	84%

Deliberative Research into Complex Bill Drivers for 2025-30 (2022) - When presented with two options for asset health management the majority of participants (68%) preferred a risk driven approach. When explaining their choice these participants spoke of their willingness to accept a cost increase now in the hope that it will prevent costs and problems escalating in future years

SOURCE LIST

Source	Year	Code(s)	Method	Sample	No. of participants
Affordability and Acceptability (Qualitative)	2023	TBC	Qualitative - online and face-to-face workshops	Household customers Non-Household customers People Panels Future customers	224
Social Tariffs Research	2023	TBC			
Pre-Acceptability Part A	2023	TBC	Qualitative - online and face-to-face workshops	Household customers People Panels Stakeholders	120
Pre-Acceptability Part B	2023	TBC	Qualitative - online and face-to-face workshops (participants re-convened from Part A)	Household customers People Panel members	83
Draft DWMP Research	2022	E063b	Qualitative - online and face-to-face workshops	Household customers	43
Deliberative Research into Complex Bill Drivers for 2025-30	2022	TBC	Qualitative - online and face-to-face workshops	Household customers People Panel members	116
Domestic tracking research	2022-23	Q1 2023	Quantitative - telephone interviews	Household customers	2,000
People Panels #1 Introduction	2022	E020	Qualitative – Online focus group	People Panel members	57
People Panels #3 Aims and Measures	2022	E022	Qualitative – Online focus group	People Panel members	62

Source	Year	Code(s)	Method	Sample	No. of participants
People Panels #8 Asset health, public value, statutory obligations and bill profiles	2022	E065	Qualitative – Online focus group	People Panel members	52
People Panels - #5 Affordability and cost-of-living	2022	E025	Qualitative – Online focus group	People Panel members	57
People Panels #4B Long term strategy metrics and ambition June 2022	2022	E024	Qualitative – Online focus group	People Panel members	47
Copperleaf Valuations	2022	NA	Quantitative – Hall Tests	Household customers	
Defining the Future	2021	E003	Qualitative – Online workshops and telephone interviews	Household customers Non-household customers Future customers Stakeholders	100
WRMP Options Research NW (2021) WRMP Options Research ESW (2021)	2021	E072 and E073	Quantitative – online and face-to-face surveys	Household customers Non-household customers Future customers Customers in vulnerable circumstances	3,271
Brand Values	2019	E077	Quantitative - Telephone interviews	Household customers	750
Brand Values	2020	E002	Quantitative - Telephone interviews	Household customers	700
Brand Values	2021	E001	Quantitative - Telephone interviews	Household customers	700
Brand Values	2022	E076	Quantitative - Telephone interviews	Household customers	500

Source	Year	Code(s)	Method	Sample	No. of participants
Retailer and Non-Household Research	2022	E070	Site visits and Microsoft Teams calls with retailers Online community and online focus groups for non-household customers	Retailers Non-Households	34
Water Environment Improvements	2021	E053	Quantitative - Online surveys and telephone surveys Qualitative – co-creation sessions and online focus groups	Household customers, future customers, digitally excluded customers and users of water environments.	851
Water Resources North Customer Engagement (club project)	2021	E056	Qualitative – Reconvened online workshops with pre- and post- surveys (7 with NW customers, 2 with Hartlepool Water customers and 7 with Yorkshire Water customers)	Household customers, future customers, citizens, non-household customers (water and non-water dependent)	160 (approx.)
Water Resources East Customer Engagement (club project)	2021	E055	Qualitative – Reconvened online workshops with pre- and post- surveys (4 with ESW customers, 4 with Cambridge Water customers and 8 with Anglian Water customers). In-depth interviews with non-household customers and stakeholders.	Household customers, non-bill payers, future customers, economically vulnerable customers, non-household customers and stakeholders	89
WRE Promoting Water Efficiency Among Non-Households	2022		Depth interviews	NHH customers from lists provided by Everflow of Anglian Water customers	26

External sources referenced:	Year	Method	Sample	No. of participants
CCW Smart Thinking – Metering for Business Customers (2023)	2023	Online survey Depth interviews	Business water decision makers who are non-sole traders with at least 1 operating business premise and a water meter in England and Wales	539
Ofwat Cost-of-living: wave three	2023	Online survey	Water bill payers in England and Wales Ethnic minority respondents	3,132
Ofwat and CCW Preferences Research	2022	Qualitative – online focus groups and online in-depth interviews	Household customers, non-household customers, future customers, customers in vulnerable circumstances, customers who speak English as a second language	136 (est.)
Customer spotlight: People's views and experiences of water	2022	Quantitative – Online survey, telephone survey	Adults in England and Wales, participants from ethnic minority communities, digitally disenfranchised' respondents	2,951
CCW and Ofwat Non-household Customer Insight Survey	2022	Telephone interviews	Non-household customers of all types and sizes of businesses, charities and public-sector organisations	691
Waterwise Public attitudes towards smart metering	2021	Survey Focus groups	UK residents	1,026 plus two focus groups